



UNIVERSITY OF SARGODHA
OFFICE OF THE REGISTRAR
(ACAD BRANCH)

(To be substituted with Same No. & Date)

NOTIFICATION

In continuation of earlier notification No. SU/Acad/26/94 dated 30.01.2026 and on recommendations of Director Institute of Education, the Vice Chancellor is pleased to approve the implementation of revised curriculum of Bachelor of Education (B.Ed.) (5th Semester Intake) w.e.f. **Spring-2026** for Main Campus and Affiliated Colleges.

(WAQAR AHMAD)

Additional Registrar (General)

Dated: 02.04.2026

No. SU/Acad/26/305

CC:

1. Dean Faculty of Social Sciences
2. Controller of Examinations
3. Director, Institute of Education
4. Director Academics
5. Director, QEC
6. Additional Registrar (A & R) *{With the request to forward the notification alongwith curriculum to all Principals of affiliated colleges concerned}*
7. Secretary to the Vice-Chancellor
8. PA to Registrar
9. Notification File

Bachelor of Education (B.Ed)
5th Semester Intake
Scheme of Studies
and
Course Outlines



2025

Institute Of Education
University Of Sargodha

(Effective from Spring 2026)

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Dr. Naveed Nadeem Khan
Institute of Education
University of Sargodha

Vision

To become a center of excellence in teacher preparation, dedicated to producing educators capable of addressing local and global educational challenges.

2024

2025

2026

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2029

2030

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Associate Professor
Department of Education
University of Maryland

Mission

To foster a culture of continuous learning, reflective practice, and community engagement among teacher candidates.

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Assistant Professor
Department of Education
University of Southern California

UNIVERSITY OF SARGODHA**INSTITUTE OF EDUCATION**

Bachelor of Education (B.Ed) 5th Semester Intake

The Bachelor of Education (B.Ed) 5th Semester Intake program is designed to inspire, empower, and advance the professional journey of educators who have completed the Associate Degree in Education (ADE) or equivalent from other fields. This program nurtures a deeper understanding of teaching and learning, with a strong focus on inclusive practices, subject mastery, research-informed pedagogy, and educational leadership.

Goals of the Program

1. To strengthen and deepen pedagogical and content knowledge acquired in the ADE, enabling effective instruction in specialized subject areas.
2. To develop reflective, research-informed, and inquiry-based teaching practices for professional growth and school improvement.
3. To enhance competency in inclusive education and differentiated instruction for meeting the needs of diverse learners.
4. To foster leadership skills in curriculum development, assessment, and teacher collaboration for improved educational practices.
5. To promote the use of educational technology and digital pedagogy to enhance learning environments and learner engagement.
6. To prepare educators for active involvement in school-based reform, community engagement, and national education development.
7. To instill strong ethical and professional standards for leadership, responsibility, and social accountability in teaching.
8. To provide opportunities for extended practicum and field-based learning that link theory with real classroom experience.
9. To encourage engagement with contemporary educational policies, reforms, and global trends relevant to the Pakistani education system.
10. To prepare graduates for higher academic pursuits and lifelong professional development.

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Objectives of the Program

Objectives of this Program are to:

1. To demonstrate advanced pedagogical strategies for teaching specific subjects effectively across grade levels.
2. To design, implement, and evaluate curriculum units aligned with the Single National Curriculum (SNC) and other relevant standards.
3. To use action research to identify and solve classroom challenges based on evidence and reflection.
4. To analyze and apply inclusive education strategies for supporting students with special needs and diverse backgrounds.
5. To critically reflect on teaching practices using feedback, peer review, and student assessment data.
6. To apply digital tools and platforms to enhance teaching, learning, and student engagement.
7. To plan and conduct effective classroom assessments using a variety of formative and summative techniques.
8. To demonstrate leadership in collaborative learning environments, including peer mentoring and lesson study.
9. To understand and analyze national education policies, teacher standards, and school reforms in Pakistan.
10. To apply knowledge of educational psychology to support learners' cognitive and socio-emotional development.
11. To promote gender equity, ethics, and values of social justice in educational practice.
12. To manage classrooms effectively through proactive behavior strategies and student-centered approaches.
13. To engage in professional dialogue, school development initiatives, and community outreach projects.
14. To prepare professional development plans and portfolios for career growth and advancement.
15. To critically evaluate global trends in education and adapt relevant practices to local school contexts.

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Scheme of Studies

BACHELOR OF EDUCATION (B.ED) 5TH SEMESTER INTAKE

1. **Title of Degree Program:** Bachelor of Education (B.Ed) 5th Semester Intake
2. **Program Learning Outcomes:**
3. By the completion of Bachelor of Education (B.Ed) degree program, the graduates will be able to:
 - a) Demonstrate a comprehensive understanding of content knowledge, educational theories, instructional strategies, and assessment methods to effectively plan, deliver, and evaluate lessons that engage and support diverse learners.
 - b) Apply differentiated student centered instructional techniques to accommodate varied learning styles, abilities, and backgrounds, ensuring all students can succeed academically and socially in an equitable environment to foster collaboration, critical thinking and problem solving skills.
 - c) Exhibit a strong commitment to professional ethics, including respect, integrity, and confidentiality, while fostering an inclusive, equitable, and culturally responsive learning environment.
 - d) Show a commitment to lifelong learning by staying informed of current research, technological advancements, and innovations in education that enhance instructional effectiveness and contribute to professional growth.

4. **Program Structure:**

Duration	Minimum 2-Years (4-Semesters), Maximum 3-Years (6-Semesters)		
Admission Requirements:	Eligibility: At least 45% marks in graduation or ADA or equivalent qualification		
Degree Completion Requirements:	Duration: 2 years Semester Duration: 16-18 Week Semesters:4 Course Load per Semester: 15-21 Credit Hours Number of Courses per semester: 5-7 (not more than 3lab/ practical courses) summer semesters: Up-to 9 credit hours (for remedial/deficiency/failure/repetition courses only) Structure of the Scheme: Credit Hours Distribution:		
	Nature of Area/ Subject	Courses	Credit Hours
	Major (47 Credit Hours)	Professional Education Courses (Compulsory)	2 06
		Pedagogy Courses (Compulsory)	4 12
		Class Observation and Practice Teaching (Practical)	2 11
		Specialization Courses (Electives)	6 18
	General Compulsory courses	02	02
	Interdisciplinary Courses (From Pool of Courses)	4	12
	Internship	1	3
	Capstone Project	1	3
	Total	22	67
	Total Credit Hours		67

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 Jharkhand State University

5. General Courses (Mandatory/Core Courses) of Credit Hours

Note: The minimum requirement for General Courses is 2 credits hours and will be offered in 6th and 8th semesters only:

1.	URCG-5129	Understanding of Holy Quran I	1(0-1)	Nil
	URCG-5130	Understanding of Holy Quran II	1(0-1)	
	URCG-5131	Or (For Non-Muslim Students)		
	URCG-5132	Ethics I	1(0-1)	
		Ethics II	1(0-1)	

6. Major: Professional Courses (Compulsory/Fixed): 06 Credit Hours

2.	EDUC-6201	Educational Assessment and Evaluation	3(3-0)	Nil
3.	EDUC-6202	Research Methods in Education	3(3-0)	Nil

7. Pedagogy Courses (Compulsory/Fixed): 12 Credit Hours

1.	EDUC-6203	Teaching of Social Studies and Islamic Studies	3(3-0)	Nil
2.	EDUC-6204	Teaching of Mathematics	3(3-0)	Nil
3.	EDUC-6205	Teaching of Art, Crafts and Calligraphy	3(3-0)	Nil
4.	EDUC-6206	Teaching of Science	3(3-0)	Nil

8. Interdisciplinary Courses: Minimum 12 credit hours

Four interdisciplinary courses will be offered from pool of courses

1.	EDUC-6207	Economics of Education	3(3-0)	Prerequisite
2.	EDUC-6208	Education in Pakistan	3(3-0)	Nil
3.	EDUC-6209	Sociology of Education	3(3-0)	Nil
4.	EDUC-6210	Comparative Education	3(3-0)	Nil
5.	EDUC-6211	Guidance and Counselling in School	3(3-0)	Nil
6.	EDUC-6212	Human Growth and Development	3(3-0)	Nil
Interdisciplinary Courses Credit Hours Total			12	

9. Field experience: Minimum 9 credit hours:

1	EDUC-6216	Practice Teaching - I	5(0-5)	Nil
2	EDUC-6217	Practice Teaching - II	6(0-6)	

10. Internship: 03 credit hours:

1.	EDUC-6218	Internship	3(0-3)	Nil
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11. Capstone project: Minimum 03 credit hours:

This project requires faculty supervision and evaluation following department guidelines

1	EDUC-6219	Capstone Project	3(3-0)	Nil
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 Associate Professor
 Institute of Education
 University of Sargodha

12. Specialization Courses (Electives): 18 Credit Hours

Students will opt any of the following area of specialization

Sr	Course Code	Course Title	Credit Hours	Prerequisite
Specialization 1: Early Childhood Care and Education (Select any Six Courses)				
1.	EDUC-6220	Child Care and Development ✓	3(3-0)	Nil
2.	EDUC-6221	Early Childhood Education: History, Theory & Practice ✓	3(3-0)	Nil
3.	EDUC-6222	Models of Early Childhood Care and Education ✓	3(3-0)	Nil
4.	EDUC-6223	Early language and Literacy Development ✓	3(3-0)	Nil
5.	EDUC-6224	Educational Games at ECE Level ✓	3(3-0)	Nil
6.	EDUC-6225	Assessment of Learning in Early Years ✓	3(3-0)	Nil
7.	EDUC-6226	Technology in Early Childhood Education ✓	3(3-0)	Nil
Specialization 2: Educational Research (Select any Six Courses)				
1.	EDUC-6227	Data Analysis: Qualitative and Quantitative Techniques ✓	3(3-0)	Nil
2.	EDUC-6228	Project Management ✓	3(3-0)	Nil
3.	EDUC-6229	Report Writing ✓	3(3-0)	Nil
4.	EDUC-6230	Instrument Development ✓	3(3-0)	Nil
5.	EDUC-6231	Research Ethics and Professional Writing ✓	3(3-0)	Nil
6.	EDUC-6232	Research Methods for Education in the Digital Age ✓	3(3-0)	Nil
7.	EDUC-6233	Applied Research in Education	3(3-0)	Nil
Specialization 3: Educational Assessment (Select any Six Courses)				
1.	EDUC-6234	Test Development ✓	3(3-0)	Nil
2.	EDUC-6235	Classroom Assessment Strategies ✓	3(3-0)	Nil
3.	EDUC-6236	Alternative Assessment Techniques ✓	3(3-0)	Nil
4.	EDUC-6237	Educational Assessment in the Digital Age ✓	3(3-0)	Nil
5.	EDUC-6238	Data-driven Decision Making in Educational Assessment ✓	3(3-0)	Nil
6.	EDUC-6239	Assessment and Reporting of Students' Learning ✓	3(3-0)	Nil

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 Department of Education
 Faculty of Education

7.	EDUC-6240	Psychometrics and Standardized Testing ✓	3(3-0)	Nil
Specialization 4: Educational Leadership and Management (Select any Six Courses)				
1.	EDUC-6241	School Organization and Management ✓	3(3-0)	Nil
2.	EDUC-6242	Foundations of Educational Leadership ✓	3(3-0)	Nil
3.	EDUC-6243	Educational Laws and Policies ✓	3(3-0)	Nil
4.	EDUC-6244	Educational Planning & Financing ✓	3(3-0)	Nil
5.	EDUC-6245	Human Resource Management in Education ✓	3(3-0)	Nil
6.	EDUC-6246	Human Relations in Schools ✓	3(3-0)	Nil
7.	EDUC-6247	Financial Management for School Leaders ✓	3(3-0)	Nil
Specialization 5: Curriculum Studies (Select any Six Courses)				
1.	EDUC-6248	Curriculum Planning, Design and Implementation ✓	3(3-0)	Nil
2.	EDUC-6249	Curriculum Evaluation and Assessment ✓	3(3-0)	Nil
3.	EDUC-6250	Models of Curriculum ✓	3(3-0)	Nil
4.	EDUC-6251	Curriculum Change & Innovation ✓	3(3-0)	Nil
5.	EDUC-6252	Curriculum Adaptation ✓	3(3-0)	Nil
6.	EDUC-6253	Comparative Curriculum Studies ✓	3(3-0)	Nil
7.	EDUC-6254	Instructional Materials Development ✓	3(3-0)	Nil
Specialization 6: STEM Education (Select any Six Courses)				
1.	EDUC-6255	Introduction to STEM Education ✓	3(3-0)	Nil
2.	EDUC-6256	Integrating STEM Education Methods ✓	3(3-0)	Nil
3.	EDUC-6257	Instructional Scaffolding in STEM Education ✓	3(3-0)	Nil
4.	EDUC-6258	STEM Curriculum Design and Instructional Materials ✓	3(3-0)	Nil
5.	EDUC-6259	Learning in STEM ✓	3(3-0)	Nil
6.	EDUC-6260	Assessment in STEM Education ✓	3(3-0)	Nil
7.	EDUC-6261	Practicum in STEM Teaching ✓	3(3-0)	Nil
Specialization 7: Educational Technology (Select any Six Courses)				
1.	EDUC-6262	Instructional Design and Technology ✓	3(3-0)	Nil

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course content

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2.	EDUC-6263	Emerging Technologies in Education	3(3-0)	<i>Nil</i>
3.	EDUC-6264	Learning Analytics and Educational Data	3(3-0)	<i>Nil</i>
4.	EDUC-6265	Mobile and Online Learning Development	3(3-0)	<i>Nil</i>
5.	EDUC-6266	Learning Management Systems (LMS) and E-Learning Tools	3(3-0)	<i>Nil</i>
6.	EDUC-6267	Digital Teaching and Learning	3(3-0)	<i>Nil</i>
7.	EDUC-6268	Gamification and Interactive Learning	3(3-0)	<i>Nil</i>
Specialization 8: Artificial Intelligence in Education (Select any Six Courses)				
1.	EDUC-6269	Introduction to Artificial Intelligence in Education	3(3-0)	<i>Nil</i>
2.	EDUC-6270	Artificial Intelligence in Schools	3(3-0)	<i>Nil</i>
3.	EDUC-6271	Artificial Intelligence for Teachers and Education Leaders	3(3-0)	<i>Nil</i>
4.	EDUC-6272	Artificial Intelligence Supported Educational Technologies	3(3-0)	<i>Nil</i>
5.	EDUC-6273	Artificial Intelligence in Education Ethics and Impacts	3(3-0)	<i>Nil</i>
6.	EDUC-6274	Future Trends and Innovations in AI for Education	3(3-0)	<i>Nil</i>
7.	EDUC-6275	Artificial Intelligence Powered Learning Tools and Platforms	3(3-0)	<i>Nil</i>

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 University of Sargodha

Semester wise Distribution

Bachelor of Education (B.Ed) . (5th Semester Intake)

Bridging Semester: (For students other than education field)

Category	Course Code	Course Title	Credit Hours	Pre-Requisite	Offering Semester
Deficiency Course-1	EDUC-5201	Foundations of Education	3(3-0)	Nil	5 th
Deficiency Course -2	EDUC-5204	Educational Psychology	3(3-0)	Nil	6 th
Deficiency Course -3	EDUC-5207	Teaching Profession	3(3-0)	Nil	6 th
Deficiency Course -4	EDUC-5209	School Management	3(3-0)	Nil	7 th
Professional -5	EDUC-5210	Curriculum Development	3(3-0)	Nil	7 th

Note: Deficiency courses will be non-credit, each course equivalent to 3 credit hours in workload.

Semester-V

Category	Course Code	Course Title	Credit Hours	Pre-Requisite
Interdisciplinary	EDUC-XXXX	Interdisciplinary Course -- I	3(3-0)	Nil
Interdisciplinary	EDUC-XXXX	Interdisciplinary Course -- II	3(3-0)	Nil
Professional 11	EDUC-6201	Educational Assessment & Evaluation	3(3-0)	Nil
Pedagogy Course 3	EDUC-6203	Teaching of Social Studies and Islamiat	3(3-0)	Nil
Elective 1	EDUC-XXXX	Specialization Elective Course - I	3(3-0)	Nil
Elective 2	EDUC-XXXX	Specialization Elective Course- II	3(3-0)	Nil
Deficiency Course-1	EDUC-5201	Foundations of Education	Non-credit	Nil

Semester Total Credit Hours: 18

Semester-VI

Category	Course Code	Course Title	Credit Hours	Pre-Requisite
Interdisciplinary	EDUC-XXXX	Interdisciplinary Course -- III	3(3-0)	Nil
Professional 12	EDUC-6202	Research Methods in Education	3(3-0)	Nil
Pedagogy Course 4	EDUC-6204	Teaching of Mathematics	3(3-0)	Nil
Pedagogy Course 5	EDUC-6205	Teaching of Art, Crafts and Calligraphy	3(3-0)	Nil
Elective 3	EDUC-XXXX	Specialization Elective Course III	3(3-0)	Nil
General Course 1	URCG-5129 URCG-5131	Understanding of Holy Quran I Or (For Non-Muslim Students)	1(0-1)	Nil ✓

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 University of Jammu

Deficiency Course -2	EDUC-5204	Ethics I Educational Psychology	Non-credit	Nil
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Semester Total Credit Hours: 16**Semester-VII**

Category	Course Code	Course Title	Credit Hours	Pre-Requisite
Pedagogy Course 6	EDUC-6206	Teaching of Science	3(3-0)	Nil
Interdisciplinary 4	EDUC-XXXX	Interdisciplinary Course – IV	3(3-0)	Nil
Elective 4	EDUC-XXXX	Specialization Elective Course - IV	3(3-0)	Nil
Elective 5	EDUC-XXXX	Specialization Elective Course - V	3(3-0)	Nil
Elective 6	EDUC-XXXX	Specialization Elective Course - VI	3(3-0)	Nil
Deficiency Course -3	EDUC-5207	Teaching Profession	Non-credit	Nil

Semester Total Credit Hours: 15**Semester-VIII**

Category	Course Code	Course Title	Credit Hours	Pre-Requisite
Practical 1	EDUC-6216	Practice Teaching – I	5(0-5)	Nil
Practical 2	EDUC-6217	Practice Teaching -- II	6(0-6)	Nil
Practical 3	EDUC-6218	Internship	3(0-3)	Nil
Caps-1	EDUC-6219	Capstone Project	3(3-0)	Nil
General Course 2	URCG-5130 URCG-5132	Understanding of Holy Quran II Or (For Non-Muslim Students) Ethics II	1(0-1)	Nil
Deficiency Course -4	EDUC-5209	School Management	Non-credit	Nil
Deficiency Course -4	EDUC-5210	Curriculum Development	Non-credit	Nil

Semester Total Credit Hours: 18**Degree Program Total: 67**

M. A. H.
Associate Professor
Department of Education
University of Jeddah

Course Outlines

General Courses (Mandatory/Core Courses) 02 Credit Hours

URCG-5129	Understanding of Holy Quran I	1(0-1)
URCG-5130	Understanding of Holy Quran II Or (For Non-Muslim Students)	1(0-1)
URCG-5131	Ethics I	1(0-1)
URCG-5132	Ethics II	1(0-1)

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University of Baghdad

URCG-5129
(0-1)

Understanding of Quran - I

1

Course Book: Muallim ul Quran (Volume 1, 2 & 3) by Dr Ubaid ur Rahman
Contact Hours: 3 per week
Weeks: 15-16 (45-48 hours)

Course Learning Outcomes:

By the end of this course, students will be able to:

1. Develop the ability to understand basic words of the Quran, phrases and sentences that do not contain verbs (unit 1 to 5 of Muallim ul Quran Book) and then sentences having present tense (first half of unit 6 of Muallim ul Quran Book).
2. Acquire a strong foundation for understanding long verses of the Quran with clarity.
3. Comprehend Quranic vocabulary, particles (operative & non operative particles), compounds (Adjective & Possessive compound), pronouns (singular & plural) and types of plural through hundreds of Quranic sentences.
4. Recognize and understand different styles of Quranic sentences, including nominal sentence, emphatic sentence, double emphatic sentence, negative sentence, interrogative sentence, oath -based sentences.
5. Strengthen understanding of fundamental Quranic linguistic styles, expressions and idioms.
6. Understand at least 30 to 40% of each page of the holy Quran.

Provision of material, content and books:

Paper book: All volumes are available in printed book form.

Tutorial videos: Teaching video of each lesson available on YouTube.

Confirmation Videos: A complete series of confirmation videos of all lessons is available in which the student can confirm his answers.

A flipbook: A flipbook edition is also accessible.

Helping material: Helping material for the teachers like quizzes, question papers and images is available

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Assistant Professor
Department of Education
University of Jammu

Course Outline:

Weeks	Lectures (1.5 hrs)	Units	Lessons	Assignments/Home Task	Linguistic Rules
1.	1.	1	1-6	Writing the meaning of Quranic words Lesson 1-8	Proper Noun Masculine & Feminine
	2.	1	9-14	Writing the meaning of Quranic words 9-14	Two kinds of plural Concept of (ر) "And" Common Noun
2.	1.	1	15-17	Writing the meaning of Quranic words, phrases & translation of Sentences 15-17	Demonstrative Noun (This & That for Masculine (هنا، هنه) Demonstrative Noun (This & That for Feminine) (هنا، تلك، تلك)
	2.	1	18-19 & Revision (Unit 1)	Writing the meaning of Quranic words, phrases & translation of Sentences 17-19 Quiz	Laam for emphasis (لام التأكيد) Superlative Degree like أكبر Revision of all Quranic Sentences
3.	1.	Unit 2	1-3	Writing the meaning of Quranic words, phrases & translation of Sentences 1-3	Emphatic Particle ان Preposition "For" (اللام) Preposition (في)
	2.	2	4-6	Writing the meaning of Quranic words, phrases & translation of Sentences 4-6	Preposition (على، من، إلى)
4.	1.	2	7-9	Writing the meaning of Quranic words & translation of Sentences 7-9	Preposition (بإزاء) Absolute Negation Particle Exceptive Particle (لا التوكيد) (إلا) (با التوكيد) (للجس)
	2.	2	10-13 & Revision (Unit 2)	Writing the meaning of Quranic words, phrases & translation of Sentences 10-13 Quiz	Subordinating Conjunction (أن، كان) Vocative Particle (حرف النداء)

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University of Benghazi

5.	1.	Unit 3	1-2	Writing the meaning of Quranic phrases 1-2	Quranic Adjective Compounds (صفة وموصولة)
	2.	3	3-5	Writing the meaning of Quranic phrases & translation of sentences 3-5	Quranic Possessive Construction (مضاف ومضاف إليه)
6.	1.	3	6-7	Writing the meaning of Quranic phrase translation of sentences 6-7	Quranic Possessive Construction (مضاف ومضاف إليه)
	2.	3	8-10 & Revision (Unit 3) Quiz	Writing the meaning of Quranic phrase & translation of sentences 8-10 Quiz	Active Participle (اسم لاتعل)
7.	1.	Unit 4	1-2	Writing the meaning of Quranic phrase & translation of sentences 1-2	Personal Pronoun He (هو) (المتصل) Possessive Pronoun His (له) (المتصل)
	2.	4	3-4	Writing the meaning of Quranic phrase & translation of sentences 3-4	Possessive Pronoun with prepositions like في بيته Pronoun "His" with prepositions like له بيته
8.	1.	4	5-8	Writing the meaning of Quranic sentences 5-8	Personal Pronoun You (انت) (المتصل) Possessive Pronoun Your (لك) (المتصل) Possessive Pronoun with prepositions like في بيتك Pronoun "your" with prepositions like لك بيتك
	2.			Mid Term	

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9.	1.	4	9-12	Writing the meaning of Quranic phrases & sentences 9-12	Personal Pronoun She (هي المتصل) Possessive Pronoun Her (ها المتصل) Possessive Pronoun with prepositions like لي بيتها Pronoun "Her" with prepositions like لبيتها
	2.	4	13-16	Writing the meaning of Quranic phrases & sentences 13-16	Personal Pronoun I (انا المتصل) Possessive Pronoun Her (هي المتصل) Possessive Pronoun with prepositions like لي بيتي Pronoun "My" with prepositions like لي بيتي
10.	1.	4	17 & Revision Unit 4	Revision of all Quranic sentences of Unit 4 Quiz	Adverb (كان)
	2.	Unit 5	1-2	Writing the meaning of Quranic phrases & sentences 1-2	Masculine Plural جمع المذكر المتكلم و جمع المذكر السالم المسروق بحرف العر
11.	1.	5	3-4	Writing the meaning of Quranic phrases & sentences 3-4	Possessive Construction with Plurals جمع المذكر السالم المسروق بالإضافة
	2.	5	5-6	Writing the meaning of Quranic phrases, sentences & verses 5-6	Personal Pronoun They (هم المتصل) Possessive Pronoun Their (هم المتصل)
12.	1.	5	7-8	Writing the meaning of Quranic phrases, sentences & verses 7-8	Possessive Pronoun with prepositions like لي بيتهم Pronoun "Their" with prepositions like لهم
	2.	5	9-11	Writing the meaning of Quranic phrases, sentences & verses 9-11	Personal Pronoun You (انت المتصل) Possessive Pronoun Your (كمتصل) Possessive Pronoun with prepositions

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 University of Al-Qadisiyah

3.	1.	5	12-14	Writing the meaning of Quranic phrases & sentences & verses 12-14	فيم، انكم ليكن Pronoun "Your" with prepositions like لكم Personal Pronoun We (نحن) (الماتصل) Possessive Pronoun Our نا (الماتصل)
	2.	5	15-16	Writing the meaning of Quranic sentences & verses 15-16	Possessive Pronoun with prepositions like في بيتنا Pronoun "Our" with prepositions like لنا
4.	1.	5	17-18	Writing the meaning of Quranic sentences & Verses 17-18	Demonstrative Pronoun These, Those (هؤلاء - اولئك)
	2.	5	19-23	Writing the meaning of Quranic sentences & Verses 19-23	ما / إلا، إن / إلا، إنما، ليس، ما (ألم، إن، بل، كان) (ألا، أليس، اليوم، يومئذ، سبحان، سأبينها، قل، إن، بئس، نعم، كلا، ما أمر الله، حسب، أعلم به، مسير، موجبه، ديناً (تميز))
5.	1.	5	Revision Unit 5	Quiz	
	2.	5	1-3 (till Page 16)	Writing the meaning of Quranic Verbs & Translation of Quranic Sentences & Verses (1-3)	Introduction of Present Tense (العمل المضارع) & Verbal Sentence (جملة فعلية) Present Tense العمل المضارع صيغة المجرى يعلم
6.	1.	6	3 (From Page 17) & 4-5	Translation of Quranic Sentences & Verses 3-5	Present Tense العمل المضارع صيغة المجرى يعلم
	2.	6	6	Translation of Quranic Sentences & Verses	Present Tense العمل المضارع صيغة الجمع يعلمون

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URCG-5130
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Understanding of Quran - II

1

Course Book: Muallim ul Quran (Volume 3, 4 & 5) by Dr Ubald ur Rahman

Credit Hours: 1 (0-1)

Contact Hours: 3 per week

Weeks: 15-16 (45-48 hours)

Course Learning Outcomes:

By the end of this course, students will be able to:

1. Directly comprehend hundreds of Quranic sentences & verses.
2. Understand at least 80 to 85 % of each page of the holy Quran.
3. Understand common verses across different Quranic topics.
4. Achieve proficiency in the basic and advance linguistic aspects of the Arabic language.
5. Understand the difference between Quranic verbs in various forms, such as present, past and Imperative.
6. Develop the ability to understand long verses of the holy Quran independently and then comprehend their interpretation.

Provision of material, content and books:

Paper book: All volumes are available in printed book form.

Tutorial videos: Teaching video of each lesson available on YouTube.

Confirmation Videos: A complete series of confirmation videos of all lessons is available in which the student can confirm his answers.

A flipbook: A flipbook edition is also accessible.


Helping material: Helping material for the teachers like quizzes, question papers and Images is available on website.

Course Outline:					
Weeks	Lectures	Units	Lessons	Assignments/Home Task	
1	1.	5	6	Understanding & Translation of Verses	Present Tense سنبهت جميع منكر غائب ماضٍ معدوم
	2.	6	7-8	Understanding & Translation of Verses	Present Tense سنبهت جميع منكر غائب ماضٍ معدوم
2	1.	6	9-10	Understanding & Translation of Verses	Present Tense سنبهت ماضٍ منكر مطلق (تجد) وجم منكر مخاطب (تجدون)
	2.	6	11-12	Understanding & Translation of Verses	Present Tense سنبهت جميع منكر مخاطب (تجدون)

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2	1	5	13-15	Understanding & Translation of Verbs	Present Tense
	2	5	16-18	Understanding & Translation of Verbs	Present Tense
3	1	6	19-22	Understanding & Translation of Verbs	Conditional Tenses & modal verbs
	2	6	23-27	Understanding & Translation of Verbs	Aspect (Present, Past, Future)
4	1	6	28-31	Understanding & Translation of Verbs	Cases of Hamul (Case 1)
	2	6	Revision (Unit 6)	Quiz	Present with object pronouns & reflexive verbs
5	1	Unit 7	1 (Sec 1-3)	Understanding & Translation of Verbs	Past Tense
	2	6	1 (Sec 4-5)	Understanding & Translation of Verbs	Past Tense
6	1	6	1 (Sec 6-8)	Understanding & Translation of Verbs	Past Tense
	2	6	1 (Sec 9-10)	Understanding & Translation of Verbs	Past Tense
7	1	7	Revision	Understanding & Translation of Verbs QUIZ	Past Tense
	2	MIDTERM			
8	1	7	2 (sec 1-2)	Understanding & Translation of Verbs	Past Tense
	2	7	2 (sec 3)	Understanding & Translation of Verbs	Past Tense
9	1	7	2 (sec 4-5)	Understanding & Translation of Verbs	Past Tense
	2	7	2 (sec 6-7)	Understanding & Translation of Verbs	Past Tense
10	1	7	3 (sec 1-2)	Understanding & Translation of Verbs	Past Tense


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	2.	7	3 (sec 2-3)	Understanding & Translation of Verses	Past Tense صيغة الجمع المتكلم حديثا
2.	1.	7	3 (sec 3-4)	Understanding & Translation of Verses	Past Tense صيغة الجمع المتكلم حديثا
	2.	7	3 (sec 4-5)	Understanding & Translation of Verses	Past Tense صيغة الجمع المتكلم حديثا
3.	1.	7	4 (sec 1-2-3)	Understanding & Translation of Verses	Past Tense صيغة الجمع المتكلم حديثا
	2.	7	4 (sec 4-5)	Understanding & Translation of Verses	Past Tense صيغة الجمع المتكلم حديثا
4.	1.	7	5-6	Understanding & Translation of Verses Quiz	Past Tense صيغة المتكلم والمخاطب حديثا
	2.	7	7	Understanding & Translation of Verses	Past Tense صيغة المودت للثاني حديثا
5.	1.	7	8	Understanding & Translation of Verses	Passive Voice (Past Tense) فعل مجهول للمفرد
	2.	7	9	Understanding & Translation of Verses	Passive Voice (Past Tense) فعل مجهول للجمع
6.	1.	8	1-4	Understanding & Translation of Verses	Imperative Verb for singular فعل الأمر للمفرد
	2.	7	5-8	Understanding & Translation of Verses	Imperative Verb for plural فعل الأمر للجمع

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URCG-5131**Ethics-I****1 (1-0)****1- Course Description**

The Ethics-I course is designed to provide students with a comprehensive understanding of ethical principles, practices, and theories in various societal contexts. Throughout this degree program, students will explore the complexities of ethical theories of Semitic and non-Semitic religions along with decision-making and develop critical thinking skills to navigate moral dilemmas. This course will also enable the students to interact with others' religious identities with humanistic, inclusive and holistic approach.

2- Learning Objectives

1. Introduce students to the fundamental concepts, scope, and importance of ethics.
2. Explore the relationship between law, morality, and social values.
3. Develop a clear understanding of virtuous and immoral ethics and their impact on individual and collective life.
4. Study the role of major religious figures in the moral development of human society and enable students to apply ethical principles for personal development, conflict resolution, and social harmony.

3- Learning Outcomes

By the end of the course, students will be able to:

1. Identify and analyze major ethical theories, values, and their scope in social and individual life.
2. Differentiate between law and ethics and analyze their interrelationship.
3. Identify types of virtuous and immoral ethics and assess their social impacts.
4. Examine ethical teachings of major religions and their relevance in contemporary society.
5. Apply ethical principles to address modern challenges in personal and professional life.

4- Course Structure

1. Interactive lectures, group discussions and debates
2. Reflection papers and presentations
3. Assignments and Quiz.

Course Contents**Unit 1: Introduction and Fundamentals of Ethics**

- Literal and terminological definition of ethics
- Literal and terminological definition of values
- Relationship between law and ethics
- Need, importance, and scope of ethics

Unit 2: Types of Ethics and Their Impact on Society

- Virtuous ethics: concept, types, benefits, and outcomes
- Immoral ethics: concept, types, and harms
- Role of ethics in social refinement and establishment of peace

Unit 3: Virtuous Ethics (Akhlaq-e-Hasanah)

- Concept, need, and importance of virtuous ethics
- Scope of virtuous ethics in the light of religions

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 University of Baghdad

- Major virtues in revealed and non-revealed religions
- Impact of virtuous ethics on individual and collective life

Unit 4: Immoral Ethics (Akhlak-e-Razilah)

- Concept of immoral ethics
- Social problems caused by immoral ethics
- Practical consequences of immoral ethics
- Major vices in revealed and non-revealed religions

Unit 5: Role of World Religious Figures in Moral Development

- Prophet Moses (AS): introduction, miracles, and role in moral refinement
- Prophet Jesus (AS): introduction, miracles, and role in moral refinement
- Prophet Muhammad (ﷺ): introduction, miracles, and role in moral refinement

Textbook

1. Izutsu, T. (2002). *Ethico-Religious Concepts in the Qur'an*. McGill-Queen's University Press.

Suggested Readings

1. Gert, B. (2005). *Morality: Its Nature and Justification*. Oxford University Press.
2. MacIntyre, A. (2007). *After Virtue: A Study in Moral Theory*. University of Notre Dame Press.
3. Al-Ghazali, Abu Hamid (2001). *The Alchemy of Happiness*. Islamic Texts Society.
4. Nasr, S. H. (1994). *The Heart of Islam: Enduring Values for Humanity*. Harper One.
5. Beauchamp, T. L., & Childress, J. F. (2019). *Principles of Biomedical Ethics*. Oxford University Press.
6. Hasan, Z. (2010). *Ethics in Islam: Key Concepts and Contemporary Challenges*. Islamic Research Institute.

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1- Course Description

The course *Ethics-II* is designed to provide students with a deeper understanding of ethical principles and practices from both Semitic and non-Semitic religions, as well as their application in professional and social contexts. Students will engage with Jewish, Christian, Islamic, Hindu, Buddhist, Sikh, Confucian, and Jain ethical traditions. The course emphasizes moral reasoning, decision-making, tolerance, and peacebuilding. It aims to cultivate an inclusive, humanistic, and holistic approach towards ethical living and interfaith engagement.

2- Learning Objectives

The course objectives are to:

1. Understand the fundamental principles and theories of ethics.
2. Introduce the ethical and moral teachings of Judaism, Christianity, Islam, and Hinduism.
3. Explore the ethical teachings of non-Semitic religions such as Buddhism, Sikhism, Confucianism, and Jainism.
4. Develop critical thinking skills to evaluate ethical arguments and theories.
5. Promote ethical leadership and interfaith harmony.

3- Learning Outcomes

By the end of this course, students will be able to:

1. Identify and analyze major ethical theories and teachings from world religions.
2. Understand the role of religions in improving moral values and social behavior.
3. Demonstrate ethical decision-making in various personal and professional contexts.
4. Recognize the impact of ethical decisions on individuals, communities, and society.
5. Apply skills of ethical leadership, including communication, conflict resolution, and inclusive engagement.

4- Course Structure

1. Interactive lectures, group discussions and debates
2. Reflection papers and presentations
3. Assignments and Quiz

Course Contents

Unit 1: Ethical Teachings of Semitic Religions

- Judaism and its ethical teachings
- Christianity and its ethical teachings
- Islam and its ethical teachings

Unit 2: Ethical Teachings of Non-Semitic Religions

- Hinduism and its ethical teachings
- Sikhism and Buddhism: ethical values and practices
- Confucian and Jain ethical traditions

Unit 3: Professional Ethics

- Ethics for students and teachers
- Ethics in doctor-patient relationships
- Ethics in trader-customer interactions

Unit 4: Concept and Significance of Tolerance

- Definition, need, and importance of tolerance

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 Bangalore

- Teachings of Semitic religions on tolerance and their contemporary relevance
- Teachings of non-Semitic religions on tolerance and their contemporary relevance

Unit 5: Foundational Values and Ethics for Peacebuilding in Society

- Respect for sacred scriptures, personalities, places of worship, and religious symbols
- Promotion of tolerance and broadmindedness
- Encouragement of dialogue and harmony
- Benevolence towards humanity
- Establishment of justice and fairness
- Patience, forbearance, and forgiveness

Textbook

- Kidder, R. M. (2009). *How Good People Make Tough Choices: Resolving the Dilemmas of Ethical Living*. Harper.

Suggested Readings

1. Barash, D. P., & Webel, C. P. (2014). *Peace and Conflict Studies*. Sage.
 2. Smart, N. (1998). *The World's Religions*. Cambridge University Press.
 3. Nasr, S. H. (2003). *The Heart of Islam: Enduring Values for Humanity*. HarperOne.
 4. Sharma, A. (2006). *Hindu Ethics: Purity, Abortion, and Euthanasia*. SUNY Press.
 5. Harvey, P. (2000). *An Introduction to Buddhist Ethics: Foundations, Values and Issues*. Cambridge University Press.
 6. Coward, H., & Perkinson, J. (2013). *A Cross-Cultural Dialogue on Ethical Leadership*. Wilfrid Laurier University Press.
- Confucius. (1998). *The Analects*. Oxford University Press

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Course Description

The purpose of this course is to provide basic understanding of fundamental concepts of Educational Assessment and Evaluation. The course is designed to assist students in developing a knowledge base of what teachers should know and be able to do in relation to educational assessment. Upon completing this course the students will be expected to develop, administer, score and report an achievement test with considering the evidences of reliability and validity. Students will be able to construct and a valid and reliable achievement test for assessing classroom teaching. Further, students will become familiar with the alternate assessment techniques and ultimate scoring and reporting in appropriate way. The focus of this course will be on practical application of the assessment and evaluation procedures in class room teaching context. This will enable the students to know how to develop relevant educational assessment, describe fundamental aspects on the quality of assessment procedures, evaluate tests and items using statistical and qualitative methods, incorporate meaning into test score scales using both norm-referenced and criterion-referenced procedures and use the results of standardized tests to help make decisions about students and educational systems.

Course Objectives

After studying this course the students will be able to:

1. Comprehend and apply various tools and techniques of measuring student's progress.
2. Understand the importance of educational assessment and action research in educational decision making
3. Construct and analyze various types of test items.
4. Construct and validate various types of classroom tests in accordance with the course objectives and nature of content for different school subjects
5. Understand and apply different statistical techniques to interpret student's scores in different fields.
6. Report the students' results, scores or grades according to principles of measurement and evaluation in education
7. Understand and elaborate main characteristics of a good test.

Course Outline**Unit 1: Introduction**

- 1.1 Understanding of basic concepts: testing, measurement, assessment, evaluation, and accountability
- 1.2 Role of assessment in the teaching and learning process
- 1.3 Types of assessment procedures
- 1.4 General principles of assessment
- 1.5 Assessment and instructional process

Unit 2: Instructional Objectives

- 2.1 Criteria for selecting appropriate objectives
- 2.2 Stating educational objectives: various methods and approaches
- 2.3 Taxonomies of educational objectives and their use in assessment

Unit 3: Planning and Developing Classroom Tests and Assessments

- 3.1 Purpose of classroom testing
- 3.2 Development of table of specification

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- 3.3 Selecting appropriate test items
- 3.4 Preparing relevant test items
- 3.5 Objective test items
- 3.6 Essay questions
- 3.7 Interpretive exercises
- 3.8 Measuring complex achievement
- 3.9 Performance-based assessment

Unit 4: Test Construction and Qualities of Good Tests

- 4.1 Test construction
- 4.2 Planning, organizing, administering, and scoring a test
- 4.3 Item analysis
- 4.4 Standardization of tests
- 4.5 Reliability and validity
- 4.6 Adequacy and objectivity
- 4.7 Differentiability and usability

Unit 5: Evaluating Typical Behavior / Affective Domain

- 5.1 Observation: anecdotal records, checklists, rating scales, socio-metrics
- 5.2 Self-reports and peer appraisal

Unit 6: Analysis and Interpretation of Test Results / Scores

- 6.1 Scores and types of scores
- 6.2 Graphic representation of scores
- 6.3 Frequency distribution
- 6.4 Measures of central tendency
- 6.5 Measures of variability
- 6.6 Correlation

Unit 7: Reporting and Grading of Results

- 7.1 Functions of grading and reporting systems
- 7.2 Types of grading and reporting systems
- 7.3 Reporting grades to students, parents, and school administrators
- 7.4 Counseling of students after grade reporting

Unit 8: Practical Work

- 8.1 Development of tests
- 8.2 Preparing tests and finding out their reliability and validity

Recommended Texts

1. Butler, S. M., & McMunn, N. D. (2018). *A Teacher's Guide to Classroom Assessment: Understanding and Using Assessment to Improve Student Learning*. San Francisco: Jossey-Bass.
2. Dann, R. (2012). *Promoting assessment in learning --- Improving the learning process*. London: Routledge.
3. Brown, G. T. L., & Harris, L. R. (2016). *Handbook of human and social conditions in assessment*. Routledge.
4. Stiggins, R. J. (2017). *The perfect assessment system*. ASCD.
5. Brookhart, S. M. (2013). *How to create and use rubrics for formative assessment and grading*. ASCD.

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6. Kubiszyn, T., & Borich, G. D. (2015). *Educational testing and measurement: Classroom application and practice* (10th ed.). Wiley.
7. Gronlund, N. E., & Waugh, C. K. (2008). *Assessment of student achievement* (9th ed.). Pearson/Merrill Prentice Hall.
8. Shepard, L. A., Penuel, W. R., & Pellegrino, J. W. (2018). *Using assessment to support learning and instruction: A way forward*. National Academy of Education.

Suggested Readings

1. Arends, R. I. (2004). *Learning to teach*. Boston: McGraw Hill
2. Broich, G. and Kubiszun , T. (2003). *Education Testing & Measurement*. Snigapore : John Wiley and Sons.
3. Managal , S.K. (2012). *Statistics in Psychology & Education*. New Delhi :Prentice Hall of India
4. Nitko, A. J., & Brookhart, S. M. (2014). *Educational assessment of students* (7th ed.). Pearson Education.
5. McMillan, J. H. (2017). *Classroom assessment: Principles and practice for effective standards-based instruction* (7th ed.). Pearson.
6. Linn, R. L., & Miller, M. D. (2013). *Measurement and assessment in teaching* (11th ed.). Pearson.
7. Popham, W. J. (2017). *Classroom assessment: What teachers need to know* (8th ed.). Pearson.

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1. American Educational Research Association (AERA). (n.d.). *Assessment and accountability*. <https://www.aera.net>
2. Brookhart, S. M. (2020). *Classroom assessment*. Edutopia. <https://www.edutopia.org/topic/classroom-assessment>
3. Center for Assessment. (n.d.). *Resources for educational assessment and accountability*. <https://www.nciea.org>
4. Education Corner. (2022). *Assessment methods in education*. <https://www.educationcorner.com/assessment-in-education.html>
5. Edutopia. (n.d.). *Assessment strategies*. <https://www.edutopia.org/assessment>
6. National Council on Measurement in Education (NCME). (n.d.). *Resources for educators*. <https://www.ncme.org>
7. UNESCO. (n.d.). *Assessment in education*. <https://www.unesco.org/en/education/assessment>
8. Formative Assessment for Students and Teachers (FAST SCASS). (n.d.). *Resources on formative assessment*. <https://www.cesso.org>

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Course Description

This course is designed for B. Ed Honors candidates to prepare them to situate themselves as researching professionals and at the same time enhance their own professional practice. The aims and objectives of this course are to introduce BS students to the basic concepts of language which have immediate relation to their ordinary as well as academic life. To sensitize students to the various shades and aspects of language, to show that it is not a monolithic whole but something that can be looked at in detail. The core concepts of research in linguistics will particularly be discussed. The students will further be taught and hand on practice will be given about the citation and on line research. The other objective of this course is to develop a research orientation among the students and to acquaint them with fundamentals of research methods. Further, the course aims at introducing them to the basic concepts used in research and to scientific social research methods and their approach. Some other objectives of the course are to develop an understanding of various research designs and techniques and to identify various sources of information for literature review and data collection. Lastly the aims of the course are to develop an understanding of the ethical dimensions of conducting applied research.

Course Objectives

At the end of the course, the learners will be able to

1. Discuss the meaning, nature & scope of research in education
2. Situate themselves as researching professionals
3. Conduct research in different educational settings
4. Write research report and present it effectively

Course Outline

Unit 1: The Nature of Educational Research

- 1.1 Definitions of educational research
- 1.2 Scope and importance
- 1.3 Steps in the research process
- 1.4 Characteristics of educational research: systematic, objective, empirical, and logical
- 1.5 Ethical considerations in educational research
- 1.6 Qualities of a researcher

Unit 2: Research Problem and Hypothesis

- 2.1 Research problem and its characteristics
- 2.2 Identifying research problems
- 2.3 Criteria of a good research topic: clarity, relevance, feasibility, researchability
- 2.4 Definition and role of hypothesis in quantitative research
- 2.5 Types of hypotheses: directional, non-directional, null, and alternative

Unit 3: Types of Educational Research

- 3.1 Basic (fundamental) vs. applied research
- 3.2 Descriptive research
- 3.3 Correlational research
- 3.4 Experimental research
- 3.5 Historical research

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3.6 Action research: definition, process, and classroom relevance

Unit 4: Techniques of Reviewing Literature

- 4.1 Purpose and importance of literature review
- 4.2 Sources of literature: primary, secondary, and tertiary sources
- 4.3 Internal and external validity of resources
- 4.4 Steps in conducting a literature review
- 4.5 Online databases and digital libraries (ERIC, JSTOR, Google Scholar, etc.)
- 4.6 APA referencing style (7th edition) basics

Unit 5: Methodology

- 5.1 Quantitative, qualitative, and mixed-method approaches
- 5.2 Difference between research methods and research methodology
- 5.3 Population and sample: definitions and importance
- 5.4 Probability and non-probability sampling techniques
- 5.5 Determining sample size

Unit 6: Data Collection Methods

- 6.1 Quantitative tools: questionnaires, tests, rating scales
- 6.2 Qualitative tools: interviews, observations, focus groups, field notes
- 6.3 Considerations for tool selection and development
- 6.4 Types of validity: content, construct, criterion-related
- 6.5 Types of reliability: test-retest, inter-rater, internal consistency

Unit 7: Data Analysis

- 7.1 Definition and purpose of data analysis
- 7.2 Descriptive statistics: mean, median, mode, standard deviation, frequency distribution
- 7.3 Inferential statistics: correlation, t-tests, ANOVA
- 7.4 Use of spreadsheets (Excel) or software (SPSS) for basic analysis

Unit 8: Report Writing

- 8.1 Structure and components of a research report
- 8.2 Style and language of academic writing
- 8.3 Avoiding plagiarism: paraphrasing and proper citation
- 8.4 Use of technology in report writing
- 8.5 Evaluating and finalizing the report

Recommended Texts

1. Creswell, J. W., & Creswell, J. D. (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (5th ed.). SAGE Publications.
2. Best, J. W., & Kahn, J. V. (2019). *Research in Education* (12th ed.). Pearson.
3. Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2019). *How to Design and Evaluate Research in Education* (10th ed.). McGraw-Hill.
4. Gall, M. D., Gall, J. P., & Borg, W. R. (2019). *Educational Research: An Introduction* (10th ed.). Pearson.
5. Geoffrey E. Mills, L. R. Gay (2019). *Educational research: Competencies for analysis and applications. (12th Ed.)*. NY: Merrill- Prentice Hall.

Suggested Readings

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1. Mertens, D. M. (2020). *Research and Evaluation in Education and Psychology: Integrating Diversity with Quantitative, Qualitative, and Mixed Methods* (5th ed.). SAGE Publications.
2. McMillan, J. H., & Schumacher, S. (2021). *Research in Education: Evidence-Based Inquiry* (8th ed.). Pearson.
3. Gay, L. R., Mills, G. E., & Airasian, P. (2018). *Educational Research: Competencies for Analysis and Applications* (12th ed.). Pearson.
4. Johnson, B., & Christensen, L. (2019). *Educational Research: Quantitative, Qualitative, and Mixed Approaches* (6th ed.). SAGE Publications.
5. Punch, K. F. (2016). *Introduction to Research Methods in Education* (2nd ed.). SAGE Publication
6. John W Creswell (2018). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research, (6th Ed.)*. Pearson Education. Retrieved fro

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1. ERIC – Education Research Database - <https://eric.ed.gov/>
2. SAGE Research Methods - <https://methods.sagepub.com/>
3. Harvard Graduate School of Education – Research & Insights - <https://www.gse.harvard.edu/research>
4. National Center for Education Statistics (NCES) - <https://nces.ed.gov/>
5. Social Science Research Network (SSRN) - <https://www.ssrn.com/en/>
6. MIT OpenCourseWare -- Research Methods in Education - <https://ocw.mit.edu/>
7. JSTOR – Education Research - <https://www.jstor.org/>
8. Taylor & Francis Online – Education Research Articles - <https://www.tandfonline.com/>
9. Google Scholar – Education Research - <https://scholar.google.com/>
10. British Educational Research Association (BERA) - <https://www.bera.ac.uk/>

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List of Major Pedagogy Courses

1	EDUC-6203	Teaching of Social Studies and Islamic Studies	3(3-0)
2	EDUC-6204	Teaching of Mathematics	3(3-0)
3	EDUC-6205	Teaching of Art, Crafts and Calligraphy	3(3-0)
4	EDUC-6206	Teaching of Science	3(3-0)

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EDUC-6203

Teaching of Social Studies and Islamic Studies

3(3-0)

Course Description

The purpose of this course outlines the nature of geographical concepts and the enquiry approach, and explains their significance in geographical, and Historical learning. In present curriculum, Social studies has been divided as History and Geography as separated subjects. Teaching of Social Studies is the integrated, coordinated and systematic study drawing upon disciplines of social sciences such as history, anthropology, economics, political science and sociology in relation to Pakistan. This course explains modes of creativity and the stages of the 'creative' process in geographical teaching and learning. This course will identify and explore some of the key issues around teaching geography in elementary and secondary schools. Through coming to understand these issues and debates, students will reflect on and develop practice as a geography teacher and develop a greater awareness of the wider context of geography education and how this affects geography in the elementary and secondary school curriculum. This course enables prospective teachers to teach the content effectively in the classroom by using appropriate teaching strategies and methods in history & geography.

Course Objectives

Students will be able to;

1. Develop lesson plans in history and geography
2. Teach the content effectively in the classroom by using appropriate teaching strategies and methods in history & geography.
3. Distinguish the environmental changes and their impact
4. Comprehend the Geographical features of Pakistan
5. Locate and teach the soil and its link with agricultural production and livestock

Course Outline**Unit 1: Physiography**

- 1.1 What is Physiography
- 1.2 Mountains
- 1.3 Plateaus
- 1.4 Plains

Unit 2: Climate

- 2.1 Climate and Weather
- 2.2 Temperature and Atmosphere
- 2.3 Rainfall, Winds, and Air Pressure

Unit 3: Hydrology

- 3.1 Hydrology of Pakistan
- 3.2 Glaciers, Rivers, and Lakes of Pakistan
- 3.3 Agricultural System and Minerals of Pakistan

Unit 4: Human Settlements

- 4.1 Indus Valley Civilization
- 4.2 The Aryan Era
- 4.3 Socio-Cultural Development
- 4.4 Foundation of Civilization

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Unit 5: Mughal Rule in India and the Effects of Islam on Hindu Society

- 5.1 Rule of Babar and Humayun
- 5.2 Rule of Jahangir and Shah Jahan
- 5.3 Rule of Aurangzeb Alamgir
- 5.4 Political Effects
- 5.5 Social Effects
- 5.6 Economic Effects
- 5.7 Religious Effects

Unit 6: Pedagogy of History and Geography

- 6.1 Teaching History and Geography
- 6.2 Use of A.V. Aids in Teaching History (e.g., Time Line)
- 6.3 Use of A.V. Aids in Teaching Geography (e.g., Google Earth, Maps, Earth Globe)
- 6.4 Planning Lessons in History and Geography

Unit 7: Methods of Teaching History and Geography I

- 7.1 Expository Method
- 7.2 Laboratory or Practical Method
- 7.3 Demonstration Method
- 7.4 Discussion Method

Unit 8: Methods of Teaching History and Geography II

- 8.1 Problem Solving Method
- 8.2 Project Method
- 8.3 Discovery and Inquiry Method
- 8.4 Activity-Based Teaching

Recommended Texts

1. Punjab Text Book Board (2018). *Curriculum for Geography grades vi -viii*. Lahore: Punjab Text Book Board.
2. Mass, P. (2015). *History for Pakistan* (book, I,II and III). Oxford: OUP.
3. Aggarwal, J. C. (2008). *Teaching of social studies: A practical approach* (4th ed.). Vikas Publishing House.
4. Martorella, P. H. (2013). *Teaching social studies in middle and secondary schools* (4th ed.). Pearson Education.
5. Parker, W. C. (2017). *Social studies in elementary education* (15th ed.). Pearson.
6. Banks, J. A. (2019). *Teaching strategies for the social studies: Inquiry, valuing, and decision-making* (10th ed.). Pearson.


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 University of Sargodha

Suggested Readings

1. Sit, V. (2016). *Integrated geography: Book -1, 2 and 3. (2nd Ed.)* Hong Kong: Longman. Hong Kong Education.
2. Smith, M. (Ed.). (2015). *Teaching of geography in secondary schools*. London: The Open University Press.
3. San, W.S., et al (2016). *Understanding geography. (Book 1 &2)*. Singapore: Kogan Page
4. S.K. Kochar. (2011). *Teaching of social studies*. Sterling Publishers.
5. NCERT. (2006). *Position paper: National focus group on teaching of social sciences*. NCERT.
6. Ereksn, K. A. (Ed.). (2011). *Politics and the history curriculum: The struggle over standards in Texas and the nation*. Palgrave Macmillan.
7. Passe, J., & Fitchett, P. G. (2013). *Perspectives on gender in social studies*. Information Age Publishing.

Web Resources

1. National Council for the Social Studies. (n.d.). *Resources and publications for social studies educators*. Retrieved from <https://www.socialstudies.org>
2. NCERT. (n.d.). *Social science textbooks and resources*. Retrieved from <https://ncert.nic.in>
3. Smithsonian Education. (n.d.). *Lesson plans and resources for social studies*. Retrieved from <https://www.si.edu/education>
4. PBS LearningMedia. (n.d.). *Social studies classroom resources*. Retrieved from <https://www.pbslearningmedia.org/subjects/social-studies>
5. Stanford History Education Group. (n.d.). *Reading like a historian: Document-based lesson plans*. Retrieved from <https://sheg.stanford.edu>
6. Teaching Tolerance (now Learning for Justice). (n.d.). *Diversity, justice, and civics education*. Retrieved from <https://www.learningforjustice.org>
7. Library of Congress. (n.d.). *Primary sources and teaching tools*. Retrieved from <https://www.loc.gov/teachers/>
8. GeoBee Study Corner. (n.d.). *Geography and civics games and quizzes*. Retrieved from <https://www.nationalgeographic.org/education/resource-library/>
9. Discovery Education. (n.d.). *Social studies digital content and activities*. Retrieved from <https://www.discoveryeducation.com>
10. CrashCourse. (n.d.). *YouTube educational series on history, politics, and economics*. Retrieved from <https://www.youtube.com/user/crashcourse>

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Course Description

Prospective teachers will become familiar with Pakistan's National Mathematics Curriculum and expected student learning outcomes. Prospective teachers will learn to use a variety of instructional methods that promote active learning of math, including making and using teaching and learning materials. They will plan mathematics lessons and activities, and engage in practice teaching of math. This course will equip prospective teachers with knowledge and skills to teach math to grades I through VIII. They will become familiar with the math curriculum and expected student learning outcomes. Prospective teachers will learn to use a variety of instructional methods that promote active learning of math, including making and using teaching and learning materials. They will plan math lessons and activities and practice teaching math with peers. Prospective teachers will learn to use a variety of instructional methods that promote active learning of math, including making and using teaching and learning materials like AV-aids. They will also understand the concept and need of Mathematics Laboratory and its essentials and use in teaching of mathematics.

Course Objectives

Students will be able to:

1. Deepen their understanding of key mathematical concepts in Pakistan's 1-8 National Mathematics Curriculum.
2. Identify and assess areas of youngsters' understanding and misconceptions to inform their teaching practices.
3. Acquire the pedagogical skills and competencies required to teach Pakistan's 1-8 National Mathematics Curriculum.
4. Describe the nature, history, and development of grade 1-8 mathematics education both in Pakistan and internationally.

Course Structure

Each three-session week will focus on three aspects of Math education: Mathematical Content, Learning the Math Content, and Teaching the Math Content. These will be combined to form an integrated instructional model that addresses the above learning outcomes.

Mathematics Content: The first session of the week will begin working on at least one math problem. Prospective teachers will engage in solving and discussing the problem and sharing approaches and solutions. The content will be developed so that prospective teachers will engage in mathematics *in depth* to help them connect concepts within and across the four units of the National Curriculum: Number & Operations, Algebra & Algebraic Thinking, Geometry & Geometric Measurement, and Information Handling.

Learning & Pedagogy: The week will continue with an emphasis on children's learning and teachers' instructional practices. Class participants will continue to do mathematics in order to experience approaches to teaching and learning that they can use when they teach. They will recognize that there are often multiple ways of approaching a problem (and in some instances more than one correct answer). The instructor will present

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questions that stimulate curiosity and encourage prospective teachers to investigate further: by themselves, with their classmates, or in local schools.

The course will examine how children learn and develop mathematical understanding and skills and how the way children think should influence the teaching of mathematics in the primary, elementary, and middle grades.

Assignments: Students are expected to continue learning about math and the teaching of math after class. There will be assignments to stretch prospective teachers' content knowledge so that they learn more about teaching math. Assignments will take many forms including independently solving math problems and school-based tasks.

In summary, the Teaching Mathematics is a comprehensive effort so that pre-service teachers will:

1. Build and deepen their math content knowledge
2. Study ways in which young students learn mathematics
3. Learn about and use high-quality instructional practice

Course Outline

Week #	Mathematics Content	Learning the Math	Teacher Decision Making: Teaching the
Unit 1: Number Concepts and Operations			
1	<ul style="list-style-type: none"> • Prime & Composite Numbers • Factors & Multiples 	<ul style="list-style-type: none"> • Anticipated Student Misconceptions 	<ul style="list-style-type: none"> • Setting Goals for: <ul style="list-style-type: none"> ○ The Program ○ Teaching ○ Learning
2	<ul style="list-style-type: none"> • Division of Whole Numbers 	<ul style="list-style-type: none"> • Emergent Mathematical Thinking 	<ul style="list-style-type: none"> • Lesson Design Model <ul style="list-style-type: none"> ○ Launch ○ Explore ○ Summarize
2	<ul style="list-style-type: none"> • Greatest Common Factor • Least Common Multiple • Prime Factorization 	<ul style="list-style-type: none"> • The Value of Student Errors 	<ul style="list-style-type: none"> • Using Questioning Techniques, Wait Time, Probes, and Prompts to Foster Student Thinking
Unit 2: Fractions and Rational Numbers			
3	<ul style="list-style-type: none"> • Operations with Fractions (1) 	<ul style="list-style-type: none"> • Learning Mathematics with Manipulatives & Visual Aids 	<ul style="list-style-type: none"> • Using Application Problems to Develop Algorithms
3	<ul style="list-style-type: none"> • Operations with Fractions (2) 	<ul style="list-style-type: none"> • Mathematical Problem Solving Strategies 	<ul style="list-style-type: none"> • Physical Set-up of a Student-Centered Classroom

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4	Fractions- Decimals- Percent	<ul style="list-style-type: none"> Mathematical Discourse: Learning by Talking 	<ul style="list-style-type: none"> Designing & Managing Cooperative Group Work
4	Pie Charts	<ul style="list-style-type: none"> Seeing Connections between Units of the National Curriculum 	<ul style="list-style-type: none"> Timing of Lessons, Pacing of Units
Unit 3: Data Representation and Interpretation			
5	Pie Charts Estimation with Large Numbers	Seeing connections across curriculum units	Learning mathematics using technology
5	Data Interpretation	Managing timing and pacing	Differentiating assessments for diverse learners
Unit 4: Proportional and Algebraic Thinking			
6	Geometric Ratios	<ul style="list-style-type: none"> Cognitive Demand of Mathematical Tasks 	<ul style="list-style-type: none"> Selecting Worthwhile Mathematical Tasks
7	Rates & Linear Functions	<ul style="list-style-type: none"> The Balance Between Concepts & Skills, The Role of Drill & Practice 	<ul style="list-style-type: none"> Bloom's Taxonomy of Learning applied to Mathematics
8	Systems of Linear Equations	<ul style="list-style-type: none"> Multiple Representations for a Single Mathematical Idea 	<ul style="list-style-type: none"> Comparing Models of Teaching <ul style="list-style-type: none"> Deductive-Analytic Inductive-Synthetic
Unit 5: Geometry and Spatial Sense			
9	Symmetry	<ul style="list-style-type: none"> Mathematical Learning Styles and Modalities, Mathematics & 	<ul style="list-style-type: none"> Comparing Models of Teaching <ul style="list-style-type: none"> Heuristic
10		Multiple Intelligence Theory	<ul style="list-style-type: none"> Interactive Hands-on

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11	Volume & Surface Area	• Learning Mathematics by Writing	• Comparing Models of Teaching <ul style="list-style-type: none"> ◦ Problem-based Learning ◦ Project-based
12	Measurement & Precision	• Precision in Mathematical Vocabulary and Syntax	• Differentiating Assignments
Unit 6: Data Handling and Mathematical Communication			
13	Data: Estimation & Large Numbers	• Learning Mathematics with Available Technology	• Differentiating Assessments
14	Organizing and Interpreting Data Communicating mathematical ideas	Mathematical writing and vocabulary	Designing assessments that reflect understanding
Unit 7: Seminal in Mathematics			
15	<ul style="list-style-type: none"> • Introduction and/or Review of Seminal Thinkers in Mathematics & Mathematics Education • Contributions to mathematical pedagogy • Understanding historical context and evolution of teaching practices • Connecting theory with modern classroom applications 		
Unit 8: Islamic Thinkers and Contributions to Mathematics			
16	<ul style="list-style-type: none"> • Introduction and/or Review of Seminal Islamic Thinkers in Mathematics & Mathematics Education • Islamic contributions to global knowledge • Integrating cultural and historical appreciation in mathematics instruction 		

Recommended Texts

1. Basserear, T. (2017). *Mathematics for elementary school teachers*. Belmont, CA: Brooks/Cole
2. Charles, R. I., & Lester, F. K. (2005). *Teaching mathematics in middle school*. Pearson Education.
3. Van de Walle, J. A., Karp, K. S., & Bay-Williams, J. M. (2019). *Elementary and middle school mathematics: Teaching developmentally* (10th ed.). Pearson.
4. Van de Walle, J. A., Karp, K. S., & Bay-Williams, J. M. (2019). *Elementary and middle school mathematics: Teaching developmentally* (10th ed.). Pearson.
5. Skemp, R. R. (2006). *The psychology of learning mathematics*. Psychology Press.
6. Haylock, D., & Cockburn, A. D. (2017). *Understanding mathematics for young children: A guide for foundation stage and lower primary teachers* (5th ed.). SAGE Publications.

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- Boaler, J. (2016). *Mathematical mindsets: Unleashing students' potential through creative math, inspiring messages and innovative teaching*. Jossey-Bass.

Suggested Readings

- Haylock, D. (2016). *Mathematics explained for primary teachers*, 4th ed. Thousand Oaks, CA: SAGE Publications.
- Thong, H.S. and Hong, K.N. (2015). *New additional mathematics (for O' level)*. Karachi: paramount publishing Enterprise.
- Bennett-Jr., A.B. and Nelson. L.T. (2014). *Mathematics for elementary teachers: A conceptual approach. (6th Ed.)*. Boston: McGraw-Hill.
- Burns, M. (2007). *About teaching mathematics: A K-8 resource* (3rd ed.). Math Solutions Publications.
- Boaler, J. (2015). *Mathematical mindsets: Unleashing students' potential through creative math, inspiring messages and innovative teaching*. Jossey-Bass.
- Reys, R. E., Lindquist, M. M., Lambdin, D. V., & Smith, N. L. (2008). *Helping children learn mathematics* (9th ed.). Wiley.
- Posamentier, A. S., & Smith, B. S. (2020). *Teaching secondary mathematics: Techniques and enrichment units* (9th ed.). Pearson.

🌐 Web Resources

- National Council of Teachers of Mathematics (NCTM). (n.d.). <https://www.nctm.org/>
A leading source of resources, standards, and professional development for math educators.
- Khan Academy. (n.d.). <https://www.khanacademy.org/math>
Free, standards-aligned lessons in mathematics for all levels, from basic arithmetic to advanced topics.
- NRICH Mathematics Project. (n.d.). University of Cambridge. <https://nrich.maths.org/>
Enriching math learning with puzzles, games, and deep conceptual problems.
- Inside Mathematics. (n.d.). <https://www.insidemathematics.org/>
Classroom videos, tasks, and tools for improving math instruction.
- Open Educational Resources (OER Commons). (n.d.). <https://www.oercommons.org/>
Search for open and free math teaching resources, lesson plans, and textbooks.
- Math is Fun. (n.d.). <https://www.mathsisfun.com/>
A student-friendly site offering clear explanations and interactive exercises.
- Illustrative Mathematics. (n.d.). <https://www.illustrativemathematics.org/>
Research-based curriculum and classroom activities for K-12.
- TeacherTube – Math. (n.d.). <https://www.teachertube.com/categories/math>
Video content focused on math instruction.

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EDUC-6205

Teaching of Art, Crafts and Calligraphy

3(3-0)

Course Description

The Art, Crafts, and Calligraphy course will help prepare Student Teachers to teach these subjects in the elementary grades. It provides Student Teachers with an opportunity to develop their knowledge and understanding of art, crafts, and calligraphy (with a focus on Pakistani artists, calligraphers, and craftsmen and women) and to practice making their own works using a variety of techniques. Given that this is a teacher education course, Student Teachers also examine the role of art in child development; the importance of art, craft, and calligraphy in the curriculum; and the links between art, crafts, and calligraphy and other subjects such as science, math, and social studies. Student Teachers will have learned about lesson planning, classroom assessment, and classroom management in other courses; in this course they will focus on these three skills as they apply to teaching and learning art, crafts, and calligraphy in the elementary grades. This course will develop and broaden critical and creative thinking skills, understanding of and appreciation for the visual arts and culture and increase participant's proficiency in visual art techniques and processes. Participants will get an opportunity to explore various visual art forms and techniques in this course through the elements and principles of art and design.

Course Objectives

By the end of the semester participants will be able to:

1. Explain the importance of art education and its role in child development, especially for nurturing creativity, enhancing aesthetic sense, and stretching imagination.
2. Use tools and materials in art more skillfully.
3. Use an art journal to document their own artistic ideas and thoughts for refining their teaching as an art teacher.
4. Recognize and appreciate artists, art styles, and artwork.
5. Reflect and participate in art critiques as both a critic and an artist.
6. Initiate independent projects that allow personal interpretation and self-expression.
7. Identify links between art and other school subjects.

LEARNING AND TEACHING APPROACHES

Participants will engage in instructional activities using a greater variety of materials. The course will employ a combination of materials and teaching approaches to provide participants with meaningful opportunities to explore their abilities in expressing forceful and impactful ideas through various media on two-dimensional surfaces. Drawing upon their previous experiences, participants will be encouraged to use sketchbooks regularly to note information, develop concepts, and experiment with visual ideas. They will be guided to explore a wide range of media for illustrating concepts in art history lessons. For example, a teacher might develop a timeline mural or use low-cost materials to recreate cave art, enabling learners to experience art through hands-on experimentation.

In addition, participants will develop skills in note-making and observation while viewing reproductions of artwork by renowned artists and designers. Teachers will assign regular homework tasks that encourage personal research, fostering independent learning and

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creative inquiry. To enrich the learning experience, a variety of instructional strategies will be employed, such as museum visits, report writing, glossary building, research projects, and the use of handouts. These approaches aim to support critical engagement, historical understanding, and technical skill development in art education.

EXAMPLE ASSIGNMENTS

These are examples of the types of assignments you might be given. Your instructor will tell you more about course assignments.

1. Visit an art gallery or museum. Ask students to select three pieces of work. If possible, they should photograph the work and then write about why they like the piece.
2. Work with a group of children in elementary grades to make simple puppets. Help them prepare and stage a short puppet show.
3. Prepare a variety of objects for use in an elementary grade classroom using junk or recyclable materials. Explain how they might be used.
4. Plan an art activity for children in elementary grades. Try out the activity at school and ask one of your peers to observe and give feedback at the end of the lesson. Write a reflection about your experience teaching the lesson – including observations from your peers.
5. As part of learning about a particular school of painting, prepare an artwork ‘in the style of’ that school.
6. Interview a local artisan (e.g., a weaver, a potter, a wood carver) to find out more about their work. Prepare a video, a photo display, or poster about their work, with a commentary.

COURSE GRADING POLICY

Multiple variety of assessment will be used in the course. By using multiple forms of assessment, the instructor will have many windows on the knowledge, skills and dispositions of prospective teachers. The total grade determined by examinations will not exceed 20% of the course grade. Prospective teachers are expected to be present in class, engage with activities and discussion and complete course assignments. The course instructor will tell you how the course will be graded and which assignments will be graded.

Course Outline

Unit 1: Introduction to Arts, Crafts and Calligraphy (2 Weeks)

- 1.1 What are Arts, Crafts and Calligraphy?
- 1.2 The role of the teacher in teaching art
- 1.3 Influence of the arts in children’s development
- 1.4 Calligraphy – The emergence of Islamic calligraphy
- 1.5 Ceramics and Sculpture
- 1.6 Puppetry in Pakistan

Unit 2: History and Culture (2 Weeks)

- 2.1 Indus Civilizations
- 2.2 Exploration of history through a museum visit
- 2.3 Art and Architecture (From Indus to Mughal)

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- 2.4 Islamic Art and Calligraphy (origin from Persian artists and their calligraphy)
- 2.5 Pakistani Calligraphers: Anwar Jalal Shemza, Rasheed Butt, Hanif Ramay, Zahoor-ul-Akhlaq, Arshad, Sadequain, Shakir Ali, Gulgee, Aslam Kamal

Unit 3: Modern Art Movements and Indigenous Art (4 Weeks)

- 3.1 Introduction to Cubism
- 3.2 Pakistani artists in Cubism and Realism (e.g., Shakir Ali, Mansoor Rahi)
- 3.3 Introduction to Realism
- 3.4 Pakistani artists in Realism (Ali Imam, M. Husain, Hanjra, Khalid Iqbal, Anna Molka)
- 3.5 Hands-on activities related to Realism
- 3.6 Introduction to Abstraction
- 3.7 Origin and history of Abstract Art
- 3.8 Pakistani artists in Abstract Art (Ahmed Pervaiz, Lubna Latif, Maqsood Ali, Anwar Maqsood, Hameed Ali)
- 3.9 Indigenous Art: Pottery, ceramics, textile, etc.
- 3.10 Hands-on activities related to Indigenous Art

Unit 4: Art Integration Across Curriculum (1 Week)

- 4.1 Integrating art with languages, science, social studies, and mathematics
- 4.2 Using illustrations, drawings, and craft work for conceptual understanding
- 4.3 Hands-on activities and conclusion

Unit 5: Elements of Art and Principles of Design (2 Weeks)

- 5.1 Elements of Art: line, shape, color, texture, space, and volume
- 5.2 Importance and kinds of lines
- 5.3 Use of color: color wheels, tints, tones, shades
- 5.4 Use of space and value in 2D and 3D art
- 5.5 Texture: natural and man-made
- 5.6 Principles of Design: unity, variety, balance, contrast, emphasis, pattern, proportion

Unit 6: Artistic Techniques and Practice (1 Week)

- 6.1 Drawing techniques and rendering
- 6.2 Still life drawing
- 6.3 Painting and landscape work

Unit 7: Pedagogical Approaches for Teaching Art and Calligraphy (2 Weeks)

- 7.1 Constructivist Approach: learning by doing, studio-based projects
- 7.2 Visual Thinking Strategies (VTS): art appreciation and interpretation
- 7.3 Demonstration and Modeling: foundational calligraphy and painting skills
- 7.4 Project-Based Learning (PBL): integrating art with social/environmental themes
- 7.5 Collaborative Learning: fostering diverse expression
- 7.6 Differentiated Instruction for inclusive settings
- 7.7 Reflective Practice and Critique

Unit 8: Assessment and Curriculum Design in Art Education (2 Weeks)

- 8.1 Assessing creativity: purpose and importance
- 8.2 Assessment techniques: portfolios, rubrics, peer review
- 8.3 Planning and managing classroom art activities
- 8.4 Criteria for presentation, display, and self/peer assessment
- 8.5 Teaching strategies for art and craft lessons

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8.6 Art integration with other subjects

8.7 Developing art lesson plans

Recommended Texts

1. Razzak, A. (2018). *Children and Art- Status of art education in Pakistan*. Germany: VDM.
2. Hurwitz, A., & Day, M. (2012). *Children and their art: Art education for elementary and middle schools* (9th ed.). Cengage Learning.
3. Edwards, B. (2012). *The new drawing on the right side of the brain*. TarcherPerigee.
4. Read, H. (2021). *Education through art*. Routledge. (Original work published 1943)
5. Ritchhart, R., Church, M., & Morrison, K. (2011). *Making thinking visible: How to promote engagement, understanding, and independence for all learners*. Jossey-Bass.
6. Gude, O. (2007). Principles of possibility: Considerations for a 21st-century art & culture curriculum. *Art Education*, 60(1), 6–17.

Suggested Readings

1. Craig Roland, C. (2016). *Young in art: A developmental look at child art*. Retrieved from www.artjunction.org
2. Menzer, M. (2015). *The arts in early childhood: social and emotional benefits of arts participation, national endowment for the arts*. Retrieved from <https://www.arts.gov/sites/default/files/arts-in-early-childhood-dec2015-rev.pdf>
3. Eisner, E. W. (2002). *The arts and the creation of mind*. Yale University Press.
4. Chapman, L. H. (2004). *Teaching art: A guide for teaching and learning in the visual arts*. Teachers College Press.
5. McNiff, S. (2004). *Art heals: How creativity cures the soul*. Shambhala Publications.
6. Smith, R. A. (2006). *Culture and the arts in education: Critical essays on shaping human experience*. Teachers College Press.

Web Resources

1. Getty Education. (n.d.). *Art education resources*. Retrieved from <https://www.getty.edu/education/>
2. National Art Education Association (NAEA). (n.d.). *Resources and research*. Retrieved from <https://www.arteducators.org/>
3. Smithsonian Institution. (n.d.). *Learning Lab*. Retrieved from <https://learninglab.si.edu/>
4. ArtsEdge. (n.d.). *Resources for teaching the arts*. Kennedy Center. Retrieved from <https://artsedge.kennedy-center.org/>
5. Tate Kids. (n.d.). *Explore and create*. Retrieved from <https://www.tate.org.uk/kids>
6. Google Arts & Culture. (n.d.). *Explore art collections and stories*. Retrieved from <https://artsandculture.google.com/>
7. MoMA Learning. (n.d.). *Modern art and teaching resources*. The Museum of Modern Art. Retrieved from <https://www.moma.org/learn/moma-learning/>
8. Artsonia. (n.d.). *Student art gallery and resources for educators*. Retrieved from <https://www.artsonia.com/>
9. International Society for Education Through Art (InSEA). (n.d.). *Research and publications*. Retrieved from <https://www.insea.org/>

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Course Description

In this course emphasis is put on methods of teaching and lines of approach to the subject matter, rather than on the content of a syllabus. It is hoped that, by the use of good methods, the teacher will be able to lead his pupils towards an appreciation of scientific methods and all understanding of Science. The study of General Science in Primary and Secondary school is linked to National prosperity and economic development. The course is designed for the effective interactive ways of teaching science. The course will highlight the power of observation and inquisitiveness in general sciences studies. It will also focus on how to relate facts, concepts, and theories to every day experience to develop highly knowledgeable, highly skilled teachers do make a difference in terms of student learning using low cost and no cost and traditional audio visual as well as ICT in teaching learning process.

Course Objectives

The course will enable learners to:

1. Describe scientific concepts
2. Differentiate between scientific products and scientific processes
3. Explain the underlying principle of science education
4. Apply appropriate methods and techniques for effective learning and teaching in Science

Course Outline

Unit 1: Nature, Aims, and Objectives of Teaching Science

- 1.1 Definition of science, nature of science
- 1.2 Scope and characteristics
- 1.3 Aims and objectives of teaching science
 - 1.3.1 Bloom's taxonomy
 - 1.3.2 Taxonomy and classification of objectives
 - 1.3.3 Writing objectives in behavioural terms
 - 1.3.4 Objectives in science education at various levels

Unit 2: Unit and Lesson Planning

- 2.1 Instructional Course Objectives
 - 2.1.1 General Instructional Objectives (GIOs) and Specific Instructional Objectives (SIOs)
- 2.2 Functions of SIOs, Criteria for writing SIOs
- 2.3 Unit plan
 - 2.3.1 Steps involved in unit plan
 - 2.3.2 Lesson plan
 - 2.3.3 Criteria for good lesson plan
 - 2.3.4 Steps of lesson plan
 - 2.3.5 Model lesson plan

Unit 3: Methods of Teaching General Science – I

- 3.1 Demonstration cum-lecture method
- 3.2 Discovery method
- 3.3 Project method
- 3.4 Problem solving
- 3.5 Heuristic method
- 3.6 Laboratory method

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- 3.7 Inquiry method
- 3.8 Assignment method
- 3.9 Activity method

Unit 4: Methods of Teaching General Science – II

- 4.1 Scientific method
- 4.2 Panel discussion
- 4.3 Seminar
- 4.4 Symposium
- 4.5 Workshop
- 4.6 Team teaching
- 4.7 Personalized system of instruction
- 4.8 Computer Assisted Instruction (CAI)
- 4.9 Mobile Assisted Instruction (MAI)

Unit 5: Microteaching

- 5.1 Meaning and definition
- 5.2 Characteristics
- 5.3 Cycle of microteaching
- 5.4 Steps of microteaching
- 5.5 Practice of relevant skills
- 5.6 Reinforcement
- 5.7 Need for link lesson in microteaching

Unit 6: Science Teacher and Laboratory – I

- 6.1 What are audio-visual aids
- 6.2 Psychology of using A.V aids
- 6.3 Types of A.V aids
- 6.4 Essential qualities for using A.V aids
- 6.5 Principles of using teaching aids
- 6.6 Using low-cost teaching aids

Unit 7: Technology and Science Teaching

- 7.1 YouTube and blogs
- 7.2 T.V, LCD projection and multimedia
- 7.3 Educational broadcast
- 7.4 ICT and e-resources in classroom
- 7.5 Role of internet

Unit 8: Science Teacher and Laboratory – II

- 8.1 Science teacher
 - 8.1.1 Academic and professional qualifications
 - 8.1.2 Need of in-service education
- 8.2 Location and types of science laboratories
- 8.3 Apparatus and equipment
- 8.4 Improvised apparatus
- 8.5 Laboratory manual and instructions
- 8.6 Mishaps and remedies

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Unit 9: Assessment and Evaluation in Science Teaching

- 10.1 Designing a test
- 10.2 Achievement test in science
- 10.3 Subjective and objective tests
- 10.4 Administering and scoring a test
- 10.5 Interpreting test results

Recommended Text

1. Terry Jennings (2019). *Oxford Secondary Science Teaching Guide 1* Oxford University Press
2. Shahid, P., & et al. (2015). *Teaching of General Science* (16th ed.). Allama Iqbal Open Univesrity, Islamabad.
3. Bybee, R. W. (2013). *The case for STEM education: Challenges and opportunities*. NSTA Press.
4. Chiappetta, E. L., & Koballa, T. R. (2014). *Science instruction in the middle and secondary schools: Developing fundamental knowledge and skills* (8th ed.). Pearson.
5. Harlen, W. (2010). *Teaching, learning and assessing science 5–12* (4th ed.). SAGE Publications.
6. Lederman, N. G., & Abell, S. K. (Eds.). (2014). *Handbook of research on science education* (Vol. 2). Routledge.

Suggested Readings

1. DeBoer, G. (2019). *A history of Ideas in Science Education*. Teachers College Press.
2. Pearl, J., & Mackenzie, D. (2018). *The book of why: the new science of cause and effect*. Basic Books.
3. Punjab Text Book Board (2019). *General Science IX & X*. Punjab textbook Board, Punjab Pakistan.
4. Muthukumar, V. (2015). *Teaching of Science*. Bharathidasan University, Tiruchirappalli. Retrieved from <https://www.pdfdrive.com/>
5. Carin, A. A., Bass, J. E., & Contant, T. L. (2005). *Teaching science as inquiry* (10th ed.). Pearson.
6. Martin, R., Sexton, C., Franklin, T., & Gerlovich, J. (2009). *Teaching science for all children: An inquiry approach* (5th ed.). Pearson.
7. Wynne Harlen. (2006). *The teaching of science in primary schools* (4th ed.). David Fulton Publishers.
8. Osborne, J., & Dillon, J. (2008). *Science education in Europe: Critical reflections*. The Nuffield Foundation

Web Resources

1. National Science Teachers Association (NSTA). (n.d.). *Resources for science educators*. <https://www.nsta.org/>
2. NASA. (n.d.). *STEM engagement and teaching resources*. <https://www.nasa.gov/stem>
3. TeachEngineering. (n.d.). *Engineering curriculum for K–12 educators*. <https://www.teachengineering.org/>
4. Science Buddies. (n.d.). *Free science projects, lesson plans, and more*. <https://www.sciencebuddies.org/>

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5. National Geographic Education. (n.d.). *Science and environmental education resources*.
<https://education.nationalgeographic.org/>
6. Khan Academy. (n.d.). *Science lessons for school students*.
<https://www.khanacademy.org/science>
7. BBC Bitesize. (n.d.). *Science resources for students and teachers*.
<https://www.bbc.co.uk/bitesize/subjects/z2pfb9q>

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List of Interdisciplinary Courses

(The student has to choose 04 courses within below mentioned Interdisciplinary courses offered by HEI. HEIs are at liberty to add more courses to the list)

1. Economics of Education
2. Education in Pakistan
3. Sociology of Education
4. Comparative Education
5. Guidance and Counselling in School
6. Human Growth and Development

Hamid

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Course Description

Economics plays a key role in our daily life, society and the country. Economics and financing of education is a very important part of the educational system. Recently various new trends have emerged in the field of financing in education at various levels. Unfortunately our all financing of education so far has been in the hands of experts of economics and financing who were not experts in the educational matters. So there is a dire need of experts in educational economics and financing. Furthermore, our educational administrators (from headmasters to EDO Edu.) do not have any professional education and training in economics and financing of education. This course is intended to provide the foundation for this purpose. The basic aim is to introduce the students with the concepts, theories and principles of economics and financing and their application in our educational setup.

Course Objectives

The general objectives of the course are to enable the prospective teachers and teacher educators to:

1. Explain the relationship between economics and education
2. Review and evaluate the demand and supply of education both at individual and social level
3. Explain the social and private returns of the education
4. Describe and evaluate manpower planning in Pakistan and compare it with that of the advance countries
5. Analyze various educational costs like cost benefit, cost effectiveness etc.
6. Calculate and report the costing of educational projects
7. Explain and evaluate the process of financing and budgeting in Pakistan
8. Describe the role of vocational and technical education in the economic growth of a country and compare it with that of academic one

Course Outline**Unit 1: An Introduction to the Economics of Education**

- 1.1 Basic concepts of economics
- 1.2 Four factors of production
- 1.3 Economics of education
- 1.4 The economic value of education
- 1.5 Investment mechanisms

Unit 2: Concepts and Assumptions in the Economics

- 2.1 Human capital theory
- 2.2 Major themes (efficiency, equity etc.)
- 2.3 Macroeconomics of education
- 2.4 Microeconomics of education
- 2.5 Education as a black box

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- 2.6 Opportunity cost
- 2.7 Rate of return on educational investment: Objections and implications
- 2.8 Cost-benefit and cost-effectiveness analysis
- 2.9 Demand and supply for education

Unit 3: Individual Demand for Education

- 3.1 Forecasting the demand for compulsory education
- 3.2 The demand for non-compulsory education
- 3.3 Cost-benefit analysis
- 3.4 Measuring the costs and benefits

Unit 4: The Social Rate of Return Approach

- 4.1 Social rate of return as a guide to policy making
- 4.2 Identifying and analyzing the costs and benefits
- 4.3 Results of social rate of return
- 4.4 Criticism of SROR as policy indicator

Unit 5: Manpower Planning

- 5.1 The manpower requirement approach
- 5.2 Methods of evaluation
- 5.3 Productivity change
- 5.4 Supply effects
- 5.5 Employers' opinion
- 5.6 International comparison

Unit 6: Educational Outputs

- 6.1 Educational outputs of school education
- 6.2 Outputs of higher education

Unit 7: Educational Costs

- 7.1 The meaning of costs (public and private costs, social costs)
- 7.2 Cost function interpretations
- 7.3 Cost-effectiveness analysis
- 7.4 Comparing public and private costs; social and individual costs

Unit 8: The Costing of Educational Projects

- 8.1 Techniques for costing educational projects
- 8.2 Costing projects in Pakistan
- 8.3 Future strategies for costing projects in Pakistan

Unit 9: Financing Education in Pakistan

- 9.1 Budgeting and financing
- 9.2 Who pays for education?
- 9.3 Who benefits from education?
- 9.4 Students' financing through loans
- 9.5 Alternative strategies for financing education in Pakistan

Recommended Texts

1. Saeed, K.A. (2016). *Economy of Pakistan*. Karachi: Oxford University Press.

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2. Bari, F. (2014). *Public financing of education in Pakistan: Analysis of federal and provincial education budgets*. Institute of Social and Policy Sciences (I-SAPS).
3. Siddiqui, S.A. (Compiler). (2013). *Trends and issues in education*. Islamabad: AIOU.
4. Psacharopoulos, G., & Patrinos, H. A. (2018). *Returns to investment in education: A decennial review of the global literature*. World Bank Policy Research Working Paper.
5. Johnes, G., & Johnes, J. (Eds.). (2004). *International handbook on the economics of education*. Edward Elgar Publishing.
6. Levin, H. M., & McEwan, P. J. (2001). *Cost-effectiveness analysis: Methods and applications* (2nd ed.). Sage Publications.
7. Tilak, J. B. G. (2006). *Economics of inequality in education*. Sage Publications.
8. Iqbal, M., & Rauf, M. (2007). *Financing of education in Pakistan: An exploratory study*. Pakistan Institute of Development Economics (PIDE).

Suggested Readings

1. Nasir, M. S. and Hyder, S. K. (2015). *Economics of Pakistan for B.Com & B.A.* Lahore: Intiaz Book Depot.
2. Niazi, H.K. (2016). *Economics and Financing of Education*. Islamabad: AIOU.
3. Jamil, B. R. (2011). *Education reform in Pakistan: Building for the future*. The Brookings Institution. Beckford, J. (2011). *Quality: A critical introduction*. London: Routledge.
4. Woodhall, M. (2004). *Education for all: The role of economic growth*. UNESCO International Institute for Educational Planning.
5. Johnes, G., & Johnes, J. (Eds.). (2004). *International handbook on the economics of education*. Edward Elgar Publishing.
6. Belfield, C. R., & Levin, H. M. (Eds.). (2007). *The price we pay: Economic and social consequences of inadequate education*. Brookings Institution Press.

🌐 Web Resources

1. Pakistan Bureau of Statistics. (n.d.). *Education statistics*. <https://www.pbs.gov.pk>
2. World Bank. (n.d.). *Education overview*. <https://www.worldbank.org/en/topic/education>
3. UNESCO Institute for Statistics. (n.d.). *Education data*. <http://uis.unesco.org/>
4. OECD. (n.d.). *Education GPS: Statistics and indicators*. <https://gpseducation.oecd.org/>
5. Education Policy and Data Center. (n.d.). *Country profiles and indicators*. <https://www.epdc.org/>
6. Ministry of Federal Education and Professional Training. (n.d.). *Education sector reforms and budget*. <https://www.mofept.gov.pk>
7. Institute of Social and Policy Sciences (I-SAPS). (n.d.). *Public financing of education in Pakistan*. <https://i-saps.org>
8. UNESCO. (2017). *Education for sustainable development goals: Learning objectives*. <https://unesdoc.unesco.org/ark:/48223/pf0000247444>
9. International Monetary Fund. (n.d.). *Education investment*. <https://www.imf.org>

Maid
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EDUC-6208

Education in Pakistan

3(3-0)

Course Description

This course is designed to develop prospective teachers' awareness and understanding of education in Pakistan. Prospective teachers will develop their knowledge about different aspects of development of education keeping in view different aspects of development of education i.e. pre-primary education, elementary education, secondary education and higher education. In this process current policy and programs will also be studied with reference to formal, non-formal and informal modes of education. Teacher educator will ensure that different components of education like management, leadership etc. and major issues and challenges in education sector are also taken into consideration. The basic objectives of the course are to understand schooling structure at different levels in Pakistan, to decipher the nature and purpose of education in the pre and post-independence period and delineate the historic roots and subsequent development of pre service teacher education in Pakistan. Moreover this subject will develop awareness among prospective teachers about statistical facts regarding education in Pakistan.

Course Objectives

At the end of this course, the students will be able to

1. Describe schooling structure at different levels in Pakistan
2. Explain the nature and purpose of education in the pre and post-independence period
3. Describe the historic roots and subsequent development of pre-service teacher education in Pakistan
4. Evaluate education in Pakistan in the light of current educational policy
5. Critically analyze educational development at different levels of education i.e. pre-primary education, primary education, and secondary education.
6. Evaluate the issues and challenges in higher education.

Course Outline**Unit 1: Structure of Education**

- 1.1 Preschool education
- 1.2 Elementary education
- 1.3 Secondary education
- 1.4 Higher secondary education
- 1.5 Tertiary education
- 1.6 Religious education
- 1.7 Technical and vocational education

Unit 2: Administration of Education and Decentralization

- 2.1 Federal administrative structure of education
- 2.2 Provincial administrative structure of education
- 2.3 District administrative structure of education

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Unit 3: Management

- 3.1 Curriculum wing
- 3.2 Ministry of education
- 3.3 Provincial curriculum bureaus
- 3.4 Textbook boards
- 3.5 Staff development centers
- 3.6 Examinations (BISE, boards of technical education)
- 3.7 Schools management committees
- 3.8 Models of curriculum in Pakistan

Unit 4: Education in Pakistan: Pre and Post Independence

- 4.1 Pre-independence
- 4.2 Post-independence
- 4.3 National education policies

Unit 5: Policy Formulation in Pakistan

- 5.1 Major objectives and progress of education with reference to current national education policy

Unit 6: Technical and Vocational Education in Pakistan

- 6.1 Status
- 6.2 Key issues and challenges

Unit 7: Pre-Service Teacher Education in Pakistan

- 7.1 Policy perspectives from 1947 to recent
- 7.2 Teacher training institutions and programs
- 7.3 New trends in teacher education in Pakistan
- 7.4 Major issues and challenges

Unit 8: Statistical Overview of Education in Pakistan

- 8.1 Primary
- 8.2 Secondary
- 8.3 Tertiary
- 8.4 Gender parity
- 8.5 Quality and expenditures

Unit 9: Major Issues and Challenges

- 9.1 Globalization
- 9.2 Low enrollments and dropouts
- 9.3 Illiteracy
- 9.4 Female education
- 9.5 Physical conditions of educational institutions
- 9.6 Quality of education
- 9.7 Investment in education

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Recommended Texts

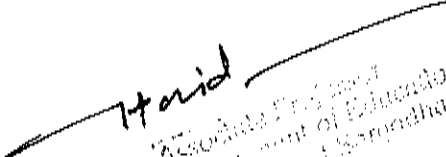
1. Bashiruddin, Y., Bana, Z., & Afridi, A. K. (2012). *Education in Pakistan*. Karachi: Oxford University Press
2. Siddiqui, S. (2016). *Rethinking Education in Pakistan Perceptions, Practices and Possibilities*. Lahore: Paramount Books (Pvt.) Ltd.
3. Government of Pakistan. (2009). *National education policy 2009*. Ministry of Education.
4. Siddiqui, S. (2007). *Rethinking education in Pakistan: Perceptions, practices, and possibilities*. Paramount Publishing Enterprise.
5. Iqbal, M. (2006). *Education in Pakistan: Developmental milestones*. Institute of Policy Studies.
6. Bari, F. (2010). *Education budget analysis: Public financing of education in Pakistan*. Institute of Social and Policy Sciences (I-SAPS).

Suggested Readings

1. Burki, S. J. (2018). *Pakistan: fifty years of nationhood*. London: Routledge.
2. Siddiqui, S. (2016). *Education policies in Pakistan: Politics, projections, and practices*. Karachi: Oxford University Press.
3. Shah, S. (2015). *Education, leadership, and Islam: Theories, discourses, and practices from an Islamic perspective*. London: Routledge.
4. Jamil, B. R. (2004). *Education reforms in Pakistan: Building for the future*. The Brookings Institution.
5. Nayyar, A. H., & Salim, A. (Eds.). (2003). *The subtle subversion: The state of curricula and textbooks in Pakistan*. Sustainable Development Policy Institute.
6. Rahman, T. (2005). *Denizens of alien worlds: A study of education, inequality and polarization in Pakistan*. Oxford University Press.
7. Malik, A. (2012). *Public-private partnerships in education: Lessons from Pakistan*. World Bank.
8. UNESCO. (2005). *Education policies in Pakistan: A comparative study of education in South Asia*. UNESCO Publishing.

🌐 Web Resources

1. Ministry of Federal Education and Professional Training. (n.d.). *Home*. <https://www.mofept.gov.pk>
2. Pakistan Bureau of Statistics. (n.d.). *Education statistics*. <https://www.pbs.gov.pk>
3. Pakistan Institute of Education. (n.d.). *Reports and publications*. <https://www.pie.gov.pk>
4. Institute of Social and Policy Sciences (I-SAPS). (n.d.). *Education governance and finance*. <https://i-saps.org>
5. UNESCO Pakistan. (n.d.). *Education*. <https://www.unesco.org/en/fieldoffice/islamabad>
6. UNICEF Pakistan. (n.d.). *Education*. <https://www.unicef.org/pakistan/education>
7. World Bank. (n.d.). *Pakistan education overview*. <https://www.worldbank.org/en/country/pakistan>
8. Sustainable Development Policy Institute. (n.d.). *Education policy research*. <https://www.sdpi.org>


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Course Description

The course offers general understanding of sociology and its' implications in education. The course develops insight into the social processes with in educational institutions, and how schools and educational institutions play their role in socialization of the learners and playing effective role in social development of the people in the society. Social and environmental changes through time in these educational institutions are therefore reviewed. This course will examine the relationships between education and society by reviewing a variety of theoretical perspectives of education. This course aims to introduce students learn and teachers how to teach, so that teachers are able to integrate the findings of psycho-sociological education in teaching and giving their various disciplines. Three main components are involved: students, learning, and teaching. Topics for students are developing theories and teaching students and teaching characteristics, personal differences. Topics learning theories are learning and promoting learning. Topics are teaching models and learning projects.

Course Objectives

After Completion of the course, the students will be expected to:

1. Explain the nature and scope of sociology and its relationship with education.
2. Explain the process of linkage among the school community and teacher for effective education
3. Identify and analyze the social factors affecting education and how it can support the development of education
4. Explain the role of teachers and school in socialization of students and development of society
5. Contribute in community work, health promotion activities and endorsement of healthy environment.

Course Outline

Unit 1: Introduction to Sociology of Education

- 1.1 Conceptual clarity
- 1.2 Relationship between society and education
- 1.3 Education and development
- 1.4 Relationship between socialization and education
- 1.5 Education as a process of social system and socialization
- 1.6 Agencies of socialization and education: Family, peer groups, school, and media

Unit 2: Education, Inequalities and Social Justice

- 2.1 Concept of equality of educational opportunity
- 2.2 Education and disparities: caste, class, tribe, gender, rural-urban
- 2.3 Education and social mobility
- 2.4 Role of education in social change
- 2.5 Education and digital divide
- 2.6 Challenges to educational equality

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Unit 3: Emerging Trends in Education in India

- 3.1 School education: existing scenario
- 3.2 Higher education in India
- 3.3 Governance of higher education
- 3.4 Institutional programmes
- 3.5 Education and different aspects of society:
 - Education and community
 - Education and culture
 - Education and politics
 - Education and values
 - Education in relation to secularism
- 3.6 National integration and international understanding

Unit 4: Society, Community, and Culture

- 4.1 Definition of society and community
- 4.2 Individual status and his/her role in society
- 4.3 Societal interaction
- 4.4 Cultural diversity
- 4.5 Cultural elements of Pakistani community
- 4.6 Role of education in strengthening Pakistan

Unit 5: Group and Group Dynamics

- 5.1 Meaning of a group
- 5.2 Group dynamics
- 5.3 Types of social groups
- 5.4 Individual behavior and group behavior
- 5.5 Role of school teacher in molding individual and group behavior

Unit 6: Socialization and Development

- 6.1 Meaning and aims of socialization
- 6.2 Agencies of socialization
- 6.3 Stages of social development
- 6.4 Role of school in socialization
- 6.5 Teachers as role models, participating in community and health activities

Unit 7: Social Institutions

- 7.1 Definition of social institutions
- 7.2 Types of social institutions
- 7.3 The family
- 7.4 Economic institutions
- 7.5 Religious institutions
- 7.6 Educational institutions
- 7.7 Play and recreational institutions

Unit 8: School and Community

- 8.1 Relationship between school and community
- 8.2 Effects of school on community
- 8.3 Effects of community on schools
- 8.4 Critical analysis of effective role of schools and teachers in Pakistani community

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8.5 Technological change and its impact on society

8.6 Technology and ethical values

Unit 9: Social Control

9.1 Definition of social control

9.2 Social deviation, peace, harmony, and tolerance

9.3 Methods of social control

9.4 Role of community, school, and teacher in peace development, harmony, and tolerance

Recommended Text

1. Ballantine, J. H., & Spade, J. Z. (2017). *Schools and society: A sociological approach to education* (6th ed.). SAGE Publications
2. Brint, S. (2017). *Schools and societies* (3rd ed.). Stanford University Press.
3. Alias, N. (2015). *Educational Sociology and Philosophy*. Malaysia: Open university of Malaysia.
4. Chandra, S. S & Sharma, R. K. (2014). *Sociology of Education*. India: Atlantic Publishers and Distributor New Delhi.
5. Banks, J. A. (2006). *Cultural diversity and education: Foundations, curriculum, and teaching* (5th ed.). Pearson
6. Ball, S. J. (2012). *The sociology of education: Major themes* (Vols. 1–4). Routledge

Suggested Readings:

1. Sharma, Y.K. (2018). *Foundations in Sociology of Education*. New Delhi, India: Kanishka Publishers
2. Chandra, S. S & Sharma, R. K. (2016). *Sociology of Education*. New Delhi, India: Atlantic Publishers and Distributor.
3. Hallinian, M.T. (2016). *Handbook of the Sociology of Education*. USA: Springer Distributors.
4. Haralambos, M., & Holborn, M. (2013). *Sociology: Themes and perspectives* (8th ed.). HarperCollins.
5. Apple, M. W. (2013). *Can education change society?* Routledge
6. Sadovnik, A. R. (2011). *Sociology of education: A critical reader* (2nd ed.). Routledge.
7. Young, M. (2008). *Bringing knowledge back in: From social constructivism to social realism in the sociology of education*. Routledge.

🌐 *Web Resources*

1. American Sociological Association (ASA). (n.d.). *Sociology of education section*. <https://www.asanet.org/sections/sociology-education>
2. UNESCO. (n.d.). *Education and social transformation*. <https://www.unesco.org>
3. OECD. (n.d.). *Education indicators*. <https://www.oecd.org/education>
4. World Bank. (n.d.). *Education and equity*. <https://www.worldbank.org/en/topic/education>

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5. Sociology Guide. (n.d.). *Sociology of education*. <https://www.sociologyguide.com/education/>
6. National Council of Educational Research and Training (NCERT). (n.d.). *Sociology textbooks and materials*. <https://ncert.nic.in>
7. International Sociological Association (ISA). (n.d.). *Research committee on sociology of education*. <https://www.isa-sociology.org>
8. Khan Academy. (n.d.). *Sociology: Education*. <https://www.khanacademy.org>
9. Stanford Encyclopedia of Philosophy. (n.d.). *Education and critical theory*. <https://plato.stanford.edu>
10. Comparative Education Review. (n.d.). *Journal homepage*. <https://www.journals.uchicago.edu/loi/ceer>

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Course Description

Education system in any country cannot be isolated from the education system of other countries. Keeping in view the requirement of equivalence in global world, it is important to compare the education system of Pakistan with other developing and developed countries. Comparative education is an educational science. Comparative Education is included as a professional course. The education system in a country cannot be isolated from the education systems of other countries. Keeping in view the requirement of equivalence in a global world, it is important to compare the education system of Pakistan with those of other developing and developed countries. Knowledge about the education systems of various countries assists policymakers in reflecting on education in the context of competition and excellence. This course provides a deep insight of different educational systems and enables students to make comparative critical analysis with special reference to Pakistan.

Course Objectives

After studying this course, the students will be able to:

1. Describe the concept and scope of comparative education.
2. Differentiate among approaches of comparative education..
3. Evaluate primary education in comparative perspective.
4. Analyse secondary education in comparative perspective.
5. Critically analyse higher education in comparative perspective
6. Discuss the status of teacher education in comparative perspective.

Course Outline

Unit 1: Comparative Education: Introduction

- 1.1. Concept and Scope of Comparative Education
- 1.2. Objectives of Comparative Education
- 1.3. Comparative vs International Education: An Analysis
- 1.4. Historical Development of Comparative Education
- 1.5. Trends and Issues in Comparative Education

Unit 2: Methods and Approaches in Comparative Education

- 2.1. Methods in Comparative Education
 - 2.1.1. Descriptive Method
 - 2.1.2. Analytical Method
 - 2.1.3. Historical Method
 - 2.1.4. Scientific/Quantitative Method
 - 2.1.5. Qualitative Method
- 2.2. Approaches in Comparative Education
 - 2.2.1. Historical Approach
 - 2.2.2. Sociological Approach
 - 2.2.3. Philosophical and Ideological Approach
 - 2.2.4. Scientific/Empirical Approach
 - 2.2.5. Problem-Solving / Policy-Oriented Approach

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- 2.2.6. Cross-Cultural Approach
- 2.2.7. International and Globalization Approach

Unit 3: Theoretical Foundations of Comparative Education

- 3.1. Functionalist Theory
- 3.2. Conflict Theory
- 3.3. Human Capital Theory
- 3.4. World-Systems Theory
- 3.5. Globalization Theory in Education
- 3.6. Open System Theory

Unit 4: Primary and Secondary Education in Comparative Perspectives

- 4.1. Primary and Secondary Education in USA
- 4.2. Primary and Secondary Education in UK
- 4.3. Primary and Secondary Education in India
- 4.4. Primary and Secondary Education in Pakistan
- 4.5. Primary and Secondary Education in Malaysia
- 4.6. Comparison between Eastern and Western Countries in Primary and Secondary Education

Unit 5: Higher Education in Comparative Perspectives

- 5.1. Concept and Scope of Higher Education
- 5.2. Bologna Process in Higher Education
- 5.3. University Education in Comparative Perspectives
 - 5.3.1. Higher Education in USA
 - 5.3.2. Higher Education in UK
 - 5.3.3. Higher Education in Pakistan
 - 5.3.4. Higher Education in India
- 5.4. Comparison between Eastern and Western Countries in Higher Education

Unit 6: Teacher Education

- 6.1. Concept and Scope of Teacher Education
- 6.2. Teacher Education in Comparative Perspective
 - 6.2.1. Teacher Education in USA
 - 6.2.2. Teacher Education in UK
 - 6.2.3. Teacher Education in Pakistan
 - 6.2.4. Teacher Education in India
- 6.3. Comparison between Eastern and Western Countries in Teacher Education

Unit 7: Special Education

- 7.1. Concept and Scope of Special Education
- 7.2. Special Education in Comparative Perspective
 - 7.2.1. Special Education in Pakistan
 - 7.2.2. Special Education in United Kingdom
 - 7.2.3. Special Education in India
 - 7.2.4. Special Education in Norway
- 7.3. Comparison between Eastern and Western Countries in Special Education

Unit 8: Curriculum Planning and Development in Comparative Perspectives

- 8.1. Concept and Scope of Curriculum Development

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- 8.2. Phases and Steps in Curriculum Development in Different Countries
- 8.3. Curriculum Development in Comparative Perspectives
 - 8.3.1. United States of America
 - 8.3.2. United Kingdom
 - 8.3.3. India
 - 8.3.4. Pakistan
- 8.4. Comparison between Eastern and Western Countries in Curriculum Planning and Development

Unit 9: Comparison: Distance Education System

- 9.1. Concept and Scope of Distance Education System
- 9.2. Distance Education System in Comparative Perspectives
 - 9.2.1. Canada
 - 9.2.2. United Kingdom
 - 9.2.3. Pakistan
 - 9.2.4. India
- 9.3. Comparison between Eastern and Western Countries in Distance Education Systems

Recommended Texts

1. Cottrell, S. (2017). *Critical thinking skills: Effective analysis, argument and reflection*, London: Macmillan International Higher Education.
2. Costa, A.I., & Lowery, L.F. (2014). *Techniques for teaching thinking*, Melbourne: Hawker Brownlow
3. Bray, M., Adamson, B., & Mason, M. (2014). *Comparative education research: Approaches and methods* (2nd ed.). Springer.
4. Phillips, D., & Schweisfurth, M. (2014). *Comparative and international education: An introduction to theory, method, and practice* (2nd ed.). Bloomsbury Academic.
5. Cowen, R. (2009). *The Routledge international companion to education*. Routledge.

Suggested Readings

1. Moon, J. (2007). *Critical thinking: An exploration of theory and practice*, USA: Routledge
2. McPeck, J. E. (2016). *Teaching critical thinking: Dialogue and dialectic*, USA: Routledge.
3. Kubow, P. K., & Fossum, P. R. (2007). *Comparative education: Exploring issues in international context* (2nd ed.). Pearson.
4. Watson, K. (2001). *Doing comparative education research: Issues and problems*. Symposium Books.
5. Bray, M. (2007). *Comparative education: Continuing traditions, new challenges, and new paradigms* (2nd ed.). Springer.

🌐 *Web Resources*

1. UNESCO. (n.d.). *Education systems worldwide*. <https://www.unesco.org>
2. OECD. (n.d.). *Education at a glance*. <https://www.oecd.org/education>
3. World Bank. (n.d.). *Education overview*. <https://www.worldbank.org/en/topic/education>

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4. IBF UNESCO. (n.d.). *World data on education*. <https://www.ibe.unesco.org/en/document/world-data-education>
5. Education International. (n.d.). *Global education resources*. <https://www.ei-ie.org>
6. Comparative Education Review. (n.d.). <https://www.journals.uchicago.edu/ceer>
7. Global Partnership for Education. (n.d.). <https://www.globalpartnership.org>
8. INEE (Inter-agency Network for Education in Emergencies). (n.d.). <https://inee.org>
9. International Association for the Evaluation of Educational Achievement (IEA). <https://www.iea.nl>
10. Education Policy and Data Center (EPDC). <https://www.epdc.org>

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Course Description

This course has been designed to introduce the concept, scope, and theories that govern the process of guidance and counselling in education. It will enable students to identify areas of guidance and counselling at the elementary level. Through the knowledge and skills acquired from this course, they will be well equipped to explore the talents and potential of their students, while preparing them for life in the 21st century. The course will include both theoretical knowledge of guidance and counselling and the development of students' counselling skills. It will strengthen their ability to exercise active listening skills, reflect on students' problems, and help them choose potential solutions to their problems. The course will also enable students to design school-wide guidance and counselling programs. This course demonstrates knowledge of the importance of guidance and counselling to teachers and students and critically analyses the concepts, scope, and theories that govern the process of guidance and counselling.

Course Objectives

On successful completion of this course, learners will be able to:

1. Demonstrate knowledge of the importance of guidance and counselling to support the teachers role in the classroom
2. Explain the role of various members of a guidance and counselling system in supporting learners in addressing their future choices and social challenges
3. Demonstrate the skills of student in making responsible social choices and decisions
4. Assist students in making informed choices to solve personal, educational and social problems they confront
5. Refer students to resources that can assist them in solving social and personal problems they encounter.

Course Outline

Unit 1: Introduction to Guidance and Counselling

- 1.1. Define and differentiate Guidance and Counselling
- 1.2. Objectives of Guidance
- 1.3. Principles of Guidance
- 1.4. Counselling team and their responsibilities

Unit 2: The Role of Guidance and Counselling Personnel

- 2.1. Teacher in guidance and counselling
- 2.2. Psychologist in student services
- 2.3. Administrator in guidance and counselling
- 2.4. Career Counsellor
- 2.5. Librarian / Incharge Student Affairs in guidance and counselling

Unit 3: Techniques of Guidance

- 3.1. Introduction to Guidance Techniques

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3.2 Importance of Using Appropriate Techniques in Educational Settings

3.3 Individual Guidance Technique vs. Group Guidance Technique

3.4 How the teacher can assist the learner to make informed choices to guide their future

3.5 Developing guidance skills: questioning techniques, active listening

Unit 4: Basic Skills of Counselling

4.1. Introduction to Counselling Skills

4.2 Importance of Basic Counselling Skills in Educational Settings

4.3. Core Counselling Skills

4.3.1. Attending and Active Listening

4.3.2. Questioning (Open and Closed)

4.3.3. Paraphrasing and Summarizing

4.3.4. Empathy and Unconditional Positive Regard

4.3.5. Giving Feedback

4.3.6. Clarification and Confrontation

4.5 Identifying social problems the classroom teacher can resolve

4.6. Exercising basic counselling skills in a controlled situation

4.7. Evaluating basic counselling techniques among peers

Unit 5: Services of Guidance

5.1. Orientation service

5.2. Testing service

5.3. Educational and occupational services

5.4. Counselling services

5.5. Placement services

5.6. Follow-up services

5.7. Research & evaluation services

Unit 6: Evaluation of the Guidance Program

6.1. Types of evaluation in guidance and counselling

6.2. Criteria for Effective Guidance Program Evaluation

6.3. Tools and Techniques for Evaluation

- Observation
- Questionnaires and Surveys
- Interviews
- Record Analysis
- Feedback Mechanisms

6.4 Role of Stakeholders in Evaluation (Teachers, Counselors, Administrators, Students)

6.5 Challenges in Evaluating Guidance Programs

Unit 7: Cumulative Record Card

7.1. Nature and purpose of the Cumulative Record

7.2. Types of Information Included in a Cumulative Record Card

7.3. Advantages of the CRC

7.4. Design of CRC

7.5 Role of Teachers and Counselors in Maintaining Records

7.6 Limitations and Ethical Considerations for the CRC

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Unit 8: New Trends in Counselling

- 8.1. Digital and Online Counseling Apps: Headspace, Calm, Moodpath
- 8.2. Integration of Artificial Intelligence (AI)
- 8.3. Neuroscience-Informed Counseling
- 8.4. Inclusive and Multicultural Counseling
- 8.5. Holistic and Wellness-Based Approaches
- 8.6. School-Based Mental Health and Career Counseling Expansion

Recommended Texts

1. Rao, V.K. & Reddy, R.S. (2017). *Academic Environment: Advice, Counsel and Activities*. New Delhi: Ashish Publishing
2. Gibson, R. L., & Mitchell, M. H. (2018). *Introduction to counseling and guidance* (7th ed.). Pearson.
3. Corey, G. (2017). *Theory and practice of counseling and psychotherapy* (10th ed.). Cengage Learning.
4. Gibson, R. L., & Mitchell, M. H. (2018). *Introduction to counseling and guidance* (7th ed.). Pearson.
5. Corey, G. (2017). *Theory and practice of counseling and psychotherapy* (10th ed.). Cengage Learning.
6. Gladding, S. T. (2018). *Counseling: A comprehensive profession* (8th ed.). Pearson.
7. Erford, B. T. (2023). *Orientation to the counseling profession: Advocacy, ethics, and essential professional foundations* (4th ed.). Pearson.

Suggested Readings

1. I. Capuzzi, D., & Stauffer, M. D. (2016). *Foundations of counseling and psychotherapy: Evidence-based practices for a diverse society*. Wiley.
2. Sink, C. A. (2005). *Contemporary school counseling: Theory, research, and practice*. Houghton Mifflin.
3. Bergin, A. E., & Garfield, S. L. (2013). *Handbook of psychotherapy and behavior change* (6th ed.). Wiley.
4. Gupta Sarla. (2015). *Career and Counselling Education*, Delhi: Hardy Publishers.
5. Sharma, V.K. (2015). *Administration and Training of Educational and Vocational Guidance*. New Delhi: Publications
6. Thompson, C. L., & Henderson, D. A. (2012). *Counseling children* (8th ed.). Cengage Learning.

🌐 Web Resources

1. American School Counselor Association (ASCA). (n.d.). *ASCA National Model*. <https://www.schoolcounselor.org>
(Standards and frameworks for school counseling programs)
2. UNESCO. (n.d.). *Guidance, counselling and youth development*. <https://unesdoc.unesco.org/ark:/48223/pf0000110745>
(Global guidelines on school counselling in developing countries)
3. National Career Development Association (NCDA). (n.d.). *Career counseling resources*. <https://www.ncda.org>
(Resources for integrating vocational guidance in schools)

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 Associate Professor
 Department of Education
 University of Jammu

4. National Association of School Psychologists (NASP). (n.d.). *Student support services*. <https://www.nasponline.org>
(Mental health and academic support strategies)
5. NCERT. (n.d.). *Guidance and counselling materials*. <https://ncert.nic.in>
(India's national resources on school guidance and counselling)
6. UNICEF. (n.d.). *Life skills and psychosocial support*. <https://www.unicef.org/lifeskills>
(Programmes for mental health and emotional development in schools)
7. Simply Psychology. (2023). *Person-centered counseling and other approaches*. <https://www.simplypsychology.org>
(Overview of counseling theories simplified for learners)
8. Edutopia. (n.d.). *Social and emotional learning (SEL)*. <https://www.edutopia.org/social-emotional-learning>
(Strategies for promoting well-being in classrooms)
9. Mind Tools. (n.d.). *Counseling skills and techniques*. <https://www.mindtools.com>
(Articles and tools for developing interpersonal and counselling skills)
10. WHO. (n.d.). *School mental health services*. <https://www.who.int/news-room/fact-sheets/detail/mental-health-in-schools>
(Global health perspective on school-based guidance and mental health)

Print

Assoc. Prof. Dr. J. S. S. S.
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University of Karnataka

Course Description

This course has been designed to introduce the concept, scope, and key theories related to human growth and development across the lifespan. It will enable students to understand the physical, cognitive, emotional, and social development of individuals from childhood through adulthood, with a focus on developmental stages relevant to education. Through the knowledge and skills acquired from this course, students will be better equipped to support the diverse developmental needs of learners in educational settings. The course includes both theoretical foundations and practical applications, helping students to observe, analyze, and respond to individual differences in growth and development. It will also strengthen their ability to foster age-appropriate learning environments and promote positive student outcomes. This course demonstrates knowledge of the significance of understanding human development for effective teaching and critically analyses major developmental theories and their implications for educational practice.

Course Objectives

On successful completion of this course, learners will be able to:

1. Describe the concepts and principles of human growth and development.
2. Explain major theories of development and their educational implications.
3. Identify the characteristics and needs of learners at different stages.
4. Apply knowledge of development in planning effective classroom instruction.
5. Analyze the role of family, school, and society in shaping development.

Course Outline**Unit 1: Introduction to Human Growth and Development**

- 1.1 Meaning, nature, and importance of growth and development
- 1.2 Differences between growth and development
- 1.3 Principles of human development
- 1.4 Factors influencing development (heredity and environment)

Unit 2: Developmental Stages and Characteristics

- 2.1 Prenatal stage and infancy
- 2.2 Childhood (early and late)
- 2.3 Adolescence
- 2.4 Adulthood
- 2.5 Educational implications of each stage

Unit 3: Theories of Human Development

- 3.1 Piaget's Cognitive Development Theory
- 3.2 Erikson's Psychosocial Theory
- 3.3 Kohlberg's Moral Development Theory
- 3.4 Vygotsky's Sociocultural Theory
- 3.5 Implications of theories in teaching and learning

Unit 4: Physical and Motor Development

- 4.1 Patterns and stages of physical development

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- 4.2 Motor skills: gross and fine
- 4.3 Role of physical development in learning
- 4.4 Gender differences and special needs consideration

Unit 5: Cognitive Development

- 5.1 Characteristics of cognitive development
- 5.2 Information processing and intelligence
- 5.3 Creativity and critical thinking
- 5.4 Role of teachers in enhancing cognitive skills

Unit 6: Emotional and Social Development

- 6.1 Emotional development and its impact on learning
- 6.2 Socialization process: family, peers, school
- 6.3 Development of self-concept and identity
- 6.4 Classroom strategies for emotional and social growth

Unit 7: Moral and Language Development

- 7.1 Stages of moral development (Piaget, Kohlberg)
- 7.2 Role of school in moral development
- 7.3 Stages of language development
- 7.4 Factors affecting language acquisition

Unit 8: Developmental Challenges and Diversity

- 8.1 Learning difficulties and developmental delays
- 8.2 Emotional and behavioral disorders
- 8.3 Socioeconomic, cultural, and gender diversity
- 8.4 Inclusive practices in the classroom

Recommended Texts

1. Berk, L. E. (2020). *Development through the lifespan* (7th ed.). Pearson.
2. Woolfolk, A. (2022). *Educational psychology* (14th ed.). Pearson.
3. Santrock, J. W. (2019). *Child development* (15th ed.). McGraw-Hill Education.
4. Mangal, S. K. (2016). *Advanced educational psychology* (2nd ed.). PHI Learning Pvt. Ltd.
5. Papalia, D. E., & Martorell, G. (2021). *Experience human development* (14th ed.). McGraw-Hill Education.

Suggested Readings

1. Siegler, R., Deloache, J., Eisenberg, N., & Saffran, J. (2020). *How children develop* (6th ed.). Worth Publishers.
2. Bee, H., & Boyd, D. (2019). *The developing child* (13th ed.). Pearson.
3. Shaffer, D. R., & Kipp, K. (2018). *Developmental psychology: Childhood and adolescence* (10th ed.). Cengage Learning.
4. Crain, W. (2015). *Theories of development: Concepts and applications* (6th ed.). Routledge.
5. Feldman, R. S. (2017). *Development across the life span* (8th ed.). Pearson.

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Assistant Professor
Department of Education
University of Jammu

🌐 *Web Resources*

1. American Psychological Association. (n.d.). *Lifespan development*. <https://www.apa.org/topics/lifespan-development>
(Overview of developmental psychology topics from infancy to old age)
2. McLeod, S. (2023). *Jean Piaget's theory of cognitive development*. Simply Psychology. <https://www.simplypsychology.org/piaget.html>
(Explains Piaget's stages in simple terms with visuals)
3. Child Development Institute. (n.d.). *Stages of child development*. <https://childdevelopmentinfo.com/child-development>
(Practical insights for parents and teachers on developmental milestones)
4. Centers for Disease Control and Prevention. (2023). *Child development basics*. <https://www.cdc.gov/ncbddd/childdevelopment/facts.html>
(Research-based developmental facts and screening tools)
5. Verywell Mind. (2023). *Erik Erikson's stages of psychosocial development*. <https://www.verywellmind.com/erik-eriksons-stages-of-psychosocial-development-2795740>
(Clear summary of Erikson's theory with educational implications)
6. Simply Psychology. (2023). *Vygotsky's theory of cognitive development*. <https://www.simplypsychology.org/vygotsky.html>
(Summary of sociocultural theory with classroom examples)
7. UNICEF. (n.d.). *Early childhood development*. <https://www.unicef.org/early-childhood-development>
(Global data, tools, and strategies for supporting early development)
8. National Institute of Child Health and Human Development. (n.d.). *Child development & behavior*. <https://www.nichd.nih.gov/health/topics/child-development>
(Scientific and policy-based resources on development)
9. Education Corner. (n.d.). *Understanding child development*. <https://www.educationcorner.com/child-development.html>
(Guides for teachers on how to apply developmental principles)
10. Khan Academy. (n.d.). *Human development*. <https://www.khanacademy.org/test-prep/mcat/behavior/human-development>
(Free, animated videos on development theories and stages)

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 Department of Public Health
 University of Illinois at Chicago

Specialization Courses (Electives)

Students will opt any of the following area of specialization and will study six courses.

Areas of Specialization (Tracks for Specialization Courses/Electives)

The student has to choose any **one specialization track** from the given list of **8 areas of specialization**. Once the specialization track is chosen, the student shall opt for **six courses** from the selected specialization to fulfill the requirements of the four-year degree program in Education. In each specialization track, **seven suggestive courses** are provided. HEIs may add more courses to the list depending on the availability of faculty and resources. Similarly, additional specialization tracks under Education may also be introduced by HEIs.

Specialization 1: Early Childhood Care and Education

Specialization 1: Early Childhood Care and Education (Select any Six Courses)				
1.	EDUC- 6220	Child Care and Development	3(3-0)	<i>Nil</i>
2.	EDUC-6221	Early Childhood Education: History, Theory & Practice	3(3-0)	<i>Nil</i>
3.	EDUC-6222	Models of Early Childhood Care and Education	3(3-0)	<i>Nil</i>
4.	EDUC-6223	Early Language and Literacy Development	3(3-0)	<i>Nil</i>
5.	EDUC-6224	Educational Games at ECE Level	3(3-0)	<i>Nil</i>
6.	EDUC-6225	Assessment of Learning in Early Years	3(3-0)	<i>Nil</i>
7.	EDUC-6226	Technology in Early Childhood Education	3(3-0)	<i>Nil</i>

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 University of Bangladesh

EDUC: 6220

Child Care and Development

3(3-0)

Course Description

This course provides a comprehensive understanding of early childhood education, focusing on developmentally appropriate practices, theories of development, learning environments, and the roles of teachers, families, and society in child development. It covers the full spectrum of early childhood education from birth through age eight. Students will gain a foundational understanding of various aspects of child development, with a focus on facilitating growth during the first six years of life. The course content is applicable to infant and toddler programs, preschools, kindergartens, and primary education.

Course Objectives

After studying this course students will be able to:

1. Identify and describe the influences on SPICE (Social, Psychological, Intellectual, Cognitive, and Emotional) areas of growth and development in children during the first six years of life.
2. Gain a comprehensive understanding of developmentally appropriate practices (DAP) in early child education.
3. Explore how culture, context, and parenting shape developmental processes.
4. Examine the roles of teachers, families, and society in supporting young children.
5. Identify patterns of learning at different stages of child development.
6. Reflect on their own beliefs about child development and their implications for teaching and learning.
7. Describe the sequence and characteristics of holistic growth and development in children from birth to age six.

Course Outline**Unit 1: Child Care – Meeting the Needs of Children**

- 1.1 Child care/development and why it is important
- 1.2 Quality of child care and education
- 1.3 Major areas of child development
- 1.4 Brain development of children
- 1.5 Issues faced in child care
- 1.6 Future trends in child care

Unit 2: Infants and Toddlers – Development, Care and Education

- 2.1 Infants and toddlers' physical development
- 2.2 Infants and toddlers' cognitive development
- 2.3 Infants and toddlers' language and literacy development
- 2.4 Nature of psychosocial development
- 2.5 Motor development patterns of infants and toddlers
- 2.6 Emotional development

Unit 3: Preschool Years – Foundations for the Future

- 3.1 Preschool education
- 3.2 Who is the preschooler?
- 3.3 History of preschool education
- 3.4 Role of play in the preschool
- 3.5 Professionals' roles in preschool education

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 Approved by
 Department of Education
 University of Saskatchewan

Unit 4: Kindergarten Education – An Essential Year of Schooling

- 4.1 School readiness: Who gets ready for whom
- 4.2 History of kindergarten education
- 4.3 Developmentally appropriate practice in the kindergarten
- 4.4 Assessment in kindergarten education
- 4.5 Literacy development in the kindergarten
- 4.6 Importance of kindergarten transitions

Unit 5: The Primary Years – The Process of Schooling

- 5.1 Significance of primary years
- 5.2 Curriculum of primary grades
- 5.3 Assessment in the primary grades
- 5.4 Characteristics of primary professionals

Unit 6: Teachers, Family, Schools, and Society

- 6.1 The role of the nuclear and extended family
- 6.2 Role of community, culture, and society
- 6.3 Role of culture and society within families: Gender balance
- 6.4 Role of culture and society: Influence of media
- 6.5 Role of school, peers, and teachers
- 6.6 Teachers' influence on child development
- 6.7 Schools, families, and communities as partners in child development
- 6.8 Parent-teacher conferences

Unit 7: Developmentally Appropriate Practices (DAP)

- 7.1 Principles and guidelines of DAP
- 7.2 Learning through play and exploration
- 7.3 Creating age-appropriate learning environments
- 7.4 Culturally responsive practices

Unit 8: Current Trends and Issues in Early Childhood Education

- 8.1 Technology in early childhood education
- 8.2 Gender and equity issues
- 8.3 Policies and programs (e.g., ECCE frameworks, UNICEF, UNESCO initiatives)
- 8.4 Future directions in the field

Recommended Texts

1. Essa, E. L. (2016). *Introduction to early childhood education* (7th ed.). Cengage Learning.
2. Gordon, A. M., & Browne, K. W. (2016). *Beginnings and beyond: Foundations in early childhood education* (10th ed.). Cengage Learning.
3. Charlesworth, R. (2016). *Understanding child development* (10th ed.). Cengage Learning.
4. Wortham, S. C., & Hardin, B. J. (2015). *Assessment in early childhood education* (7th ed.). Pearson.
5. Morrison, G. S. (2003). *Fundamentals of early childhood education* (3rd ed.). Pearson Education.

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 Associate Professor
 Department of Education
 University of Barisal

Suggested Readings

1. Howes, C. (2012). *Culture and child development in early childhood programs: Practices for quality education and care*. Teachers College Press.
2. Pound, L. (2011). *Influencing early childhood education: Key figures, philosophies and ideas*. Open University Press.
3. Copple, C., & Bredekamp, S. (2009). *Developmentally appropriate practice in early childhood programs serving children from birth through age 8* (3rd ed.). National Association for the Education of Young Children.
4. Steinberg, L. (2011). *Adolescence* (9th ed.). McGraw-Hill Education
5. Puckett, M. B., & Black, J. K. (2007). *The young child: Development from prebirth through age eight* (5th ed.). Pearson Education.
6. Bredekamp, S., & Copple, C. (2009). *Developmentally appropriate practice in early childhood programs serving children from birth through age 8* (3rd ed.). NAEYC.
7. Howes, C. (2012). *Culture and child development in early childhood programs: Practices for quality education and care*. Teachers College Press.
8. Pound, L. (2011). *Influencing early childhood education: Key figures, philosophies and ideas*. Open University Press.
9. Steinberg, L. (2011). *Adolescence* (9th ed.). McGraw-Hill Education.

🌐 Web Resources

1. National Association for the Education of Young Children (NAEYC). (n.d.). <https://www.naeyc.org>
2. UNICEF. (n.d.). *Early childhood development*. <https://www.unicef.org/early-childhood-development>
3. UNESCO. (n.d.). *Early childhood care and education (ECCE)*. <https://www.unesco.org/en/education/early-childhood>
4. Zero to Three. (n.d.). <https://www.zerotothree.org>
5. Centers for Disease Control and Prevention (CDC). (n.d.). *Child development*. <https://www.cdc.gov/ncbddd/childdevelopment/index.html>
6. Harvard Center on the Developing Child. (n.d.). <https://developingchild.harvard.edu>
7. Early Childhood Learning & Knowledge Center (ECLKC). (n.d.). <https://eclkc.ohs.acf.hhs.gov>
8. National Institute for Early Education Research (NIEER). (n.d.). <https://nieer.org>
9. Child Development Institute. (n.d.). <https://childdevelopmentinfo.com>
10. Simply Psychology. (n.d.). *Piaget, Vygotsky, and child development theories*. <https://www.simplypsychology.org>

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Asociación de Profesores de Educación
Institucional de Argentina

EDUC: 6221 Early Childhood Education: History, Theory & Practice 3(3-0)**Course Description**

This course provides an introduction to the history of early childhood education at both international and national levels. It explores developmental and learning theories, including a comparative analysis of key theories and their implications for early childhood education. A special emphasis is placed on critically assessing theories and research studies related to child development and learning, examining how they have influenced reforms in early childhood educational practices.

Course Objectives

After studying the course students will be able to:

1. Comprehend and demonstrate learning through various activities.
2. Critically analyze the various approaches to learning.
3. Analyze historical and contemporary influences on ECE practices.
4. Apply the various approaches in the Pakistani education institutions.
5. Design learning environments that foster cognitive, social, and emotional growth.
6. Construct knowledge through different approaches.

Course Outline**Unit 1: Introduction**

- 1.1 What is Early Childhood Education
- 1.2 Significance of Early Childhood Education and Care
- 1.3 Sustainable Developmental Goals for Education
- 1.4 Principles Underlying a Quality ECCE Program

Unit 2: The Past and the Present – Prologue to the Future

- 2.1 Why History is Important
- 2.2 The Changing View of Children
- 2.3 Historical Figures and Their Influence on Early Childhood Education
- 2.4 Early Childhood Education in Pakistan (History and Current Practices)

Unit 3: Theories Applied to Teaching and Learning – Foundations for Practice

- 3.1 Jean Piaget's Theory of Learning
- 3.2 Lev Vygotsky and Sociocultural Theory
- 3.3 Abraham Maslow and Self-Actualization Theory
- 3.4 Erik Erikson's Psychosocial Theory
- 3.5 Howard Gardner's Multiple Intelligences
- 3.6 Urie Bronfenbrenner and Ecological Theory
- 3.7 B. F. Skinner's Behaviorism
- 3.8 John Dewey's Progressive Education
- 3.9 Teaching and Learning Theories Impacting Today's ECE Practice

Unit 4: Play-Based and Inquiry Learning

- 4.1 The Role of Play in Cognitive and Social Development
- 4.2 Montessori, Reggio Emilia, and Waldorf Approaches
- 4.3 Designing Play-Based Learning Environments
- 4.4 Scaffolding Inquiry and Exploration
- 4.5 Assessing Learning Through Play

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Assistant Professor of
Department of Education
University of Bangladesh

Unit 5: Social-Emotional Learning and Classroom Management

- 5.1 Promoting Emotional Regulation and Resilience
- 5.2 Positive Behavior Support in Early Childhood
- 5.3 Conflict Resolution and Peer Relationships
- 5.4 Trauma-Informed Practices in ECE
- 5.5 Family and Community Partnerships

Unit 6: Language and Literacy Development

- 6.1 Emergent Literacy Strategies (Phonemic Awareness, Storytelling)
- 6.2 Dual-Language Learners and Multilingual Classrooms
- 6.3 Integrating Technology in Early Literacy
- 6.4 Culturally Relevant Children's Literature
- 6.5 Assessing Language Development Milestones

Unit 7: The New World of Early Childhood Education

- 7.1 Infants and Toddlers
- 7.2 The Preschool Years
- 7.3 Kindergarten Education
- 7.4 The Early Elementary Grades
- 7.5 Universal Design for Learning (UDL) in early years

Unit 8: Technology Integration in ECE

- 8.1 Appropriate use of technology in early years
- 8.2 Digital storytelling, games, and apps
- 8.3 Balancing screen time and active play
- 8.4 Teacher training and digital literacy

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 University of Burundi

Recommended Texts

1. Bredekamp, S. (2017). *Effective practices in early childhood education*. 3rd ED. Upper Saddle River, NJ: Pearson
2. Wortham, S. C., & Hardin, B. J. (2015). *Assessment in early childhood education* (7th ed.). Pearson
3. Bredekamp, S., & Copple, C. (2009). *Developmentally appropriate practice in early childhood programs* (3rd ed.). NAEYC
4. Essa, E. L. (2016). *Introduction to early childhood education* (7th ed.). Cengage Learning.
5. Gordon, A. M., & Browne, K. W. (2016). *Beginnings and beyond: Foundations in early childhood education* (10th ed.). Cengage Learning.
6. Charlesworth, R. (2016). *Understanding child development* (10th ed.). Cengage Learning.

Suggested Readings

1. Jennifer Paris, Kristin Beeve, and Clint Springer. (2019). *Introduction to Curriculum for Early Childhood Education*. California Community Colleges, Chancellor's Office.
2. Howes, C. (2012). *Culture and child development in early childhood programs*. Teachers College Press.

3. Pound, I. (2011). *Influencing early childhood education: Key figures, philosophies and ideas*. Open University Press.
4. Woolfolk, Anita (2004). *Educational Psychology*. Dehli; Pearson Education
5. Clark, M.M. and Waller, T. (2007). *Early childhood education and care: Policy and Practice*: Sage Publications
6. Alberto, P. & Troutman, A. (2005). *Applied behavior analysis for teachers, 7th edition*. Upper Saddle River, NJ: Prentice Hall.
7. Anderson, L. & Krathwohl, D. (Eds.). (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives*. New York: Longman.
8. Osnot, C. (Ed.). (2005). *Constructivism: Theory, perspectives, and practice, 2nd edition*. New York: Teachers College Press.
9. Mazur, J. (2005). *Learning and behavior, 6th edition*. Upper Saddle River, NJ: Prentice Hall.

🌐 Web Resources

1. National Association for the Education of Young Children (NAEYC). (n.d.). <https://www.naeyc.org>
2. UNICEF. (n.d.). Early childhood development. <https://www.unicef.org/early-childhood-development>
3. UNESCO. (n.d.). Early childhood care and education (ECCE). <https://www.unesco.org/en/education/early-childhood>
4. Zero to Three. (n.d.). <https://www.zerotothree.org>
5. Harvard Center on the Developing Child. (n.d.). <https://developingchild.harvard.edu>
6. Early Childhood Learning & Knowledge Center (ECLKC). (n.d.). <https://eclkc.ohs.acf.hhs.gov>
7. Child Development Institute. (n.d.). <https://childdevelopmentinfo.com>
8. National Institute for Early Education Research (NIEER). (n.d.). <https://nieer.org>
9. Edutopia. (n.d.). Early learning. <https://www.edutopia.org/grade-level-early-childhood>
10. Khan Academy Kids. (n.d.). <https://learn.khanacademy.org/khan-academy-kids>

Handwritten signature: *Hand*
 Department of Education
 University of KwaZulu-Natal

Course Description

This course is designed to provide an analysis of early childhood program models and curricula with ECE models orientation, related research, societal needs, and the ECE student's philosophy of education. Early childhood curriculum models also vary in terms of the freedom granted to teachers to interpret implementation of the model's framework. Some curriculum models are highly structured and provide detailed scripts for teacher behaviors. Others emphasize guiding principles and expect teachers to determine how best to implement these principles. Curriculum models, regardless of their goals and the degree of flexibility in their implementation, however, are designed to promote uniformity across early childhood programs through the use of a prepared curriculum, consistent instructional techniques, and predictable child outcomes.

Course Objectives

After studying this course students will be able to:

1. Describe distinguishing features of major early childhood curriculum models including innovations in technology.
2. Classify different early childhood curriculum models in relation to the philosophical/theoretical/historical bases of the curriculum model.
3. Analyze theoretical foundations and classroom applications of each model.
4. Apply methods of assessing curriculum implementation in relation to development, instructional behavior, learning outcomes, cultural diversity, and special needs.
5. Design play-based and inclusive learning environments.
6. Examine the relationship among theory, research, and practice.
7. Continue the development of a personal philosophy of education necessary for the professional educator as leader as grounded in the study of socio-cultural theory, culturally relevant practice, issues of social justice, learning as inquiry, developmentally appropriate practice, linguistic and cognitive learners.

Course Outline

Unit 1: Domains of Development

- 1.1 cognitive development
- 1.2 Social growth and childhood
- 1.3 Emotional growth and development
- 1.4 Emotional skills in early childhood education
- 1.5 Psychosocial development
- 1.6 Developmental milestones in early childhood

Unit 2: Early Childhood Education Models

- 2.1 Overview of global models in ECE
- 2.2 Importance of theoretical foundations
- 2.3 Comparison of major models

Unit 3: Montessori Method

- 3.1 Principles of the Montessori Method
- 3.2 The prepared environment and self-directed learning
- 3.3 The absorbent mind

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- 3.4 Sensitive periods
- 3.5 Role of the Montessori teacher

Unit 4: Application of the Montessori Method

- 4.1 Practical life activities
- 4.2 Sensory materials and exploration
- 4.3 Academic materials (math, language, science)
- 4.4 Assessment and observation

Unit 5: High/Scope -- A Constructivist Approach

- 5.1 Basic principles of the constructivist approach
- 5.2 The five elements of the High/Scope model
- 5.3 Daily routine and active learning
- 5.4 Advantages of the High/Scope approach

Unit 6: Reggio Emilia Approach

- 6.1 Beliefs about how children learn
- 6.2 The adult's role in learning
- 6.3 The environment as the third teacher
- 6.4 Core program practices
- 6.5 Considerations for implementing the approach

Unit 7: Other Global and Local Models in ECCE

- 7.1 Waldorf education
- 7.2 Bank Street model
- 7.3 ECE in Finland, UK, and New Zealand
- 7.4 Government and NGO models in Pakistan

Unit 8: Cultural Adaptation and Policy Implications

- 8.1 Integrating global models into Pakistani ECE context
- 8.2 Cultural and contextual considerations
- 8.3 Policy frameworks and implementation challenges
- 8.4 Future trends in ECCE

Recommended Texts

1. Bredekamp, S. (2017). *Effective practices in early childhood education: Building a foundation* (3rd ed.). Pearson
2. Essa, E. L. (2016). *Introduction to early childhood education* (7th ed.). Cengage Learning.
3. Copple, C. & Bredekamp (Eds.). (2009). *Developmentally appropriate practice in early childhood programs serving children from birth through age 8* (3rd. ed.). Washington, DC: NAEYC.
4. Lillard, A. S. (2017). *Montessori: The science behind the genius* (3rd ed.). Oxford University Press.
5. Bruce, T. (2015). *Early childhood education* (5th ed.). Hodder Education.
6. Papatheodorou, T., & Moyles, J. (2009). *Learning together in the early years: Exploring relational pedagogy*. Routledge.

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 Department of Education
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Suggested Readings

1. Goffin, S. G., & Wilson, C. S. (2001). *Curriculum models and early childhood education* (2nd ed.). Merrill Prentice Hall.
2. Roopnarine, J. L., & Johnson, J. E. (2013). *Approaches to early childhood education* (6th ed.). Pearson.
3. Edwards, C., Gandini, L., & Fornan, G. (2012). *The hundred languages of children: The Reggio Emilia experience in transformation* (3rd ed.). Praeger.
4. Siraj-Blatchford, I., & Manni, L. (2006). *Effective leadership in the early years sector*. Institute of Education.
5. Early, D. M., & Burchinal, M. R. (2001). Early childhood care: Relations with family characteristics and preferred care characteristics. *Early Childhood Research Quarterly*, 16, 475-497.
6. Goffin, S. G., & Wilson, C. (2001). *Curriculum models and early childhood education: Appraising the relationship* (2nd ed.). Upper Saddle River, NJ: Merrill/Prentice Hall.
7. Roopnarine, J. L., & Johnson, J. E. (2000). *Approaches to early childhood education* (3rd ed.). Upper Saddle River, NJ: Merrill/Prentice Hall.

Web Resources

1. National Association for the Education of Young Children (NAEYC). (n.d.). <https://www.naeyc.org>
2. Montessori Foundation. (n.d.). <https://www.montessori.org>
3. HighScope Educational Research Foundation. (n.d.). <https://highscope.org>
4. Reggio Children. (n.d.). <https://www.reggiochildren.it/en/>
5. Zero to Three. (n.d.). <https://www.zerotothree.org>
6. UNICEF. (n.d.). Early childhood development. <https://www.unicef.org/early-childhood-development>
7. UNESCO. (n.d.). Early childhood care and education. <https://www.unesco.org/en/education/early-childhood>
8. Harvard Center on the Developing Child. (n.d.). <https://developingchild.harvard.edu>
9. Early Childhood Learning & Knowledge Center (ECLKC). (n.d.). <https://eclkc.ohs.acf.hhs.gov>
10. Child Development Institute. (n.d.). <https://childdevelopmentinfo.com>

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Course Description

This course will assist preschool teachers to plan meaningful activities for the children through which they could experience learning in a safe and non-judgmental environment. This course will provide the teachers of young children with the foundations for creating an excellent early childhood setting. This course will help the students to prepare for and make the most of their teaching practice in a variety of early childhood settings that cater for children from birth to eight years. Practical guidelines and suggestions will be offered in this course.

Course Objectives

After studying the course students will be able to:

1. Understand the role of play and games in child development and learning
2. Analyze the impact of digital games on cognitive and subject-specific skills
3. Apply experiential learning theories to early years education
4. Design developmentally appropriate physical and social learning environments
5. Foster inclusive and secure classroom cultures for diverse learners
6. Support children's creativity, exploration, and emotional growth through environment and play
7. Integrate games into literacy, math, science, and problem-solving curricula
8. Give practical ideas for engaging children in outdoor and indoor activities.
9. Promote experiential learning at early childhood level.

Course Outline

Unit 1: Digital Educational Games in Early Childhood Education

- 1.1 How to incorporate technology in learning
- 1.2 Digital games as learning methodology
- 1.3 Games in preschool education
- 1.4 Impact of games on mathematics learning
- 1.5 Impact of games on science learning
- 1.6 Impact of games on developing critical thinking and problem-solving skills

Unit 2: Play in Early Childhood Education

- 2.1 Importance of play in early childhood education
- 2.2 Supporting children's play, games, and inventions
- 2.3 Understanding children's creative thoughts and expressions
- 2.4 Designing activities to promote learning through play
- 2.5 Curriculum and assessment that support play

Unit 3: Experiential Learning

- 3.1 Defining experiential learning
- 3.2 Experiential learning theory
- 3.3 Principles of experiential learning
- 3.4 Models of experiential learning
- 3.5 Characteristics of experiential learning in ECE

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Unit 4: Importance of Learning Environment at ECE Level

- 4.1 Importance of the environment in learning
- 4.2 Reducing behavioral issues through environmental design
- 4.3 Theories and approaches supporting learning environments
- 4.4 Key features of an effective learning environment
- 4.5 Role of environment in child development

Unit 5: Creating Physical Environments for Learning and Teaching

- 5.1 Organizing the physical environment: What is involved?
- 5.2 Considering the messages and effects of the physical organization
- 5.3 Linking beliefs about learning and teaching with classroom layout
- 5.4 Creating spaces that boost learning

Unit 6: Creating Socially Secure Environments for Learning and Teaching

- 6.1 Welcoming and celebrating cultural diversity
- 6.2 Building caring and cooperative relationships
- 6.3 Promoting independence and a sense of responsibility
- 6.4 Engendering a sense of fairness
- 6.5 Fostering problem-solving and conflict resolution
- 6.6 Guiding behavior

Unit 7: Designing and Assessing Game-Based Learning Experiences

- 7.1 Elements of good educational games
- 7.2 Aligning games with curriculum objectives
- 7.3 Adapting games for individual needs
- 7.4 Observing and documenting learning through games

Unit 8: Teachers' Role in Play-Based and Game-Based Learning

- 8.1 Facilitating exploratory play and inquiry
- 8.2 Balancing structure and free play
- 8.3 Building scaffolding and prompts into play
- 8.4 Reflecting on and improving play-based pedagogy

Recommended Texts

1. Morrison, G. S. (2020). *Fundamentals of early childhood education* (9th ed.). Pearson.
2. Bredekamp, S. (2017). *Effective practices in early childhood education* (3rd ed.). Pearson.
3. Isenberg, J. P., & Jalongo, M. R. (2013). *Creative thinking and arts-based learning* (6th ed.). Pearson.
4. Morrison, G. S. (2020). *Fundamentals of early childhood education* (9th ed.). Pearson.

Suggested Readings

1. Isenberg, J. P., & Jalongo, M. R. (2013). *Creative thinking and arts-based learning* (6th ed.). Pearson.
2. Hirsh-Pasek, K., & Golinkoff, R. M. (2008). *Einstein never used flashcards*. Rodale.
Frost, J. L., Wortham, S. C., & Reifel, S. (2011). *Play and child development* (4th ed.). Pearson.

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3. Edwards, C., Gandini, L., & Forman, G. (2012). *The hundred languages of children* (3rd ed.). Praeger.
 4. Wood, E. (2013). *Play, learning and the early childhood curriculum* (2nd ed.). SAGE Publications.
 5. Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Prentice-Hall.
 6. Van Oers, B. (2012). *Developmental education for young children*. Springer.
- Helm, J. H., & Katz, I. G. (2011). *Young investigators: The project approach in the early years* (2nd ed.). Teachers College Press.

🌐 *Web Resources*

1. National Association for the Education of Young Children (NAEYC). <https://www.naeyc.org>
2. Zero to Three. <https://www.zerotothree.org>
3. Harvard Center on the Developing Child. <https://developingchild.harvard.edu>
4. UNESCO ECCE. <https://www.unesco.org/en/education/early-childhood>
5. UNICEF Early Childhood Development. <https://www.unicef.org/early-childhood-development>
6. Common Sense Education (Game Reviews). <https://www.commonsense.org/education>
7. Teaching Strategies. <https://teachingstrategies.com>
8. Edutopia Early Childhood. <https://www.edutopia.org/grade-level-early-childhood>
9. National Institute for Early Education Research (NIEER). <https://nieer.org>
10. Simply Psychology. <https://www.simplypsychology.org>

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Course Description

Assessment is a key element in fostering growth and development in young children and is the cornerstone of good teaching. This course designed to develop knowledge understanding and skills to use of a variety of assessment procedures appropriate for use with children early years of education. The purpose of this course is to learn about the various assessment techniques and to incorporate information gathered to implement a high-quality early childhood classroom. This course will support development of skills related to the assessment and interpretation of children's daily activities and behaviors in early childhood education.

Course Objectives

After studying the course students will be able to:

1. Define and describe various concepts related to educational measurement and assessment
2. Understand the purpose and role of assessment in early childhood education
3. Use various type of classroom assessment techniques in accordance with the course objectives and nature of content
4. Appreciate the uniqueness of individual children.
5. Learn to collect data about the young children's development learning, interests, and abilities.
6. Develop a systematic record of students' assessment in early years of education
7. Use observation as an assessment tool.
8. Develop and use authentic performance-based assessment and documentation strategies.
9. Use ethical best practices of assessment in early childhood education.
10. Effectively communicate with parents, colleagues, and administrators about observations, assessments and the implications for children's learning.

Course Outline**Unit 1: Role of Measurement and Assessment in Early Childhood Education**

- 1.1 Assessment, test, and measurement
- 1.2 Assessment and the instructional process
- 1.3 Relationship between assessment, teaching, and learning
- 1.4 Principles of effective assessment in early years

Unit 2: Purposes of Assessment

- 2.1 Assessing to improve teaching and learning
- 2.2 Identifying children with special needs
- 2.3 Evaluating program quality
- 2.4 Assessing for accountability
- 2.5 Connecting purposes and types of assessment

Unit 3: Instructional Goals and Objectives as the Foundation of Assessment

- 3.1 Instructional objectives as learning outcomes
- 3.2 Methods of stating instructional objectives
- 3.3 General instructional objectives
- 3.4 Specific learning outcomes

Unit 4: Learning the Language of Assessment: Types of Assessment

- 4.1 Formative and summative assessments

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- 4.2 Formal and informal assessment
- 4.3 Norm-referenced and criterion-referenced assessment
- 4.4 Traditional assessment
- 4.5 Performance-based assessment
- 4.6 Dynamic assessment
- 4.7 Standardized assessment

Unit 5: Indicators of Effective Assessment

- 5.1 Developmentally appropriate assessment
- 5.2 Culturally and linguistically appropriate assessment
- 5.3 Individually appropriate assessment
- 5.4 Validity
- 5.5 Reliability
- 5.6 Usability

Unit 6: Developmentally Appropriate Assessment

- 6.1 Observation and documentation
- 6.2 Anecdotal records and checklists
- 6.3 Portfolios and learning stories
- 6.4 Play-based and performance assessment

Unit 7: Assessing Diverse Learners

- 7.1 Culturally and linguistically responsive assessment
- 7.2 Assessment of children with special needs
- 7.3 Inclusive assessment strategies
- 7.4 Family and community input in assessment

Unit 8: Assessment Tools and Techniques

- 8.1 Designing rubrics and rating scales
- 8.2 Standardized tests: use and limitations
- 8.3 Teacher-made assessments
- 8.4 Using digital tools for documentation

Unit 9: Reporting Assessment Results

- 9.1 Record keeping and documentation
- 9.2 Conducting parent-teacher conferences
- 9.3 Reporting results to parents
- 9.4 Conducting parent-teacher conferences
- 9.5 Supporting transitions through assessment

Recommended Texts

1. Morrison, G.S. Woika, M.J., Breffni, L. (2020) *Fundamentals of Early Childhood Education* (9th Edition). Pearson
2. Mindes, G., & Browne, K. W. (2019). *Assessing young children* (6th ed.). Pearson.
3. Bredekamp, S. (2019). *Effective practices in early childhood education*. (4th edition). Upper Saddle River, NJ: Pearson
4. Wortham, S. C., & Hardin, B. J. (2015). *Assessment in early childhood education* (7th ed.). Pearson.
5. Beaty, J. J. (2013). *Observing development of the young child* (8th ed.). Pearson.

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6. Nilsen, B. A. (2017). *Week by week: Plans for documenting children's development* (7th ed.). Cengage Learning.

Suggested Readings

1. McAfee, O., Leong, D. J., & Bodrova, E. (2015). *Assessing and guiding young children's development and learning* (6th ed.). Pearson.
2. Copple, C., & Bredekamp, S. (Eds.). (2009). *Developmentally appropriate practice in early childhood programs serving children from birth through age 8* (3rd ed.). National Association for the Education of Young Children (NAEYC).
3. Puckett, M. B., & Black, J. K. (2007). *The young child: Development from prebirth through age eight* (5th ed.). Pearson Education.
4. Bagnato, S. J. (2007). *Authentic assessment for early childhood intervention: Best practices*. Guilford Press.
5. Glazzaed, J., Chadwick, D., Webster, A., Percival, J. (2010). *Assessment of Learning in Early Years Foundation Stage*, Sage Publishing.
6. Helm, J. H., Beneke, S., & Steinheimer, K. (2007). *Windows on learning: Documenting young children's work* (2nd ed.). Teachers College Press.
7. Clark, M.M. and Waller, T. (2007). *Early childhood education and care: Policy and Practice*: Sage Publications

Web Resources

1. National Association for the Education of Young Children (NAEYC). (n.d.). <https://www.naeyc.org>
2. Early Childhood Learning & Knowledge Center (ECLKC). (n.d.). <https://eclkc.ohs.acf.hhs.gov>
3. Harvard Center on the Developing Child. (n.d.). <https://developingchild.harvard.edu>
4. UNESCO -- Early Childhood Care and Education. (n.d.). <https://www.unesco.org/en/education/early-childhood>
5. UNICEF -- Early Childhood Development. (n.d.). <https://www.unicef.org/early-childhood-development>
6. National Institute for Early Education Research (NIEER). (n.d.). <https://nieer.org>
7. Zero to Three. (n.d.). <https://www.zerotothree.org>
8. Edutopia -- Early Learning and Assessment. (n.d.). <https://www.edutopia.org/grade-level-early-childhood>
9. Teaching Strategies GOLD. (n.d.). <https://teachingstrategies.com/solutions/assess>
10. Head Start Program Performance Standards. (n.d.). <https://eclkc.ohs.acf.hhs.gov/policy>

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Course Description

This course explores the foundational principles and practices of early language and literacy development, focusing on children from birth to age eight. Moreover, key theories, stages of language acquisition, and the essential components of emergent literacy—including phonemic awareness, print concepts, and oral language development. The course also highlights culturally responsive strategies, family engagement, and play-based learning to foster literacy skills. Additionally, assessment techniques, intervention approaches, and effective instructional methods, including technology integration also involved.

Course Objectives

By the end of this course, students will be able to:

1. Understand the stages of language acquisition and early literacy development in children from birth to age 8.
2. Identify factors that influence language and literacy learning, including social, cognitive, and cultural aspects.
3. Analyze the role of caregivers, educators, and environment in supporting language-rich experiences.
4. Design developmentally appropriate literacy activities that foster listening, speaking, reading, and writing.
5. Use observation and assessment strategies to evaluate early language and literacy skills.
6. Integrate language and literacy in daily routines and play-based curriculum
7. Promote inclusive and culturally responsive language and literacy practices.

Course Outline**Unit 1: Foundations of Language and Literacy**

- 1.1: Introduction to Early Language and Literacy
- 1.2: Importance of Early Years in Brain and Language Development
- 1.3: Stages of Language Acquisition (Receptive and Expressive)
- 1.4: Theories of Language Development (Skinner, Chomsky, Vygotsky)
- 1.5: Components of Language: Phonology, Morphology, Syntax, Semantics, Pragmatics
- 1.6: Oral Language Milestones (0-8 years)

Unit 2: Emergent Literacy

- 2.1: Understanding Emergent Literacy: Definitions and Key Concepts
- 2.2: Print Awareness, Phonemic Awareness, and Alphabet Knowledge
- 2.3: Language and Literacy in Play-Based Learning
- 2.4: Role of Storytelling, Songs, and Rhymes
- 2.5: Literacy-Rich Environments: Designing Classrooms that Support Literacy
- 2.6: Literacy Corners, Book Areas, and Visual Supports

Unit 3: Family, Culture, and Diversity

- 3.1: Cultural and Linguistic Diversity in Language Development
- 3.2: Supporting Dual Language Learners
- 3.3: Family Literacy and Home Language Practices
- 3.4: Building Partnerships with Families for Literacy Growth
- 3.5 Culturally responsive teaching practices

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Unit 4: Phonological and Phonemic Awareness

- 4.1 Understanding phonemes, syllables, rhymes, and alliteration
- 4.2 Activities to build sound discrimination
- 4.3 Phonemic awareness as a predictor of reading success

Unit 5: Developing Reading and Writing Skills

- 5.1 Foundations of Reading: Phonemic Awareness, Phonics, Vocabulary, Fluency, and Comprehension
- 5.2 Shared Reading and Interactive Read-Alouds
- 5.3 Introduction to Early Writing: Scribbling to Invented Spelling
- 5.4 Journaling, Labeling, and Functional Writing Activities
- 5.5 Stages of emergent writing
- 5.6 Role of Play and Dramatic Expression in Language Learning
- 5.7 Supporting fine motor development for writing
- 5.8 Using Puppets, Role Play, and Dramatization

Unit 6: Assessment and Intervention

- 6.1 Observing and Documenting Language and Literacy Behaviors
- 6.2 Informal and Formal Assessment Tools
- 6.3 Identifying and Supporting Children with Language Delays
- 6.4 Collaborating with Speech and Language Professionals

Unit 7: Language-Rich Learning Environments

- 7.1 Creating print-rich classrooms
- 7.2 Use of visual supports, storytelling corners, and dramatic play
- 7.3 Supporting children with speech and language delays
- 7.4 Integrating songs, rhymes, and books into routines
- 7.5 Language objectives in play, exploration, and routines

Unit 8: Instructional Strategies and Technology

- 8.1 Planning for whole group, small group, and individual instruction
- 8.2 Strategies for Teaching Listening and Speaking
- 8.3 Interactive Reading and Dialogic Reading Techniques
- 8.4 Using multimedia and e-books to support early literacy
- 8.5 Integrating Technology in Language and Literacy Development

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Recommended Texts

1. Schickedanz, J. A., & Collins, M. F. (2013). *So much more than the ABCs: The early phases of reading and writing*. National Association for the Education of Young Children.
2. Justice, L. M., & Vukelich, C. (2013). *Literacy development in the early years: Helping children read and write* (7th ed.). Pearson.
3. Wasik, B. A. (Ed.). (2012). *Handbook of family literacy* (2nd ed.). Routledge.

4. Morrow, L. M. (2012). *Literacy development in the early years: Helping children read and write* (7th ed.). Pearson.
5. Tompkins, G. E. (2016). *Language arts: Patterns of practice* (9th ed.). Pearson.

Suggested Readings

1. McGee, L. M., & Richgels, D. J. (2011). *Designing early literacy programs* (2nd ed.). Pearson.
2. Genishi, C., & Dyson, A. H. (2009). *Children, language, and literacy: Diverse learners in diverse times*. Teachers College Press.
3. Clay, M. M. (2001). *Change over time in children's literacy development*. Heinemann.
4. Snow, C. E., Burns, M. S., & Griffin, P. (Eds.). (1998). *Preventing reading difficulties in young children*. National Academies Press.
5. Neuman, S. B., & Dickinson, D. K. (Eds.). (2001). *Handbook of early literacy research* (Vol. 1). Guilford Press.

🌐 Web Resources

1. National Association for the Education of Young Children (NAEYC). (n.d.). <https://www.naeyc.org>
 - Offers position statements, research, and classroom strategies for early literacy.
2. Reading Rockets. (n.d.). <https://www.readingrockets.org>
 - Provides research-based reading strategies, lesson plans, and assessments.
3. Zero to Three – Early Language and Literacy. (n.d.). <https://www.zerotothree.org>
 - Focuses on infants and toddlers' communication, early language, and literacy development.
4. International Literacy Association (ILA). (n.d.). <https://www.literacyworldwide.org>
 - Global resources and standards for literacy educators.
5. Center for Early Literacy Learning (CELL). (n.d.). <https://www.earlyliteracylearning.org>
 - Free practice guides for promoting literacy in young children.
6. Colorín Colorado. (n.d.). <https://www.colorincolorado.org>
 - Bilingual resources to support English Language Learners and their families.
7. Teaching Strategies GOLD. (n.d.). <https://teachingstrategies.com/solutions/assess>
 - Resources for literacy observation, documentation, and formative assessment.
8. Harvard Center on the Developing Child – Language Development. (n.d.). <https://developingchild.harvard.edu>
 - Research on early brain development and its impact on language acquisition.
9. Edutopia - Early Childhood Literacy. (n.d.). <https://www.edutopia.org/grade-level-early-childhood>

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Course Description

This course explores the integration of technology in early childhood education settings. It examines developmentally appropriate uses of digital tools, software, and multimedia to support young children's learning. Emphasis is placed on selecting and using technology to promote creativity, collaboration, literacy, numeracy, and problem-solving skills. The course also addresses digital safety, screen time balance, and the teacher's role in guiding technology use for children aged 3-8.

Course Objectives

By the end of this course, students will be able to:

1. Describe the role of technology in early learning and development
2. Identify developmentally appropriate digital tools for young children
3. Integrate technology into early childhood curriculum
4. Evaluate educational apps, games, and platforms
5. Promote media literacy and digital citizenship in early learners
6. Design tech-based activities that support inclusive learning
7. Reflect on ethical, safety, and screen time considerations
8. Collaborate with families to support meaningful technology use at home

Course Outline**Unit 1: Introduction to Technology in Early Childhood Education**

- 1.1 Definitions and scope of technology in ECE
- 1.2 Historical development and evolution
- 1.3 Benefits and challenges of digital integration

Unit 2: Theories and Frameworks Guiding Tech Use in ECE

- 2.1 Constructivism and technology
- 2.2 SAMR and TPACK models
- 2.3 Guidelines from NAEYC and ISTE

Unit 3: Developmentally Appropriate 'Technology' Tools

- 3.1 Criteria for selecting educational software and apps
- 3.2 Age-appropriate tools for literacy, numeracy, and creativity
- 3.3 Balancing screen time with active play
- 3.4 Apps and platforms for home-school communication
- 3.5 Using digital portfolios to involve families

Unit 4: Integrating Technology into Early Childhood Curriculum

- 4.1 Technology-supported lesson planning
- 4.2 Interactive storytelling, e-books, and multimedia
- 4.3 Learning centers with digital tools
- 4.4 Planning for continuous improvement
- 4.5 Using games to support literacy and numeracy
- 4.6 Ethical issues in technology use with children

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Unit 5: Promoting 21st Century Skills through Technology

- 5.1 Creativity and innovation
- 5.2 Communication and collaboration
- 5.3 Critical thinking and digital problem-solving
- 5.4 Encouraging creativity through child-led media projects
- 5.5 Building global awareness in early learners

Unit 6: Technology for Inclusive and Differentiated Instruction

- 6.1 Assistive technology for special needs
- 6.2 Tools for multilingual and diverse learners
- 6.3 Adapting digital content for varied learning styles
- 6.4 Teaching balance: digital play vs. physical activity
- 6.5 Creating tech-free zones and times

Unit 7: Digital Storytelling and Child-Created Media

- 7.1 Tools for digital storytelling (e.g., Book Creator, Shadow Puppet)
- 7.2 Supporting children to express ideas through multimedia
- 7.3 Combining audio, visuals, and narration
- 7.4 Documenting children's voices and experiences
- 7.5 Enhancing storytelling, science, and exploration through immersive tech

Unit 8: Teacher's Role in Digital Facilitation

- 8.1 Managing screen time in the classroom
- 8.2 Scaffolding technology use in play and learning
- 8.3 Modeling responsible digital behavior
- 8.4 Providing equitable access to technology

Unit 9: Evaluating and Reflecting on Tech Integration

- 9.1 Observing and assessing digital engagement
- 9.2 Teacher reflection and professional development
- 9.3 Creating tech-integrated portfolios and documentation
- 9.4 Designing activities that combine physical and digital elements
- 9.5 Supporting home-based learning through digital platforms

Recommended Texts

1. Donohue, C. (Ed.). (2015). *Technology and digital media in the early years: Tools for teaching and learning*. Routledge.
2. Lynch, S. A., & Warner, L. (2018). *Technology and interactive media in early childhood programs*. NAEYC.
3. Heider, K. L., & Jalongo, M. R. (Eds.). (2014). *Young children and families in the information age: Applications of technology in early childhood*. Springer.
4. Flewitt, R., Messer, D., & Kucirkova, N. (2015). *New media in the classroom: Rethinking digital technology and learning in the early years*. Routledge.
5. Palaiologou, I. (2016). *Children under five and digital technologies: Implications for early years pedagogy*. *European Early Childhood Education Research Journal*, 24(1), 5–24.

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Associate Professor
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Suggested Readings

1. Bolstad, R. (2004). *The role and potential of ICT in early childhood education: A review of New Zealand and international literature*. New Zealand Council for Educational Research.
2. McManis, L. D., & Gunnewig, S. B. (2012). *Finding the education in educational technology with early learners*. Pearson.
3. Marsh, J., & Hallet, E. (Eds.). (2008). *Desirable literacies: Approaches to language and literacy in the early years* (2nd ed.). SAGE Publications.
4. Yelland, N. (2010). *Contemporary perspectives on early childhood education*. Open University Press.
5. Plowman, L., McPake, J., & Stephen, C. (2010). *Growing up with technology: Young children learning in a digital world*. Routledge.

🌐 Web Resources

1. National Association for the Education of Young Children (NAEYC). (n.d.). Technology and Young Children. <https://www.naeyc.org/resources/topics/technology-and-media>
2. Common Sense Education. (n.d.). Reviews of educational apps and tech tools. <https://www.commonsense.org/education>
3. Zero to Three. (n.d.). Screen Sense and digital media use for infants and toddlers. <https://www.zerotothree.org>
4. ISTE (International Society for Technology in Education). (n.d.). Early learning technology standards and teaching resources. <https://www.iste.org/standards/iste-standards-for-students>
5. Harvard Center on the Developing Child. (n.d.). Technology and brain development. <https://developingchild.harvard.edu>
6. UNESCO. (n.d.). ICT in early childhood education. <https://www.unesco.org/en/education/ict>
7. OECD Education and Skills. (n.d.). Digital learning in early childhood. <https://www.oecd.org/education>
8. Tech & Learning. (n.d.). Edtech ideas and reviews for early years. <https://www.techlearning.com>
9. Edutopia. (n.d.). Early childhood and educational technology. <https://www.edutopia.org/technology-integration>
10. Teaching Strategies. (n.d.). Digital tools and portfolios for ECE. <https://teachingstrategies.com>

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Specialization 2: Educational Research

Specialization 2: Educational Research (Select any Six Courses)				
1.	EDUC-6227	Data Analysis: Qualitative and Quantitative Techniques	3(3-0)	<i>Nil</i>
2.	EDUC-6228	Project Management	3(3-0)	<i>Nil</i>
3.	EDUC-6229	Report Writing	3(3-0)	<i>Nil</i>
4.	EDUC-6230	Instrument Development	3(3-0)	<i>Nil</i>
5.	EDUC-6231	Research Ethics and Professional Writing	3(3-0)	<i>Nil</i>
6.	EDUC-6232	Research Methods for Education in the Digital Age	3(3-0)	<i>Nil</i>
7.	EDUC-6233	Applied Research in Education	3(3-0)	<i>Nil</i>

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Assistant Professor
Department of Education
University of Jharkhand

Course Description

This course enhances participants' understanding of qualitative and quantitative data analysis techniques, equipping them with practical skills to organize, analyze, and derive insights from diverse data sources—including surveys, interviews, open-ended responses, observations, field notes, documents, and web content—using qualitative data analysis software.

Participants will learn to describe, summarize, and analyze both structured and unstructured data, create effective visual displays, and draw meaningful interpretations. By the end of the course, they will gain efficiency in handling data, uncover connections through computer-assisted analysis, and learn to present evidence-backed findings clearly and persuasively.

Course Objectives

On the successful completion of the course, students will:

1. Appraise different analytical approaches used in qualitative and quantitative data analysis
2. Understand how different software are used to work with qualitative and quantitative data
3. Learn basic functions of nvivo
4. Prepare and organize structured and unstructured data in computer software
5. Perform different coding and analytical procedures in nvivo
6. Generate graphic displays to communicate results
7. Draw meaningful interpretations from data analysis

Course Outline

Unit 1: Qualitative Data Analysis

- 1.1 Primary methods
 - 1.1.1 Keyword analysis
 - 1.1.2 Constant comparison
 - 1.1.3 Content analysis
 - 1.1.4 Domain analysis
 - 1.1.5 Thematic analysis
- 1.2 Specialized methods
 - 1.2.1 Analytical induction
 - 1.2.2 Heuristic or phenomenological analysis
 - 1.2.3 Ethnographic analysis
 - 1.2.4 Narrative analysis
 - 1.2.5 Discourse analysis
 - 1.2.6 Semiotic analysis

Unit 2: Computer Assisted Data Analysis - Introduction to NVivo

- 2.1 What is NVivo?
- 2.2 Basics of NVivo
- 2.3 Create a project in NVivo
- 2.4 Working with different sources (e.g., media and external sources, Endnote library, web site, data sets)
- 2.5 Classifications in NVivo
- 2.6 Visualizing data from a classification sheet

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Department of Education
University of Maryland

Unit 3: Visualizing Qualitative Data

- 3.1 Create a model using data and results from queries
- 3.2 Create a model from scratch
- 3.3 Export the model
- 3.4 Other forms of visualization (graph, chart, cluster analysis, tree maps)

Unit 4: Introduction to Quantitative Data Analysis

- 4.1 Understanding quantitative data and its role in research
- 4.2 Key concepts: variables, scales of measurement, and data types
- 4.3 Data cleaning and management
- 4.4 Steps for cleaning raw data: handling missing data, outliers, and errors
- 4.5 Organizing data for analysis: coding and inputting data into software

Unit 5: Data Analysis Software & Descriptive Statistics

- 5.1 Overview of software options: SPSS, Excel, R, and Python
- 5.2 Measures of central tendency: mean, median, mode
- 5.3 Measures of dispersion: range, variance, standard deviation
- 5.4 Creating and interpreting histograms, bar charts, and box plots
- 5.5 Using software to generate descriptive statistics and visualizations

Unit 6: Inferential Statistics

- 6.1 Basics of probability and common distributions (normal, binomial)
- 6.2 Conducting t-tests (independent and paired samples)
- 6.3 Analysis of Variance (ANOVA) for comparing multiple groups
- 6.4 Pearson correlation and its interpretation
- 6.5 Simple linear regression: understanding relationships between variables
- 6.6 Non-parametric tests
 - 6.6.1 When and how to use non-parametric tests (Chi-square, Mann-Whitney U)
 - 6.6.2 Advantages and limitations of non-parametric methods

Unit 7: Data Visualization and Reporting

- 7.1 Creating advanced visualizations: scatter plots, heat maps, and more
- 7.2 Best practices for visualizing data to communicate results
- 7.3 Structuring reports and presentations for quantitative data
- 7.4 Using visual aids to enhance understanding and impact

Recommended Texts

1. Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.
2. Flick, U. (2023). *An introduction to qualitative research* (7th ed.). SAGE Publications.
3. Miles, M. B., Huberman, A. M., & Saldaña, J. (2020). *Qualitative data analysis: A methods sourcebook* (4th ed.). SAGE Publications.
4. Field, A. (2018). *Discovering statistics using IBM SPSS statistics* (5th ed.). SAGE Publications.
5. Pallant, J. (2020). *SPSS survival manual: A step by step guide to data analysis using IBM SPSS* (7th ed.). Open University Press.
6. Gravetter, F. J., & Wallnau, L. B. (2020). *Statistics for the behavioral sciences* (11th ed.). Cengage Learning.
7. Leech, N. L., & Omwuegbuzie, A. J. (2011). Beyond constant comparison qualitative data

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Abdullahi Yusuf
Department of Statistics
University of Lagos

analysis: using NVivo. *School Psychology Quarterly*, 26(1), 70-84.

Suggested Readings

1. Bazeley, P. (2007). *Qualitative data analysis with NVivo*. Thousand Oaks: SAGE.
2. Richards, L. (2009). *Handling Qualitative Data: A Practical Guide (Second ed.)*. London: Sage.
3. Savin-Baden, M., & Major, C. H. (2013). *Qualitative Research: The essential guide to theory and practice*. Routledge
4. Neuman, W. L. (2014). *Social research methods: Qualitative and quantitative approaches (7th ed.)*. Pearson Education.
5. Patton, M. Q. (2015). *Qualitative research and evaluation methods (4th ed.)*. SAGE Publications.
6. Bryman, A. (2016). *Social research methods (5th ed.)*. Oxford University Press.
7. Bazeley, P., & Jackson, K. (2013). *Qualitative data analysis with NVivo (2nd ed.)*. SAGE Publications.
8. Godau, R. I. (2004). Qualitative Data Analysis Software: NVivo. *Qualitative Research Journal*, 4(2)
9. Johnston, L. (2006). Software and Method: Reflections on Teaching and Using QSR NVivo in Doctoral Research. *International Journal of Social Research Methodology*, 9(5), 379 – 391.

Web Resources

1. **SAGE Research Methods**
<https://methods.sagepub.com>
Comprehensive resource with books, videos, and tools for qualitative and quantitative research methods.
2. **NVivo (QSR International)**
<https://www.qsrinternational.com/nvivo-qualitative-data-analysis-software/home>
Official site with guides, tutorials, and software for qualitative data analysis.
3. **IBM SPSS Tutorials**
<https://www.ibm.com/docs/en/spss-statistics>
Official documentation and guides for IBM SPSS Statistics software.
4. **Laerd Statistics**
<https://statistics.laerd.com>
User-friendly explanations of statistical tests, including how to perform them in SPSS.
5. **Khan Academy – Statistics and Probability**
<https://www.khanacademy.org/math/statistics-probability>
Free lessons on statistical concepts with interactive exercises.
6. **Coursera – Data Analysis Courses**
<https://www.coursera.org/browse/data-science/data-analysis>
University-led online courses on both qualitative and quantitative analysis.
7. **edX – Data Analysis Programs**
<https://www.edx.org/learn/data-analysis>
Offers data analysis and statistics courses from institutions like Harvard and MIT.
8. **YouTube – Dr. Todd Grande's Channel**
<https://www.youtube.com/user/RI.Grande>
Clear explanations on qualitative and quantitative methods, SPSS, and statistics.

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University of Mississippi

Course Description

This course intends to provide participants with an activity-based, advanced understanding of how to design and manage research projects in the field of education in particular, and social sciences in general. The course embraces a practical, needs-driven, client-centred approach in planning and managing research projects. It provides participants with an opportunity to familiarize themselves with, and participate in, a range of coordinated and controlled activities conforming to management in research projects. As participants develop a broader understanding of various tools, techniques and skills, they are expected to be able to choose and use those that best meet their specific needs as project managers. Furthermore, practical ideas related to effectively closing a research project and communicating its findings to diverse audiences are discussed. The course concludes with hands-on experience of a project management software and some thoughts about pursuing potential careers in local and international research projects.

Course Objectives

At the end of the course, the participants will be able to:

1. Understand core concepts and stages of project management
2. Acquire knowledge of various management tools and skills related to research projects
3. Develop project proposals including timelines, budgets, and goals
4. Select and apply from a range of tools and techniques related to management in research projects
5. Understand how to write grant winning proposals for research projects with a specific focus on resources, time and budget
6. Gain hands-on experience of a project management software
7. Understand ethical considerations and risk management in projects
8. Identify and pursue potential careers in local and international research projects

Course Outline**Unit 1: Project Management – An Overview**

- 1.1 Introduction to project management
- 1.2 Project management framework
- 1.3 The project life cycle
- 1.4 Research project
- 1.5 Understanding research project management

Unit 2: Planning a Research Project and Applying for Research Grants

- 2.1 Expression of interest, concept notes, and research grant proposals
- 2.2 Planning tools and efficiency and effectiveness of research projects
- 2.3 Writing the research proposal
- 2.4 Establishing the research team
- 2.5 Creating the work breakdown structures and developing responsibility matrices
- 2.6 Estimating project time and costs
- 2.7 Writing proposals for research grants
- 2.8 Applying for research grants

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Department of Education
University of Georgia

Unit 3: Team Building and Stakeholder Management

- 3.1 Identifying and managing stakeholders
- 3.2 Forming and leading project teams
- 3.3 Roles, responsibilities, and communication plans
- 3.4 Conflict resolution and team collaboration

Unit 4: Executing, Monitoring, and Controlling the Research Project

- 4.1 Managing research implementation phases
- 4.2 Coordinating activities and tasks and keeping the teams together
- 4.3 Maintaining project documents and records
- 4.4 Communicating and interacting with donor organizations
- 4.5 Monitoring frameworks for research projects
- 4.6 Managing research project funds, risks, scope, and stakeholders
- 4.7 Ethical considerations in project management

Unit 5: Funding and Grant Writing

- 5.1 Overview of local and international funding bodies
- 5.2 Writing successful grant applications
- 5.3 Budget planning and justification
- 5.4 Proposal submission and donor communication

Unit 6: Project Implementation and Monitoring

- 6.1 Managing timelines, deliverables, and milestones
- 6.2 Using Gantt charts, PERT, and logic models
- 6.3 Monitoring tools and frameworks (e.g., logical framework matrix)
- 6.4 Tracking risks, scope, and quality

Unit 7: Closing and Communicating Findings of the Research Project

- 7.1 Designing the research project's strategies for communicating findings
 - 7.1.1 Purpose of communicating and reporting
 - 7.1.2 Timing
 - 7.1.3 Audience(s)
 - 7.1.4 Overview of communicating and reporting formats
- 7.2 Evaluating outcomes and impact
- 7.3 Lessons learned and sustainability

Unit 8: Software Applications in Project Management

- 8.1 Types of available software
 - 8.1.1 Desktop
 - 8.1.2 Web-based/online
 - 8.1.3 Personal
 - 8.1.4 Single user
 - 8.1.5 Collaborative
 - 8.1.6 Visual
- 8.2 Software
 - 8.2.1 Project management information system software - PMIS
 - 8.2.2 Project portfolio management
 - 8.2.3 Time tracking software

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University of Mississippi

Unit 9: Career Paths in Research

- 9.1 Exploring research-related careers in academic and non-academic settings
- 9.2 Research roles in universities, think tanks, NGOs, and development agencies
- 9.3 Participating in local research projects: opportunities, challenges, and funding
- 9.4 Involvement in international collaborative research projects
- 9.5 Building a research portfolio and professional identity
- 9.6 Applying for research fellowships, scholarships, and post-graduate opportunities
- 9.7 Essential skills for career growth in research: writing, presenting, publishing, and networking

Recommended Texts

1. Baume, C., Martin, P., & Yorke, M. (2002). *Managing educational development projects: Effective management for maximum impact*. London: Kogan Page.
2. Larson, E. W., & Gray, C. F. (2011). *Project management: The managerial process*. McGraw-Hill.
3. Project Management Institute. (2021). *A guide to the project management body of knowledge (PMBOK® guide)* (7th ed.). Project Management Institute.
4. Kerzner, H. (2022). *Project management: A systems approach to planning, scheduling, and controlling* (12th ed.). Wiley.
5. Verzuh, E. (2021). *The fast forward MBA in project management* (6th ed.). Wiley.
6. Gido, J., Clements, J. P., & Baker, R. (2021). *Successful project management* (7th ed.). Cengage Learning.

Suggested Readings

1. Cooksey, A. (2014). *Managing and leading research projects*. SAGE Publications.
2. Cohen, L., Manion, L., & Morrison, K. (2018). *Research methods in education* (8th ed.). Routledge.
3. Kogon, K., Blakemore, S., & Wood, J. (2015). *Project management for the unofficial project manager*. BenBella Books.
4. Warburton, R., & Kanabar, V. (2013). *The art and science of project management*. WPI Press.
5. Booth, W. C., Colomb, G. G., & Williams, J. M. (2016). *The craft of research* (4th ed.). University of Chicago Press.
6. O'Neal-McElrath, T. (2021). *Winning grants step by step: The complete workbook for planning, developing, and writing successful proposals* (5th ed.). Wiley.

🌐 Web Resources

1. **Project Management Institute (PMI)**
<https://www.pmi.org>
Leading authority on project management standards, certifications, and resources.
2. **Coursera – Project Management Courses**
<https://www.coursera.org/courses?query=project%20management>
Free and paid courses from top universities and institutions.
3. **edX – Project Management Programs**
<https://www.edx.org/learn/project-management>
Online programs offered by institutions like MIT, UQ, and Delft.

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4. **MindTools -- Project Management Tools**
https://www.mindtools.com/pages/main/newMN_PPM.htm
Templates and guides for planning, scheduling, and team management.
5. **Trello**
<https://trello.com>
Collaborative project management tool using boards and cards.
6. **Smartsheet**
<https://www.smartsheet.com/project-management-templates>
Templates and resources for research project tracking.
7. **Grant Training Center**
<https://www.granttrainingcenter.com>
Resources for grant writing, workshops, and funding strategies.
8. **ResearchGate**
<https://www.researchgate.net>
Professional network for researchers to share work and collaborate.
9. **Grants.gov**
<https://www.grants.gov>
U.S. portal for finding and applying to federal grants.
10. **Lucidchart -- Project Planning Diagrams**
<https://www.lucidchart.com/pages/examples/project-management>
Diagramming tool for timelines, Gantt charts, and workflows.

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University of Bengkulu

This course aims to prepare Master's students for writing scientific reports in general, and thesis reports in particular. It is a process-oriented writing course that assists students to attain the necessary knowledge, skills and understanding that are needed to write a satisfactory thesis report in the field of education. In particular, students will develop skills needed to write for scientific purposes such as preparing a research proposal and report. The course will provide students with the opportunities to present their ideas in a written form and receive feedback on how to improve their report writing skills. Students will prepare written assignment(s) according to the departmental recommendations by using the template(s) provided in the classroom and following APA guidelines.

Course Objectives

Upon successful completion of the course, students will be able to:

1. Engage in independent reading and writing
2. Think, discover and develop ideas through reading and writing
3. Learn, practice and review effective scientific writing
4. Prepare and edit multiple drafts of a report
5. Produce at least one structured, scientific report (e.g., literature review, thesis proposal) satisfactorily
6. Prepare and give a power point presentation on their reports
7. Utilize the Microsoft Office tools to produce scientific reports
8. Format the given references and documents according to APA guidelines
9. Utilize the Endnote X4 software satisfactorily to manage references according to APA style (optional)

Course Outline

Unit 1: Introduction to Research Report Writing

- 1.1 Purpose and Importance of Research Reports
- 1.2 Types of Research Reports (Academic, Technical, Business)
- 1.3 Key Differences Between Reports, Essays, and Theses
- 1.4 Audience Analysis and Tailoring Content
- 1.5 Ethical Considerations in Report Writing

Unit 2: Planning and Structuring a Research Report

- 2.1 Defining the Research Problem and Objectives
- 2.2 Developing a Logical Report Structure
- 2.3 Outlining: Traditional vs. Digital Tools (Mind Maps, Outlining Software)
- 2.4 Writing an Effective Title and Abstract
- 2.5 Setting Realistic Timelines for Report Completion

Unit 3: Manuscript/Report Structure (Preliminary Section)

- 3.1 Title page (hard cover)
- 3.2 Title page (first page)
- 3.3 Approval sheet

- 3.4 Declaration (optional)
- 3.5 Dedication
- 3.6 Acknowledgements
- 3.7 Abstract
- 3.8 Table of contents
- 3.9 List of Tables
- 3.10 List of Figures
- 3.11 List of Abbreviations
- 3.12 Abstract

Unit 4: Manuscript/Report Structure (Main Body/Section)

- 4.1 Chapter I -- Introduction
- 4.2 Chapter II -- Review of Related Literature (will be dealt in detail for this course -- students will be asked to write a literature review of 4000-5000 words, approximately 10 pages, on the research topic of their own choice)
- 4.3 Chapter III -- Research Methodology
- 4.4 Chapter IV -- Data Analysis and Interpretation
- 4.5 Chapter V -- Summary, Findings, Conclusion and Recommendations
- 4.6 Reference list

Unit 5: Manuscript/Report Structure (Last Section)

- 5.1 Appendices
- 5.2 Types of Appendices
- 5.3 Report

Unit 6: Using Computer Tools (Microsoft Office) to Prepare/Format Reports

- 6.1 Heading levels
- 6.2 Tables
- 6.3 Figures
- 6.4 Generating Table of contents
- 6.5 Margins, line spacing, page numbering and formatting
- 6.6 Spacing and justification
- 6.7 Visual layout

Unit 7: Referencing and Academic Integrity

- 7.1 Understanding Different Citation Styles (APA, MLA, Chicago, IEEE)
- 7.2 Avoiding Plagiarism: Paraphrasing and Quoting Correctly
- 7.3 Cross-Checking References for Accuracy
- 7.4 Using AI Tools for Citation Assistance (Ethically)
- 7.5 Handling Confidential and Sensitive Data

Unit 8: Editing, Formatting, and Finalizing the Report

- 8.1 Proofreading Techniques (Self-Editing vs. Peer Review)
- 8.2 Ensuring Consistency in Style and Tone
- 8.3 Formatting Guidelines (Fonts, Headings, Spacing, Margins)
- 8.4 Preparing Appendices and Supplementary Materials
- 8.5 Submission and Publication Strategies

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Recommended Texts

1. Gerson, S. J., & Gerson, S. M. (2020). *Technical communication: Process and product* (9th ed.). Pearson.
2. Oshima, A., & Hogue, A. (2020). *Writing academic English* (5th ed.). Pearson.
3. Weaver-Hightower, M. B. (2019). *How to write qualitative research*. New York: Routledge.
4. American Psychological Association. (2019). *Publication manual of the American Psychological Association* (7th ed.). Washington, DC: American Psychological Association.
5. Bailey, S. (2018). *Academic writing: A handbook for international students* (5th ed.). Routledge.
6. McMillan, K. (2017). *The study skills book* (4th ed.). Pearson Education.

Suggested Readings

1. Wang, G. T., & Park, K. (2016). *Student research and report writing: From topic selection to the complete paper*. UK: WILEY Blackwell.
2. Jensen, J. (2017). *Write no matter what: Advice for academics*. Chicago: The University of Chicago Press.
3. Lester, J. D., & Lester Jr., J. D. (2015). *The essential guide: Research writing across the disciplines* (6th ed.). Pearson.
4. Redman, P. (2011). *Good essay writing: A social sciences guide* (4th ed.). SAGE Publications.
5. Anderson, P. V. (2013). *Technical communication: A reader-centered approach* (8th ed.). Cengage Learning.
6. Greetham, B. (2013). *How to write better essays* (3rd ed.). Palgrave Macmillan.

🌐 Web Resources

1. **Purdue Online Writing Lab (OWL)**
<https://owl.purdue.edu>
Extensive resources on academic and report writing, formatting, and citation styles.
2. **University of Manchester Academic Phrasebank**
<https://www.phrasebank.manchester.ac.uk>
Helpful academic phrases for structuring and writing different parts of a report.
3. **Monash University – Language and Learning Online**
<https://www.monash.edu/rlo>
Guides and examples on writing academic and technical reports.
4. **University of Leicester – Report Writing Guide**
<https://www2.le.ac.uk/offices/ld/resources/writing/writing-resources/reports>
Detailed guide on structure and style of report writing.
5. **SkillsYouNeed – Report Writing**
<https://www.skillsyouneed.com/write/report-writing.html>
Practical, easy-to-follow resource for students and professionals.
6. **BBC Bitesize – Report Writing (for foundational learners)**
<https://www.bbc.co.uk/bitesize/topics/z2yycdm/articles/zs3g3k7>
Basic report writing for school and early undergraduate levels.

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Associate Lecturer
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University of Bradford

7. **Coursera – Academic English: Writing Specialization**
<https://www.coursera.org/specializations/academic-english>
Series of courses on academic and research writing from UC Irvine.
8. **FutureLearn – Report Writing Courses**
<https://www.futurelearn.com/subjects/language-courses/academic-english>
Online modules on academic and business writing.
9. **Grammarly Blog**
<https://www.grammarly.com/blog>
Tips and examples for professional writing, grammar, and style.

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Course Description

This course equips future educators and educational researchers with the essential knowledge and practical skills to design, develop, validate, and administer reliable and valid data collection instruments. Students will learn to create various tools (tests, questionnaires, scales, observation checklists, interview protocols) crucial for classroom assessment, educational research, program evaluation, and needs analysis within the educational context.

Course Objectives

Upon successful completion of this course, students will be able to:

1. Identify and differentiate between various types of instruments (achievement tests, aptitude tests, attitude scales, personality inventories, questionnaires, observation schedules, interview guides, rubrics).
2. Explain the steps involved in systematic instrument development.
3. Formulate clear and measurable research questions/objectives to guide instrument design.
4. Design appropriate instruments (e.g., multiple-choice tests, Likert scales, semantic differentials, structured interview protocols, observation checklists, rubrics) aligned with specific purposes and learning outcomes.
5. Apply appropriate scaling techniques (nominal, ordinal, interval, ratio).
6. Conduct pilot testing and analyze pilot data for item analysis (difficulty, discrimination) and feedback.
7. Estimate basic reliability (e.g., internal consistency using Cronbach's Alpha) and validity (content, face) evidence for instruments.
8. Understand ethical considerations (confidentiality, informed consent, avoidance of harm, cultural sensitivity) in instrument development and administration within Pakistan.

Course Outline**I: Unit 1: Introduction to Instrument Development**

- 1.1 Differentiate instrument and instrumentation
- 1.2 Purpose and construct of instrument
- 1.3 Qualities of a good instrument: validity, reliability, objectivity, usability
- 1.4 Overview of instrument types
- 1.5 Ethical foundations in instrumentation

Unit 2: Instrument Types and Selection I: Cognitive, Affective, and Behavioral Measures

- 2.1 Attitude scales (Likert, Semantic Differential, Thurstone)
- 2.2 Questionnaires (structured, semi-structured)
- 2.3 Observation schedules (checklists, rating scales, anecdotal records)
- 2.4 Interview protocols (structured, semi-structured)

Unit 3: Scaling Techniques

- 3.1 Levels of measurement: nominal, ordinal, interval, ratio
- 3.2 Applying scales in questionnaires and attitude measures
- 3.3 Selecting appropriate response formats (frequency, agreement, importance scales)
- 3.4 Issues in scaling (number of points, neutral option)

Mmd
Associate Professor
Department of Education
University of Sargodha

Unit 4: Content Validity and Face Validity

- 4.1 Defining content validity
- 4.2 Expert review: selecting and utilizing subject matter experts (SMEs)
- 4.3 Calculating Content Validity Ratio (CVR) and Content Validity Index (CVI) – basic understanding
- 4.4 Defining face validity
- 4.5 Conducting readability checks (e.g., Flesch-Kincaid)
- 4.6 Cognitive pre-testing and pilot interviews

Unit 5: Pilot Testing

- 5.1 Purpose and planning of pilot testing
- 5.2 Selecting an appropriate pilot sample
- 5.3 Administering the pilot instrument
- 5.4 Gathering qualitative feedback (difficulty, ambiguity, timing)

Unit 6: Reliability Estimation

- 6.1 Understanding reliability theory (sources of error)
- 6.2 Estimating internal consistency reliability (Cronbach's alpha) – concept and interpretation
- 6.3 Factors affecting reliability estimates
- 6.4 Reliability considerations for different instrument types (tests, scales, observations)
- 6.5 Synthesizing feedback (experts, pilot test, reliability)
- 6.6 Preparing final versions of the instrument and administration protocols

Unit 7: Adaptation of Existing Instruments and Ethical Considerations

- 7.1 Reasons for adapting instruments versus developing new ones
- 7.2 Translation procedures (forward-backward translation for Urdu/English)
- 7.3 Cultural adaptation and validation process
- 7.4 Ethical considerations revisited: informed consent, privacy, data security, reporting, avoiding plagiarism
- 7.5 Ethical review boards in Pakistani universities

Recommended Texts

1. DeVellis, R. F., & Thorpe, C. T. (2021). *Scale Development: Theory and Applications* (5th ed.). Sage Publications. (*Focuses on scale development, highly relevant for attitudes/questionnaires*)
2. Miller, M. D., Linn, R. L., & Gronlund, N. E. (2022). *Measurement and Assessment in Teaching* (12th ed.). Pearson. (*Comprehensive coverage of educational measurement, including test development*)
3. Phelan, C., & Wren, J. (2023). *Exploring and Understanding Assessment in Education: A Practical Guide for Teachers and Trainee Teachers*. Sage Publications Ltd. (*Practical focus, good for classroom instrument development*)

Suggested Readings

1. Wilson, M. (2022). *Constructing Measures: An Item Response Modeling Approach* (2nd ed.). Routledge. (*More advanced, introduces IRM concepts*)
2. Taherdoost, H. (2022). *Questionnaire Design and Scale Development*. CRC Press. (*Very practical guide focused on surveys/scales*)
3. Haladyna, T. M., & Rodriguez, M. C. (2022). *Developing and Validating Test Items* (2nd ed.). Routledge. (*Excellent, detailed resource on writing test items*)

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Department of Education
University of Sargodha

4. Brinkmann, S., & Kvale, S. (2018). *Doing Interviews (3rd ed.)*. Sage Publications. (*Essential for interview protocol development*)
5. Arter, J., & Chappuis, J. (2017). *Creating & Recognizing Quality Rubrics*. Pearson. (*Best practice for rubrics*)

🌐 *Web Resources*

1. **Higher Education Commission (HEC) Pakistan:** (www.hec.gov.pk) - *For national education policy, quality assurance frameworks, and ethical guidelines for research.*
2. **Buros Center for Testing:** (buros.org) - *Mental Measurements Yearbook reviews, testing standards.*
3. **ERIC (Education Resources Information Center):** (eric.ed.gov) - *Database for journal articles, reports, and instruments.*
4. **QuestionPro: Educational Resources:** (questionpro.com/education) - *Articles, guides, templates on survey/questionnaire design.*
5. **SAGE Research Methods Online:** (*Requires institutional subscription - check university library*) - *Massive database of books, journals, case studies, videos on research methods, including instrument development. Look for "SAGE Research Methods: Doing Research Online".*
6. **American Educational Research Association (AERA) Standards:** (aera.net) - *Access the "Standards for Educational and Psychological Testing" (latest edition) - the gold standard.*
7. **International Test Commission (ITC) Guidelines:** (intestcom.org) - *Especially relevant for translating and adapting tests (e.g., ITC Guidelines for Translating and Adapting Tests).*
8. **Jamovi (Free Statistical Software):** (jamovi.org)
9. **PSPP (Free SPSS Alternative):** (www.gnu.org/software/pspp/)
10. **Open Educational Resources (OER) Commons:** (oercommons.org) - *Search for "assessment," "test development," "questionnaire design."*
11. **ResearchGate:** (researchgate.net) - *Access preprints/publications by researchers, often including instruments in appendices.*

Hand
Associate Professor
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University of Sargodha

This course aims to develop students' understanding of ethical principles in research and enhance their professional writing skills for academic and institutional contexts. It covers ethical considerations throughout the research process and trains students in effective, clear, and appropriate academic and professional communication. It explores research integrity, responsible authorship, ethical issues in publication, and effective written communication strategies in various academic and professional formats.

Course Objectives

Upon successful completion of this course, students will be able to:

1. Explain key ethical principles and historical foundations of research ethics.
2. Apply ethical considerations in the design, implementation, and reporting of research.
3. Identify and avoid common ethical violations such as plagiarism and data manipulation.
4. Demonstrate effective professional and academic writing skills.
5. Structure and write various types of academic documents, including proposals and research reports.
6. Develop clear, concise, and coherent written communication tailored to specific academic and professional audiences.
7. Use digital and AI-assisted tools ethically for writing and referencing.
8. Understand publication ethics, including responsibilities in authorship and peer review.

Course Outline

Unit 1: Foundations of Research Ethics

- 1.1 Definition and importance of research ethics
- 1.2 Historical milestones (e.g., Nuremberg Code, Belmont Report)
- 1.3 Core ethical principles: respect, beneficence, justice
- 1.4 The role of Institutional Review Boards (IRBs)/Ethical Review Committees

Unit 2: Ethical Considerations in Research Design

- 2.1 Informed consent and voluntary participation
- 2.2 Risk-benefit assessment
- 2.3 Privacy, confidentiality, and anonymity
- 2.4 Research with vulnerable populations (e.g., children, disabled, minorities)
- 2.5 Plagiarism and data fabrication/falsification

Unit 3: Ethics in Data Collection and Analysis

- 3.1 Ethical treatment of human participants
- 3.2 Transparency and honesty in data collection
- 3.3 Avoiding bias and misrepresentation
- 3.4 Handling sensitive or controversial topics
- 3.5 Data storage, sharing, and disposal ethics

Unit 4: Publication Ethics and Responsibilities

- 4.1 Ethical writing and authorship criteria
- 4.2 Avoiding plagiarism and self-plagiarism

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Department of Education
University of Songkhro

- 4.3 Citation integrity and accurate referencing
- 4.4 Predatory publishing and unethical journals
- 4.5 Duplicate submission and publication

Unit 5: Principles of Professional Academic Writing

- 5.1 Characteristics of professional writing: clarity, conciseness, coherence
- 5.2 Formal vs. informal writing
- 5.3 Tone, voice, and academic register
- 5.4 Avoiding common writing errors
- 5.5 Revising and editing academic texts

Unit 6: Writing Research Reports and Proposals

- 6.1 Structure of a research proposal
- 6.2 Writing the introduction, problem statement, and objectives
- 6.3 Literature review and referencing
- 6.4 Methodology and ethical considerations in proposal writing
- 6.5 Reporting findings with integrity

Unit 7: Communication Skills for Academic and Professional Contexts

- 7.1 Writing effective emails, memos, and cover letters
- 7.2 Preparing abstracts and conference proposals
- 7.3 Writing for publication: journal articles and reports
- 7.4 Collaborative writing and communication with supervisors
- 7.5 Public communication of research findings

Unit 8: Use of Technology and AI in Writing and Research Ethics

- 8.1 Using citation and referencing tools (e.g., Zotero, EndNote, Mendeley)
- 8.2 Using grammar and clarity tools (e.g., Grammarly, Hemingway Editor)
- 8.3 Ethical use of AI in research and writing
- 8.4 Risks of over-reliance on digital tools
- 8.5 Maintaining academic integrity in the digital age

Unit 9: Ethical Issues in Qualitative and Quantitative Research

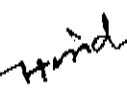
- 9.1 Ethical challenges in qualitative fieldwork and interviews
- 9.2 Managing researcher-participant relationships
- 9.3 Consent and deception in experimental research
- 9.4 Ethical considerations in surveys and online research
- 9.5 Cultural sensitivity and contextual ethics in diverse settings

Unit 10: Plagiarism Detection and Academic Misconduct

- 10.1 Types of plagiarism: direct, mosaic, self-plagiarism
- 10.2 Consequences of academic misconduct
- 10.3 Tools for plagiarism detection (e.g., Turnitin, Grammarly, Quillbot)
- 10.4 Developing ethical writing habits
- 10.5 Institutional policies on academic dishonesty

Recommended Texts

1. Resnik, D. B. (2020). *The ethics of science: An introduction* (2nd ed.). Routledge.

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2. Macrina, F. L. (2022). *Scientific integrity: Text and cases in responsible conduct of research* (5th ed.). Wiley-Blackwell.
3. Oshima, A., & Hogue, A. (2020). *Writing academic English* (5th ed.). Pearson.
4. Alley, M. (2018). *The craft of scientific writing* (4th ed.). Springer.
5. O'Neal-McElrath, T. (2021). *Winning grants step by step: The complete workbook for planning, developing, and writing successful proposals* (5th ed.). Wiley.

Suggested Readings

1. Shamoo, A. E., & Resnik, D. B. (2015). *Responsible conduct of research* (3rd ed.). Oxford University Press.
2. Day, R. A., & Gastel, B. (2016). *How to write and publish a scientific paper* (8th ed.). Cambridge University Press.
3. Weissberg, R., & Buker, S. (1990). *Writing up research: Experimental research report writing for students of English* (2nd ed.). Pearson Education.
4. Gopen, G. D., & Swan, J. A. (1990). *The science of scientific writing*. *American Scientist*, 78(6), 550–558. (Available online)
5. Lipson, C. (2018). *Doing honest work in college: How to prepare citations, avoid plagiarism, and achieve real academic success* (3rd ed.). University of Chicago Press.

Web Resources

1. **Purdue Online Writing Lab (OWL)**
<https://owl.purdue.edu>
Covers academic writing, grammar, citation styles, and plagiarism avoidance.
2. **Office of Research Integrity (ORI) – U.S. Department of Health & Human Services**
<https://ori.hhs.gov>
Guidelines and case studies on research misconduct and ethics.
3. **COPE – Committee on Publication Ethics**
<https://publicationethics.org>
Ethical guidelines for editors, authors, and reviewers.
4. **SAGE Research Methods**
<https://methods.sagepub.com>
Comprehensive tools and videos on research methods and writing.
5. **University of Manchester Academic Phrasebank**
<https://www.phrasebank.manchester.ac.uk>
Useful for academic and professional writing sentence structures.
6. **Turnitin – Academic Integrity and Plagiarism Resources**
<https://www.turnitin.com>
Plagiarism detection and educational resources for writing integrity.
7. **Grammarly Blog**
<https://www.grammarly.com/blog>
Writing tips, grammar advice, and clarity tools.
8. **Hemingway App**
<https://hemingwayapp.com>
Improves readability and clarity of academic writing.
9. **Coursera – Research Ethics and Writing Courses**
<https://www.coursera.org>
Courses from universities on academic integrity and professional writing.

And
Assistant Professor
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University of Gorkhaland

Course Description

With the surge of digital technologies, the web provides researchers both with a tool and an environment to explore the intricacies of daily life. As a site of mediated interactions and interrelationships, the *digital* has evolved from being a space of information to a space of creation. This provides researchers with the new opportunities regarding how, where, and why to conduct social and educational research. This course is designed to train educational researchers while planning and applying innovative research methods for and within digital age. The course will cover both obtrusive (e.g., online surveys and focus groups) and unobtrusive (e.g., internet trace data from emails, websites, blogsites, and social networking sites such as Facebook). The course provides useful insights into the emerging trends in digital technologies that are transforming educational research.

Course Objectives

On the successful completion of the course, students will:

1. Identify and analyze contemporary issues in researching education in the digital age
2. Delineate different types of new research methodologies for the digital age
3. Examine the possibilities and impacts of using new digital research methodologies
4. Compare online research methods with traditional research methods
5. Appraise the affordances and limitations of online research methods
6. Identify and locate available tools and data for online research
7. Explain the ethical implications of various online research methods
8. Identify innovative approaches for analyzing and interpreting data in the digital age.
9. Familiarize with the new concepts about the representation and portrayal of research in the digital age

Course Outline**1: Unit 1: Introduction to Educational Research in the Digital Age**

- 1.1 The evolution of educational research
- 1.2 Key paradigms: quantitative, qualitative, and mixed methods
- 1.3 Characteristics of digital-age research
- 1.4 Challenges and opportunities in digital education research
- 1.5 Ethical considerations in online and digital research

Unit 2: Formulating Research Problems and Questions

- 2.1 Identifying research gaps in digital education
- 2.2 Crafting effective research questions and hypotheses
- 2.3 Aligning research objectives with digital learning contexts
- 2.4 Theoretical frameworks for digital education research
- 2.5 Literature review strategies using digital tools

Unit 3: Research Designs for Digital Education

- 3.1 Experimental and quasi-experimental designs in online settings
- 3.2 Case studies and ethnography in virtual learning environments
- 3.3 Survey research and big data in education

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- 3.4 Action research in technology-enhanced classrooms
- 3.5 Mixed-methods approaches for comprehensive insights

Unit 4: Digital Data Collection Methods

- 4.1 Online surveys and questionnaires (Google Forms, Qualtrics)
- 4.2 Learning analytics and educational data mining
- 4.3 Social media and digital ethnography
- 4.4 Virtual interviews and focus groups (Zoom, Microsoft Teams)
- 4.5 AI and chatbots in educational research

Unit 5: Data Analysis Techniques for Digital Research

- 5.1 Quantitative analysis with SPSS, R, and Python
- 5.2 Qualitative analysis using NVivo and Atlas.ti
- 5.3 Sentiment analysis and text mining in educational data
- 5.4 Visualizing data with Tableau and Power BI
- 5.5 Interpreting and validating digital research findings

Unit 6: Ethical and Legal Issues in Digital Research

- 6.1 Privacy, consent, and anonymity in online research
- 6.2 Data security and compliance (GDPR, FERPA, COPPA)
- 6.3 Bias and algorithmic fairness in AI-driven research
- 6.4 Ethical use of student data in institutional research

Unit 7: Emerging Trends and Innovations in Educational Research

- 7.1 Artificial intelligence and machine learning in education research
- 7.2 Virtual and augmented reality as research tools
- 7.3 Blockchain for credentialing and academic integrity
- 7.4 The role of open educational resources (OER) in research
- 7.5 Future directions in digital education research

Recommended Texts

1. Flick, U. (2020). *An introduction to qualitative research* (6th ed.). SAGE Publications.
2. Saldaña, J. (2021). *The coding manual for qualitative researchers* (4th ed.). SAGE Publications.
3. Savin-Baden, M., & Tombs, G. (2017). *Research methods for education in the digital age*. Bloomsbury.
4. Costa, C., & Condie, J. (Eds.). (2018). *Doing research in and on the digital: Research methods across fields of enquiry*. Routledge.
5. Fielding, N. G., Lee, R. M., & Blank, G. (Eds.). (2017). *The SAGE handbook of online research methods* (2nd ed.). SAGE.
6. Snee, H., Hine, C., Morey, Y., Roberts, S., & Watson, H. (Eds.). (2016). *Digital methods for social science: An interdisciplinary guide to research innovation*. Palgrave Macmillan.

Suggested Readings

1. Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.

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2. Selwyn, N. (2019). *Should robots replace teachers? AI and the future of education*. Polity Press.
3. Cohen, L., Manion, L., & Morrison, K. (2018). *Research methods in education* (8th ed.). Routledge.
4. McMillan, J. H. (2016). *Educational research: Fundamentals for the consumer* (7th ed.). Pearson.
5. Teddlie, C., & Tashakkori, A. (2009). *Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioral sciences*. SAGE Publications.
6. Hamilton, E. R., Rosenberg, J. M., & Akcaoglu, M. (2016). *The Substitution Augmentation Modification Redefinition (SAMR) model: A critical review and suggestions for its use*. *TechTrends*, 60(5), 433–441.

🌐 *Web Resources*

1. ERIC -- Education Resources Information Center. (n.d.). <https://eric.ed.gov>
A comprehensive digital library of education research and information.
2. SAGE Research Methods. (n.d.). <https://methods.sagepub.com>
Provides thousands of resources on research methods across disciplines.
3. Harvard Center on the Developing Child. (n.d.). <https://developingchild.harvard.edu>
Research-based insights with digital-age tools and frameworks.
4. UNESCO -- Education and digital innovation. (n.d.).
<https://www.unesco.org/en/education/digital>
Offers global perspectives on digital education research.
5. Edutopia – Educational research and innovation. (n.d.). <https://www.edutopia.org>
Articles and case studies on digital learning research and strategies.
6. Jisc – Digital Research and Education Technology. (n.d.). <https://www.jisc.ac.uk>
UK-based digital research tools and trends in higher education.
7. International Society for Technology in Education (ISTE). (n.d.). <https://www.iste.org>
Research-based standards and practices for technology in education.
8. Common Sense Education – EdTech reviews and research. (n.d.).
<https://www.commonsense.org/education>
Evaluates digital learning tools and provides classroom resources.
9. ResearchGate. (n.d.). <https://www.researchgate.net>
Global academic research platform for accessing papers and networking.
10. NVivo -- Qualitative data analysis software. (n.d.).
<https://www.qsrinternational.com/nvivo-qualitative-data-analysis-software/home>
Resource hub for learning and applying digital qualitative research methods.

Hamid

Assistant Professor
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University of Sargodha

This course equips future educators with the practical skills and critical understanding necessary to design, conduct, analyze, and interpret small-scale applied research projects within authentic Pakistani educational settings. It emphasizes using research to identify and address real-world classroom, school, and community challenges, fostering evidence-based decision-making and reflective teaching practices aligned with local needs and HEC standards.

Course Objectives

After studying this course, the student will be able to:

1. Distinguish between applied and basic research and articulate the role of applied research in improving educational practice in Pakistan.
2. Conduct systematic literature reviews using relevant databases and sources.
3. Select appropriate qualitative, quantitative, and mixed-methods research designs for specific applied research questions.
4. Develop feasible research proposals, including clear research questions, methodology, data collection plans, and ethical considerations.
5. Apply fundamental data collection techniques (e.g., surveys, interviews, observations, document analysis, and basic tests) ethically and effectively.
6. Perform basic descriptive and inferential statistical analyses (using software) and interpret qualitative data.
7. Critically evaluate the quality, validity, and reliability of applied research studies.
8. Interpret research findings in the context of Pakistani education and derive practical implications.

Course Outline

Unit 1: Introduction to Applied Research in Education

- 1.1 Applied vs. Basic Research
- 1.2 Importance for Teachers and School Improvement
- 1.3 Overview of the Educational Research Process
- 1.4 Identifying Local Educational Problems
- 1.5 Research Ethics (HEC Guidelines)

Unit 2: Identifying Research Problems and Questions

- 2.1 Sources of Research Problems in educational settings
- 2.2 Formulating Focused Research Questions
- 2.3 Developing Research Objectives and Hypotheses
- 2.4 Defining Key Variables (Independent, Dependent, Moderating)

Unit 3: Conducting a Literature Review

- 3.1 Purpose and Process of Literature Review
- 3.2 Searching Databases (ERIC, HEC Digital Library, etc.)
- 3.3 Synthesizing Literature and Identifying Gaps
- 3.4 Avoiding Plagiarism and Using APA 7th Style

Unit 4: Research Paradigms and Approaches

- 4.1 Positivist, Interpretive, and Pragmatic Paradigms

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University of Sargodha

- 4.2 Characteristics of Quantitative, Qualitative, and Mixed Methods Research
- 4.3 Matching research problems to Research Approaches

Unit 5: Quantitative Research Designs

- 5.1 Descriptive and Correlational Surveys
- 5.2 Pre-Experimental Design (One-Group Pretest-Posttest)
- 5.3 Quasi-Experimental Design (Non-equivalent Groups)
- 5.4 Feasibility and Limitations in Local Settings

Unit 6: Qualitative Research Designs

- 6.1 Case Study
- 6.2 Ethnography
- 6.3 Phenomenology
- 6.4 Action Research (Emphasized) and its relevance for school improvement
- 6.5 Strengths and Limitations in Pakistani Context

Unit 7: Mixed Methods Research Design

- 7.1 Rationale for Mixed Methods
- 7.2 Basic Designs: Convergent, Explanatory Sequential, Exploratory Sequential
- 7.3 Implementation Considerations in Resource-Constrained Contexts

Unit 8: Sampling Strategies

- 8.1 Population vs. Sample
- 8.2 Probability Sampling: Simple Random, Stratified, Cluster
- 8.3 Non-Probability Sampling: Purposive, Convenience, Snowball
- 8.4 Determining Sample Size

Unit 9: Data Collection Methods

- 9.1 Designing Questionnaires and Surveys
- 9.2 Observational Techniques
- 9.3 Use of Standardized and Non-Standardized Tests
- 9.4 Designing Semi-Structured Interview Protocols
- 9.5 Conducting Focus Groups
- 9.6 Ensuring Validity, Reliability, and Trustworthiness

Recommended Texts

1. Creswell, J. W., & Creswell, J. D. (2023). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (6th ed.). Sage Publications.
2. Mertler, C. A. (2023). *Action Research: Improving Schools and Empowering Educators* (7th ed.). Sage Publications.
3. Mills, G. E., & Gay, L. R. (2023). *Educational Research: Competencies for Analysis and Applications* (13th ed.). Pearson.
4. Creswell, J. W., & Plano Clark, V. L. (2017). *Designing and conducting mixed methods research* (3rd ed.). SAGE Publications.

Suggested Readings

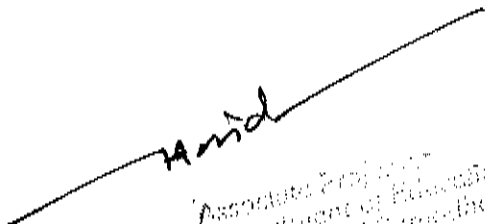
1. Stringer, E. T., & Aragón, A. O. (2021). *Action Research* (5th ed.). Sage Publications.

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2. Pring, R. (2022). *The Philosophy of Educational Research* (4th ed.). Bloomsbury Academic.
3. Zuber-Skerritt, O., & Fletcher, M. (2021). *Action Research for Sustainable Development in a Turbulent World*. Emerald Publishing.
4. Zubairi, A., & Rose, P. (2020). *Researching Education in Pakistan: Expanding the Evidence Base*. Bloomsbury.
5. Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2019). *How to design and evaluate research in education* (10th ed.). McGraw-Hill Education.

🌐 *Web Resources*

1. **Higher Education Commission (HEC) Pakistan:** (www.hec.gov.pk)
 - a. *HEC Digital Library:* (hdl.handle.net/123456789/) - Access journals.
 - b. *HEC Research Ethics Guidelines:* (Search HEC website)
 - c. *National Education Policy documents.*
2. **ERIC (Education Resources Information Center):** (eric.ed.gov) - *Primary database for education literature.*
3. **Pakistani Journals:**
 - a. *Bulletin of Education and Research (BER):* (pu.edu.pk/home/journal/29)
 - b. *Journal of Research and Reflections in Education (JRRE):* (www.ue.edu.pk/jrre)
 - c. *Pakistan Journal of Education (PJE):* (pje.aiou.edu.pk)
4. **SAGE Research Methods Online:** (*Institutional Subscription*) - *Vast resource for methods books, cases, videos.*
5. **Action Research Network:** (actionresearch.net) - *Resources, examples, community.*
 - a. *software.*
6. **Dedoose (Qual):** (www.dedoose.com) - *Freemium online qualitative analysis tool.*
7. **NVivo (Qual):** (www.qsrinternational.com) - *Industry standard (free trial available).*
8. **ResearchGate:** (researchgate.net) - *Access publications, find instruments, connect.*
9. **Google Scholar:** (scholar.google.com) - *Essential search tool.*
10. **RASTA (Research for Social Transformation and Advancement):** (www.rasta.org.pk) - *Pakistani think tank, relevant policy research.*


 Associate Professor
 Department of Education
 University of Sargodha

Specialization 3: Educational Assessment

Specialization 3: Educational Assessment (Select any Six Courses)				
1.	EDUC-6234	Test Development	3(3-0)	<i>Nil</i>
2.	EDUC-6235	Classroom Assessment Strategies	3(3-0)	<i>Nil</i>
3.	EDUC-6236	Alternative Assessment Techniques	3(3-0)	<i>Nil</i>
4.	EDUC-6237	Educational Assessment in the Digital Age	3(3-0)	<i>Nil</i>
5.	EDUC-6238	Data-driven Decision Making in Educational Assessment	3(3-0)	<i>Nil</i>
6.	EDUC-6239	Assessment and Reporting of Students' Learning	3(3-0)	<i>Nil</i>
7.	EDUC-6240	Psychometrics and Standardized Testing	3(3-0)	<i>Nil</i>

Hand

Administrative Unit
Department of Education
University of Botswana

Course Description

This course equips prospective educators with essential knowledge and skills required to develop, administer, and evaluate educational tests. Emphasis is placed on creating high-quality test items, constructing performance assessments, conducting item analysis, and ensuring test fairness, reliability, and validity. The course also covers specialized testing applications including standardized, diagnostic, and computer-adaptive assessments. The science of developing educational and psychological tests and measurement procedures has become highly sophisticated and has developed into such large body of knowledge that it is considered a scientific tests and measurement procedures are studied, specially how to test questions (called items) should be developed, how to select test items, how to transform response to item into numerical scores, how to assess the quality of these scores,, how to interpret these scores, and how to ascertain that the scores are not biased against certain groups of individuals.

Course Objectives

At the end of the course students will be able to;

1. Understand the foundational principles of educational test development.
2. Design a variety of test items aligned with instructional objectives.
3. Apply statistical techniques to evaluate item quality.
4. Ensure fairness, validity, and reliability in tests.
5. Apply the methods learned in theories to improve the test development conceptualize
6. Develop skills for test administration and refinement.
7. Explore emerging trends in test development, including technology-based assessments.

Course Outline**Unit 1: Foundations of Test Development**

- 1.1 Purpose and types of educational tests
- 1.2 Standards for educational and psychological testing
- 1.3 Role of assessment in the teaching-learning cycle
- 1.4 Ethical considerations in test development
- 1.5 Legal aspects of testing (FERPA, ADA compliance)

Unit 2: Planning the Test

- 2.1 Defining test purpose and objectives
- 2.2 Creating test blueprints and specifications
- 2.3 Aligning assessments with learning outcomes
- 2.4 Determining appropriate test length and timing
- 2.5 Selecting item formats (selected vs. constructed response)

Unit 3: Writing Selected-Response Items

- 3.1 Principles of effective multiple-choice questions
- 3.2 Developing true/false and matching items
- 3.3 Constructing high-quality distractors
- 3.4 Avoiding common item-writing flaws
- 3.5 Technology tools for item banking

Unit 4: Constructing Performance Assessments

- 4.1 Designing essay prompts and scoring rubrics
- 4.2 Developing authentic performance tasks

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Associate Professor
Department of Education
University of Georgia

- 4.3 Creating structured observations and checklists
- 4.4 Portfolio assessment development
- 4.5 Oral examination techniques

Unit 5: Test Assembly and Administration

- 5.1 Principles of test organization and sequencing
- 5.2 Creating alternate test forms
- 5.3 Preparing test administration protocols
- 5.4 Accommodations for diverse test-takers
- 5.5 Security measures and cheating prevention

Unit 6: Item Analysis and Test Refinement

- 6.1 Calculating and interpreting item difficulty
- 6.2 Determining item discrimination indices
- 6.3 Distractor effectiveness analysis
- 6.4 Using statistical software for test analysis
- 6.5 Test revision based on empirical data

Unit 7: Establishing Test Quality

- 7.1 Reliability concepts and estimation methods
- 7.2 Validity evidence and validation processes
- 7.3 Standard setting and cut-score determination
- 7.4 Bias detection and fairness reviews
- 7.5 Cross-cultural adaptation of tests

Unit 8: Specialized Test Development

- 8.1 Computer-adaptive test development
- 8.2 Diagnostic assessment construction
- 8.3 Large-scale standardized test development
- 8.4 Classroom assessment techniques
- 8.5 Developing tests for affective domains

Recommended Texts

1. Looek, C., & Scherman, V. (2019). *Educational Assessment in a Time of Reform: Standards and Standard Setting for Excellence in Education*. Routledge.
2. Popham, W. J. (2017). *Classroom assessment: Principles and practice for effective standards-based instruction* (7th ed.). Pearson.
3. McMillan, J. H. (2017). *Classroom assessment: Principles and practice for effective standards-based instruction* (7th ed.). Pearson.
4. Brown, G. T. L., & Harris, L. R. (2016). *Handbook of human and social conditions in assessment*. Routledge. <https://doi.org/10.4324/9781315749136>
5. Kubiszyn, T., & Borich, G. D. (2016). *Educational testing and measurement: A primer* (11th ed.). Wiley.
6. Spector, J. M. (2015). *Handbook of research on educational communications and technology* (4th ed.). Springer.

Suggested Readings

1. Van der Linden, W. J. (Ed.). (2016). *Handbook of item response theory: Volume II: Models*. CRC Press.

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2. Kubiszyn, T., & Borich, G. D. (2016). *Educational testing and measurement: Classroom application and practice* (11th ed.). Wiley.
3. Popham, W. J. (2017). *Classroom assessment: What teachers need to know* (8th ed.). Pearson.
4. Brookhart, S. M. (2013). *How to create and use rubrics for formative assessment and grading*. ASCD.
5. Nitko, A. J., & Brookhart, S. M. (2014). *Educational assessment of students* (6th ed.). Pearson.
6. Downing, S. M. (2006). *Developing objective tests for assessing educational outcomes*. Springer.
7. Linn, R. L., & Miller, M. D. (2005). *Measurement and assessment in teaching* (10th ed.). Pearson.
8. Gronlund, N. E. (2006). *Assessment of student achievement* (8th ed.). Pearson.

🌐 **Web Resources**

1. American Educational Research Association. (2014). *Standards for educational and psychological testing*. <https://www.aera.net/Publications/Books/Standards-for-Educational-and-Psychological-Testing-2014-Edition>
2. APA. (n.d.). *Testing and assessment*. American Psychological Association. <https://www.apa.org/science/programs/testing>
3. National Center for Education Statistics. (n.d.). *Assessment*. U.S. Department of Education. <https://nces.ed.gov/nationsreportcard/>
4. Center for Assessment. (n.d.). *Resources for improving assessment and accountability*. <https://www.nciea.org/resources>
5. ASCD. (n.d.). *Educational leadership: Assessment archives*. <https://www.ascd.org/el/articles?categories=assessment>
6. Edutopia. (n.d.). *Assessment*. George Lucas Educational Foundation. <https://www.edutopia.org/topic/assessment>
7. OECD. (2013). *Synergies for better learning: An international perspective on evaluation and assessment*. <https://www.oecd.org/education/school/synergies-for-better-learning.htm>
8. UNESCO. (n.d.). *Assessment and evaluation in education*. <https://www.unesco.org/en/education/assessment>
9. University of Texas at Austin. (n.d.). *Developing tests and exams*. Faculty Innovation Center. <https://facultyinnovate.utexas.edu/developing-tests-and-exams>
10. Class Central. (n.d.). *Free online courses on assessment and measurement*. <https://www.classcentral.com/search?q=educational+assessment>

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 Assistant Professor
 Department of Education
 University of Maryland

Course Description

This course equips future educators with practical, culturally responsive strategies to design, implement, and evaluate assessments that actively support student learning. Emphasizing formative assessment, it bridges theory with practice to foster data-driven instruction, align with the *Single National Curriculum (SNC)*, and address diverse learner needs in resource-varied settings. It emphasizes strategies that support student learning, including formative and summative assessment techniques, feedback practices, self-assessment, and the use of assessment data to inform instruction. The course promotes ethical, inclusive, and learner-centered assessment practices aligned with national education standards.

Course Objectives

After studying the course, students will be able to:

1. Explain the purpose and principles of classroom assessment.
2. Differentiate between *assessment of*, *for*, and *as* learning.
3. Design varied assessments aligned with SNC learning outcomes and Bloom's Taxonomy.
4. Apply formative assessment techniques (e.g., questioning, feedback, self-assessment) to adjust teaching.
5. Develop culturally appropriate tools (rubrics, checklists, portfolios, quizzes) for diverse subjects/ages.
6. Evaluate student work ethically and provide actionable feedback.
7. Utilize assessment data to inform instruction, grouping, and intervention.
8. Provide constructive feedback to promote student learning.
9. Reflect on their own assessment practices for continuous improvement.
10. Integrate technology (low/high-tech) for efficient assessment.

Course Outline**Unit 1: Introduction to Classroom Assessment**

- 1.1 Purpose, principles (validity, reliability, fairness)
- 1.2 Assessment of, for, as learning
- 1.3 Linkage with national curriculum goals (SNC, HEC standards)
- 1.4 Ethical considerations in assessment

Unit 2: Learning Outcomes & Alignment

- 2.1 Writing SMART objectives
- 2.2 Aligning assessments with SNC competencies
- 2.3 Taxonomies for learning outcomes (Bloom, SOLO)

Unit 3: Types of Assessment

- 3.1 Formative and Summative Assessment
- 3.2 Performance and Authentic Assessment
- 3.3 Observation and Anecdotal Records
- 3.4 Authentic and performance-based assessments
- 3.5 Student Self-Assessment and peer assessment
- 3.6 Technology-Enhanced Assessment

Unit 4: Feedback & Grading Practices

- 4.1 Principles of effective feedback
- 4.2 Grading vs. feedback
- 4.3 Formative feedback techniques

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- 4.4 Reducing grading bias and stigma
- 4.5 Report card comments for parents

Unit 5: Data-Informed Instruction

- 5.1 Analyzing class/student data
- 5.2 Identifying learning gaps and misconceptions
- 5.3 Flexible grouping
- 5.4 Remedial planning
- 5.5 Data-based decision-making

Unit 6: Bias & Fairness in Assessment

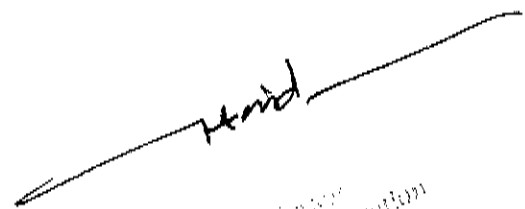
- 6.1 Identifying cultural/socioeconomic bias
- 6.2 Gender sensitivity
- 6.3 Accommodations for disabilities
- 6.4 Accommodating students with diverse needs
- 6.5 Addressing bias in test items
- 6.6 Critical review of SNC materials

Unit 7: Teacher as Reflective Practitioner

- 7.1 Self-evaluation of assessment practices
- 7.2 Action research cycles
- 7.3 Peer feedback on assessments

Unit 8: Future Trends & Course Synthesis

- 8.1 Competency-based assessment
- 8.2 AI and personalized learning assessments
- 8.3 Navigating exam culture vs. holistic learning
- 8.4 Technology-enhanced assessments (digital tools and apps)
- 8.5 Developing an assessment portfolio

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Department of Education
University of Sargodha

Recommended Texts

1. Chappuis, J., et al. (2024). *Understanding School Assessment: A Practical Guide for Pakistani Teachers*. Adapted Edition. Oxford PK.
2. Brookhart, S. M. (2023). *Classroom Assessment Essentials*. ASCD.
3. William, D. (2023). *Embedded Formative Assessment: 3rd Ed.* Solution Tree.
4. McMillan, J. H. (2017). *Classroom assessment: Principles and practice for effective standards-based instruction* (7th ed.). Pearson.
5. Popham, W. J. (2017). *Classroom assessment: What teachers need to know* (8th ed.). Pearson.
6. Brookhart, S. M. (2017). *How to give effective feedback to your students* (2nd ed.). ASCD.

Suggested Readings

1. National Curriculum Council (2023). *Assessment Guidelines for SNC Implementation*. (Free PDF via ncc.gov.pk)
2. Khan, R. (2022). *Assessment Practices in Pakistani Classrooms*. APH Publishing.
3. Nitko, A. J., & Brookhart, S. M. (2014). *Educational assessment of students* (7th ed.). Pearson.

4. Brookhart, S. M. (2013). *How to create and use rubrics for formative assessment and grading*. ASCD.
5. Stiggins, R. J. (2005). *Student-involved assessment for learning* (4th ed.). Pearson.
6. William, D. (2011). *Embedded formative assessment*. Solution Tree Press.
7. Chappuis, J., Stiggins, R. J., Chappuis, S., & Arter, J. A. (2012). *Classroom assessment for student learning: Doing it right - using it well* (2nd ed.). Pearson.
8. Black, P., & William, D. (2006). *Assessment for learning: Putting it into practice*. Open University Press.

🌐 **Web Resources**

1. HEC Pakistan: hec.gov.pk → Assessment Policies & Digital Library
2. Punjab Examination Commission (PEC): pec.edu.pk → Sample papers & marking schemes
3. Teachers' Resource Portal (TRP): trp.org.pk → Free rubrics, lesson plans
4. Khan Academy Urdu: ur.khanacademy.org → Adaptive quizzes
5. Assessment for Learning (AFL) Toolkit: afl.global → Practical strategies
6. SAGE Journals: *Assessment in Education* (Access via HEC Digital Library)
7. Edutopia. (n.d.). *Assessment*. George Lucas Educational Foundation.
<https://www.edutopia.org/topic/assessment>
8. Center for Assessment. (n.d.). *Resources for improving assessment and accountability*.
<https://www.nciea.org/resources>
9. ASCD. (n.d.). *Formative assessment strategies*. <https://www.ascd.org>
10. Teaching Channel. (n.d.). *Assessment videos and resources*.
<https://www.teachingchannel.com>
11. Carnegie Mellon University. (n.d.). *Designing and grading assessments*. Eberly Center for Teaching Excellence. <https://www.cmu.edu/teaching/assessment>
12. University of Texas at Austin. (n.d.). *Developing assessments*. Faculty Innovation Center.
<https://facultyinnovate.utexas.edu/developing-tests-and-exams>
13. Brookings Institution. (n.d.). *Innovative assessment systems*.
<https://www.brookings.edu/topic/education>
14. Education Endowment Foundation. (n.d.). *Feedback and assessment*.
<https://educationendowmentfoundation.org.uk>
15. UNESCO. (n.d.). *Assessment for inclusive and equitable learning*.
<https://www.unesco.org/en/education/assessment>
16. National Council on Measurement in Education (NCME). (n.d.). *Classroom assessment resources*. <https://www.ncme.org>

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Course Description

This course explores a variety of innovative and non-traditional assessment methods that can be used to evaluate student learning and development. Emphasizing practical application and theoretical understanding, the course covers performance-based assessments, portfolios, self-assessment, peer assessment, and other formative and summative approaches. Students will learn to design, implement, and evaluate alternative assessments that provide a more comprehensive and authentic picture of student abilities. Through hands-on projects, case studies, and critical analysis, participants will gain the skills necessary to incorporate alternative assessment techniques into diverse educational settings to enhance student learning and engagement.

Course Objectives

At the end of the course students will be able to;

1. Explore the theoretical foundations and key principles underlying alternative assessment methods.
2. Learn various types of alternative assessments, including performance-based tasks, portfolios, self-assessments, and peer assessments.
3. Assess the validity, reliability, and fairness of different alternative assessment techniques.
4. Apply alternative assessment methods in various educational contexts, adapting them to different subjects, grade levels, and student populations.
5. Develop strategies for analyzing and interpreting the outcomes of alternative assessments to inform instruction and support student learning.
6. Explore ways to use alternative assessments to increase student engagement, motivation, and ownership of their learning.
7. Identify and develop solutions for common challenges and barriers associated with implementing alternative assessments in educational settings

Course Outline**Unit 1: Introduction to Alternative Assessment**

- 1.1 Rethinking Assessment
- 1.2 Linking Assessment and Instruction
- 1.3 Determining Purpose
- 1.4 Selecting Assessment Tasks
- 1.5 Setting Criteria
- 1.6 Ensuring Reliable Scoring
- 1.7 Using Alternative Assessment for Decision Making

Unit 2: Measuring Complex Achievement – Essay Questions

- 2.1 Forms and Uses of Essay Questions
- 2.2 Summary Comparison of Learning Outcomes Measured
- 2.3 Advantages and Limitations of Essay Questions
- 2.4 Suggestions for Constructing Essay Questions
- 2.5 Scoring Criteria
- 2.6 Suggestions for Scoring Essay Questions

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Unit 3: Measuring Complex Achievement – Performance-Based Assessments

- 3.1 Types of Performance-Based Assessment
- 3.2 Advantages and Limitations of Performance Assessments
- 3.3 Suggestions for Constructing Performance Tasks
- 3.4 Performance Criteria
- 3.5 Scoring Rubrics and Rating Scales
- 3.6 Checklists
- 3.7 Student Participation in Rating

Unit 4: Portfolios

- 4.1 What Qualifies as a Portfolio of Student Work?
- 4.2 Potential Strengths and Weaknesses of Portfolios
- 4.3 Purpose of Portfolios
- 4.4 Guidelines for Portfolio Entries
- 4.5 Guidelines and Students' Role in Selection of Portfolio Entries and Self-Evaluation
- 4.6 Evaluation Criteria
- 4.7 Using Portfolios in Instruction and Communication

Unit 5: A Conceptual Framework for Understanding Online Assessment and Measurement

- 5.1 Introduction
- 5.2 Concept of Assessment
- 5.3 Assessment is as Assessment Does
- 5.4 Online Assessment in the Online Learning Environment
- 5.5 Implications of a Paradigm Shift for Online Learning and Assessment
- 5.6 Nature and Context of Online Assessment
- 5.7 Issues, Controversies, Problems

Unit 6: Implementing and Evaluating Alternative Assessments

- 6.1 Overcoming Institutional Resistance to Change
- 6.2 Professional Development for Educators
- 6.3 Pilot Programs and Iterative Design
- 6.4 Quantitative and Qualitative Evaluation of Impact
- 6.5 Policy Advocacy for Assessment Reform

Unit 7: Technology-Enhanced Alternative Assessment

- 7.1 Digital tools for performance and portfolio assessment
- 7.2 Apps and platforms for real-time feedback
- 7.3 Gamified assessment and simulations
- 7.4 Online peer and self-assessment tools
- 7.5 Issues of access, digital divide, and data privacy

Recommended Texts

1. Shepard, L. A., Penuel, W. R., & Pellegrino, J. W. (2018). *Using assessment to support student learning*. ETS Research Report.
2. William, D. (2018). *Embedded formative assessment* (2nd ed.). Solution Tree Press.
3. Leahy, S., & William, D. (2015). *Assessment and learning pocketbook*. Teachers' Pocketbooks.
4. Chappuis, J. (2015). *Seven strategies of assessment for learning* (2nd ed.). Pearson.

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5. Tomlinson, C. A., & Moon, T. R. (2013). *Assessment and student success in a differentiated classroom*. ASCD.

Suggested Readings

1. Andrade, H. L., & Cizek, G. J. (Eds.). (2010). *Handbook of formative assessment*. Routledge.
<https://doi.org/10.4324/9780203888749>
2. Stiggins, R. J. (2008). *Assessment for learning: A key to student motivation and achievement*. ETS Assessment Training Institute.
3. <https://doi.org/10.1002/ets2.12258>
4. Heritage, M. (2010). *Formative assessment: Making it happen in the classroom*. Corwin Press.
5. McDonald, B., & Boud, D. (2003). *The impact of self-assessment on achievement: The effects of self-assessment training on performance in external examinations*. *Assessment in Education: Principles, Policy & Practice*, 10(2), 209–220.

Web Resources

1. **Formative Assessment for Students and Teachers (FAST) SCASS**. (n.d.). *Resources on formative assessment practices*. Council of Chief State School Officers.
<https://www.ccsso.org/project/formative-assessment>
2. **Assessment Tool**. (n.d.). *Digital rubrics and self-assessment templates*. TKI New Zealand Ministry of Education.
<https://assessment.tki.org.nz>
3. **CAST**. (n.d.). *Universal Design for Learning and inclusive assessments*.
<https://www.cast.org>
4. **EdTech Review**. (n.d.). *Digital tools for alternative assessment*.
<https://edtechreview.in>
5. **Australian Curriculum Assessment and Reporting Authority (ACARA)**. (n.d.). *Work samples and assessment support*.
<https://www.australiancurriculum.edu.au/resources/work-samples/>
6. **Visible Learning MetaX**. (n.d.). *John Hattie's database of effective assessment strategies*. <https://www.visiblelearningmetax.com>
7. **Education Endowment Foundation (EEF)**. (n.d.). *Peer and self-assessment strategies and toolkits*.
<https://educationendowmentfoundation.org.uk>
8. **European Commission – Assessment Futures**. (n.d.). *Innovative assessment approaches in the digital age*.
<https://education.ec.europa.eu>
9. **Inside Assessment**. (n.d.). *Videos, rubrics, and feedback templates*.
<https://www.insideassessment.ca>
10. **Common Sense Education**. (n.d.). *Apps and digital tools for alternative assessments*.
<https://www.common sense.org/education/search?contentType=reviews&audiences=teachers&topics=Assessment>

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EDUC: 6237

Educational Assessment in the Digital Age

3(3-0)

Course Description

This course explores the transformation of educational assessment practices in the context of digital learning environments. It covers the use of technology-enhanced assessment tools, online formative and summative evaluations, data analytics for learning, and issues of equity, privacy, and accessibility in digital testing. Students will develop digital literacy in assessment design, implementation, and evaluation using modern platforms. It focuses on the design principles and different forms of online assessment while also considering the strengths and weaknesses of each. It offers guidance for designing and implementing creative assessment practices to assess students' learning in online environments. It emphasizes real-life application of assessment concepts to assess the quality of students' online learning rather than relying on traditional methods of measuring the amount of information they retained

Course Objectives

On the successful completion of the course, students will:

1. Develop competence with the concept and application of online assessment
2. Use a repertoire of assessment tools that are appropriate for conducting online assessment
3. Explain the evolution of educational assessment in the digital context.
4. Develop and implement online assessment and evaluation procedures
5. Use the online environment to their advantage when designing assessment
6. Contextualize assessment and evaluation within online educational environment.
7. Appraise the incorporation of online assessment into a teacher education program
8. Critically evaluate emerging technologies and AI in assessment practices.

Course Outline**Unit 1: Introduction to Digital Assessment**

- 1.1 Evolution of assessment practices in the digital context
- 1.2 Key concepts: e-assessment, online testing, remote proctoring
- 1.3 Differences between traditional and digital assessments
- 1.4 Principles of effective online feedback
- 1.5 Benefits and limitations of digital tools in assessment

Unit 2: Designing Digital Assessments

- 2.1 Key qualities of online assessment
- 2.2 Principles of effective online assessment
- 2.3 Factors to consider in the design of inclusive online assessment
- 2.4 Tools for online quizzes, polls, and surveys (Google Forms, Kahoot, etc.)
- 2.5 Constructing authentic and performance-based digital tasks

Unit 3: The Online Assessment and Evaluation Toolkit

- 3.1 Online rubrics and rubric development
- 3.2 Using student feedback for online assessment
- 3.3 Interactive online assessment
- 3.4 Online assessment using e-portfolios, journals, projects, and group work

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- 3.5 Reflective and self-assessment in online environments
- 3.6 Discussion forums and reflective journals
- 3.7 Peer review and assessment technologies
- 3.8 Internet-based case studies

Unit 4: Issues Involved in Online Assessments

- 4.1 Design, development, and delivery of online assessment and evaluation
- 4.2 Creating a unified assessment system
- 4.3 Accessibility of computer-based training for individuals with disabilities
- 4.4 Delivering computerized assessments safely and securely
- 4.5 User authentication and academic integrity in online assessment
- 4.6 Cheating prevention
- 4.7 Measuring problem-solving and critical thinking in tech-based tasks

Unit 5: Measuring Students' Online Learning and Behavior

- 5.1 Online Cooperative Learning Attitude Scale (OCLAS)
- 5.2 E-Learning Acceptance Measure (EIAM)
- 5.3 Satisfaction in Online Learning: Technology Acceptance Model
- 5.4 Critical Thinking in Online Writings (CTOW)
- 5.5 Student Online Misbehavior (SOM) Scale

Unit 6: Ensuring Equity and Accessibility

- 6.1 Universal Design for digital assessments
- 6.2 Addressing the digital divide in assessment
- 6.3 Accommodations in technology-enhanced testing for students with disabilities
- 6.4 Cultural responsiveness in digital assessment
- 6.5 Privacy and data protection considerations

Unit 7: Implementing Digital Assessment Systems

- 7.1 Institutional readiness for digital assessment
- 7.2 Professional development models for online assessment
- 7.3 Quality assurance in digital assessment
- 7.4 Common challenges teachers face in digital testing
- 7.5 Evaluating the effectiveness of digital assessment systems

Unit 8: Future Trends in Digital Assessment

- 8.1 Artificial Intelligence in assessment (automated feedback, grading, adaptive testing)
- 8.2 Blockchain credentials and digital badges
- 8.3 Augmented/Virtual Reality assessments
- 8.4 Micro-credentialing and competency-based education
- 8.5 Policy implications and global best practices
- 8.6 Digital equity in global online assessments
- 8.7 Ethical use of AI in grading and decision-making

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 Associate Professor
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 University of Saginaw

Recommended Texts

1. Cukurova, M., Luckin, R., & Clark, W. (2020). *Technology-supported evidence-informed assessment*. In OECD (Ed.), *Innovative assessment for the 21st century*. Springer.
2. Catalano, A. J. (2018). *Measurement in distance education: A compendium of*

- instruments, scales, and measures for evaluating online learning*. Routledge
3. Conrad, D., & Openo, J. (2018). *Assessment strategies for online learning: Engagement and authenticity*. AU Press.
 4. Bennett, R. E. (2018). *Validating score meaning for the next generation of assessments*. Routledge. <https://doi.org/10.4324/9781315209616>
 5. Popham, W. J. (2017). *Classroom assessment: What teachers need to know* (8th ed.). Pearson.
 6. McMillan, J. H. (2017). *Classroom assessment: Principles and practice for effective standards-based instruction* (7th ed.). Pearson.

Suggested Readings

1. Salinas, J. (2020). Digital assessment: Concepts and tools. *Open Education Studies*, 2(1), 1–12. <https://doi.org/10.1515/edu-2020-0101>
2. Stiggins, R. J. (2014). *Assessment literacy for educators in a hurry*. Solution Tree Press.
3. William, D. (2011). *Embedded formative assessment*. Solution Tree Press.
4. Orlando, J. (2011). *How to effectively assess online learning*. MAGNA.
5. Heritage, M. (2010). *Formative assessment: Making it happen in the classroom*. Corwin Press.
6. Andrade, H. L., & Cizek, G. J. (Eds.). (2010). *Handbook of formative assessment*. Routledge. <https://doi.org/10.4324/9780203888749>
7. Palloff, R., & Pratt, K. (2009). *Assessing the online learner: Resources and strategies for faculty*. Jossey-Bass.
8. Hricko, M., & Howell, S. L. (2006). *Online assessment and measurement: Foundations and challenges*. INFOSCI.
9. Williams, D. D., Howell, S. L., & Hricko, M. (2006). *Online assessment, measurement, and evaluation: Emerging Practices*. INFOSCI.

🌐 Web Resources

1. International Society for Technology in Education (ISTE). (n.d.). *Digital assessment tools and strategies*. <https://www.iste.org>
2. Edutopia. (n.d.). *Technology and assessment*. George Lucas Educational Foundation. <https://www.edutopia.org/topic/assessment>
3. Common Sense Education. (n.d.). *Top-rated EdTech tools for assessment*. <https://www.commonsense.org/education>
4. UNESCO. (2021). *Digital learning and assessment during COVID-19*. <https://www.unesco.org/en/distance-learning>
5. OECD. (2020). *Innovative assessments for 21st century skills*. <https://www.oecd.org/education/2030-project/>
6. Education Endowment Foundation (EEF). (n.d.). *Feedback strategies and digital learning*. <https://educationendowmentfoundation.org.uk>
7. Class Central. (n.d.). *Free online courses on educational technology and assessment*. <https://www.classcentral.com>
8. Inside Assessment. (n.d.). *Digital rubrics, formative assessment tools, and videos*. <https://www.insideassessment.ca>
9. CAST. (n.d.). *Universal Design for Learning and inclusive assessment*. <https://www.cast.org>

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EDUC: 6238 Data-driven Decision Making in Educational Assessment 3(3-0)**Course Description**

This course explores the critical role of data in informing educational decisions, emphasizing the use of various assessment data to enhance teaching and learning. Students will learn to collect, analyze, and interpret data to make informed decisions that improve educational outcomes. The course covers theoretical frameworks, practical tools, and ethical considerations in data-driven decision making, providing hands-on experience with data analysis software and real-world case studies. This course focuses on how educators can use various types of data—from classroom assessments to standardized testing—to inform instructional strategies, improve student outcomes, and guide school-wide decision making. Participants will learn data collection methods, data interpretation skills, and how to create actionable plans based on evidence. The course emphasizes ethical data use, equity, and continuous improvement.

Course Objectives

On the successful completion of the course, students will:

1. Identify different sources and types of educational data.
2. Understand the principles and importance of data-driven decision making in education.
3. Learn to collect, organize, and analyze various types of educational data.
4. Develop skills in using data analysis software to interpret assessment data.
5. Apply data-driven strategies to improve teaching practices and student outcomes.
6. Explore ethical considerations and best practices in the use of educational data.
7. Communicate findings effectively to diverse stakeholders.

Course Outline**Unit 1: Introduction to Data-Driven Decision Making**

- 1.1 Definition and importance of data-driven instruction
- 1.2 Overview of data-driven decision-making process
- 1.3 Types of educational data (assessment, demographic, behavioral, etc.)
- 1.4 Characteristics of effective data use in schools
- 1.5 Role of educators and leaders in data-informed cultures

Unit 2: Collecting and Organizing Educational Data

- 2.1 Sources of data: classroom, standardized, diagnostic, formative
- 2.2 Tools and systems for data collection (LMS, SIS, surveys)
- 2.3 Quantitative data collection techniques
- 2.4 Qualitative data collection techniques
- 2.5 Ensuring data quality and integrity

Unit 3: Data Analysis Techniques

- 3.1 Descriptive statistics: mean, median, mode, and percentages
- 3.2 Inferential statistics (SPSS, R, Python)
- 3.3 Qualitative data analysis methods (coding, thematic analysis)
- 3.4 Using software for statistical analysis

Unit 4: Interpreting Assessment Data

- 4.1 Making sense of quantitative data
- 4.2 Item-level and student-level performance analysis
- 4.3 Identifying patterns, gaps, and trends

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- 4.4 Interpreting qualitative data
- 4.5 Integrating multiple data sources

Unit 5: Data-Driven Instructional Strategies

- 5.1 Using data to identify student needs
- 5.2 Differentiating instruction based on data
- 5.3 Grouping strategies and personalized learning
- 5.4 Designing interventions for struggling students
- 5.5 Monitoring and adjusting instruction

Unit 6: Evaluating Educational Programs

- 6.1 Program evaluation methods
- 6.2 Using data to assess program effectiveness
- 6.3 Reporting and presenting evaluation results
- 6.4 Using data for school improvement planning

Unit 7: Data Visualization and Communication

- 7.1 Principles of effective data presentation
- 7.2 Data dashboards and visualization tools
- 7.3 Communicating data to students, parents, and stakeholders
- 7.4 Building a transparent and data-informed culture
- 7.5 Writing data reports

Unit 8: Ethical Considerations in Data Use

- 8.1 Student privacy laws and ethical data use (FERPA, GDPR)
- 8.2 Avoiding data misuse and labeling
- 8.3 Promoting equity and inclusion in data use
- 8.4 Recognizing cultural and contextual factors in data interpretation
- 8.5 Addressing biases in data interpretation

Unit 9: Technology Tools for Data-Driven Education

- 9.1 Data tools in LMS (Google Classroom, Canvas, Moodle)
- 9.2 Learning analytics platforms (PowerSchool, Edulastic, Schoology)
- 9.3 AI and predictive analytics in education
- 9.4 Challenges and future directions of data-driven instruction

Recommended Texts

1. Salkind, N. J. (2020). *Statistics for people who (think they) hate statistics* (7th ed.). SAGE Publications.
2. Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.
3. Field, A. (2018). *Discovering statistics using IBM SPSS Statistics* (5th ed.). SAGE Publications.
4. Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2019). *How to design and evaluate research in education* (10th ed.). McGraw-Hill Education.
5. Popham, W. J. (2017). *Classroom assessment: What teachers need to know* (8th ed.). Pearson.
6. Mertler, C. A. (2016). *Classroom-based action research: Revisiting the process as customizable and meaningful*. SAGE Publications.

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 Approved by
 Department of Education
 Curriculum and Assessment

Suggested Readings

1. Schelling, N., & Rubenstein, I. D. (2021). Elementary teachers' perceptions of data-driven decision-making. *Educational Assessment, Evaluation and Accountability*, 33(2), 317-344.
2. Babbie, E. (2020). *The practice of social research* (15th ed.). Cengage Learning.
3. Gill, B., Borden, B. C., & Hallgren, K. (2014). *A conceptual framework for data-driven decision making*. Final Report of Research conducted by Mathematica Policy Research, Princeton, submitted to Bill & Melinda Gates Foundation, Seattle, WA.
4. Kaufman, T. E., Graham, C. R., Picciano, A. G., Popham, J. A., & Wiley, D. (2014). Data-driven decision making in the K-12 classroom. *Handbook of research on educational communications and technology*, 337-346.
5. Punch, K. F. (2014). *Introduction to social research: Quantitative and qualitative approaches* (3rd ed.). SAGE.
6. Mandinach, E. B. (2012). A perfect time for data use: Using data-driven decision making to inform practice. *Educational Psychologist*, 47(2), 71-85.
7. Patton, M. Q. (2015). *Qualitative research & evaluation methods* (4th ed.). SAGE Publications.

🌐 Web Resources

1. Khan Academy. (n.d.). *Statistics and probability*. <https://www.khanacademy.org/math/statistics-probability>
2. UCLA Institute for Digital Research and Education. (n.d.). *SPSS, R, Stata, SAS tutorials*. <https://stats.oarc.ucla.edu>
3. Towards Data Science. (n.d.). *Beginner tutorials on data analysis in Python and R*. <https://towardsdatascience.com>
4. DataCamp. (n.d.). *Online courses on R, Python, and data analysis*. <https://www.datacamp.com>
5. Coursera. (n.d.). *Data analysis and statistical courses for educators*. <https://www.coursera.org>
6. Edutopia. (n.d.). *Using assessment data to guide instruction*. <https://www.edutopia.org/article/using-data-guide-instruction>
7. Harvard Data Wise Project. (n.d.). *A step-by-step process for using data to improve teaching and learning*. <https://datawise.gse.harvard.edu>
8. UNESCO Institute for Statistics. (n.d.). *Education data tools and global statistics*. <http://uis.unesco.org>
9. SPSS Tutorials. (n.d.). *Step-by-step SPSS data analysis*. <https://www.spss-tutorials.com>

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Course Description

This course focuses on the principles, practices, and tools used in reporting student learning outcomes based on various types of assessments. It aims to build educators' capacity to accurately interpret assessment data and communicate students' progress to multiple stakeholders—students, parents, school leaders, and policymakers. The course emphasizes ethical, transparent, and student-centered reporting that promotes learning and well-being. Learners will explore different formats and methods of reporting, including narrative reports, grading systems, standards-based reporting, digital tools, and student-led conferences. Special focus is placed on equity, inclusivity, and the cultural context of reporting in Pakistani schools. Students will also engage in designing reporting tools and practice constructive feedback strategies that support student growth.

Course Objectives

By the end of this course, students will be able to:

1. Understand the importance and purposes of student progress reporting.
2. Analyze and interpret assessment data for reporting purposes.
3. Design appropriate reporting formats and systems for different learning contexts.
4. Communicate assessment results clearly and ethically to all stakeholders.
5. Use feedback to promote student reflection, motivation, and achievement.
6. Apply inclusive and culturally responsive reporting practices.
7. Use assessment data to improve teaching and learning.
8. Develop fair and reliable reporting systems for student progress.
9. Reflect on ethical and inclusive assessment practices.

Course Outline

Unit 1: Introduction to Student Learning Reports

- 1.1. Purpose of reporting in education
- 1.2. Relationship between assessment and reporting
- 1.3. Principles of effective reporting (clarity, fairness, usefulness)
- 1.4. Stakeholders in the reporting process

Unit 2: Data Collection and Interpretation for Reporting

- 2.1. Types of assessment data (quantitative and qualitative)
- 2.2. Summarizing student performance
- 2.3. Use of rubrics and rating scales
- 2.4. Avoiding bias and misinterpretation in reporting

Unit 3: Grading and Marking Systems

- 3.1. Norm-referenced vs. criterion-referenced grading
- 3.2. Letter grades, percentages, GPA, and narrative evaluations

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- 3.3. Standards-based grading systems
- 3.4. Strengths and limitations of different grading approaches

Unit 4: Formats and Tools for Reporting

- 4.1. Report cards and progress reports
- 4.2. Digital reporting systems and Learning Management Systems (LMS)
- 4.3. Student portfolios and learning journals
- 4.4. Use of visuals: charts, graphs, dashboards

Unit 5: Writing Effective Narrative Feedback

- 5.1. Characteristics of quality feedback
- 5.2. Descriptive vs. evaluative feedback
- 5.3. Framing feedback for motivation and improvement
- 5.4. Feedback for early years, primary, and secondary levels

Unit 6: Reporting to Parents and Guardians

- 6.1. Strategies for effective communication
- 6.2. Parent-teacher meetings and student-led conferences
- 6.3. Cultural sensitivity in family engagement
- 6.4. Addressing concerns and providing support

Unit 7: Ethical and Inclusive Reporting Practices

- 7.1. Confidentiality and fairness in reporting
- 7.2. Inclusive reporting for students with diverse needs
- 7.3. Avoiding labeling and fixed mindsets
- 7.4. Legal and policy considerations in reporting

Unit 8: Trends and Innovations in Student Reporting

- 8.1. Competency-based and holistic reporting models
- 8.2. E-portfolios and digital dashboards
- 8.3. Reporting in online and blended learning environments
- 8.4. Global perspectives and best practices

Recommended Texts

1. Brookhart, S. M. (2023). *Performance assessment: Showing what students know and can do*. ASCD.
2. Tomlinson, C. A. (2023). *Everybody's classroom: Differentiating assessment and instruction for diverse learners*. ASCD.
3. Fisher, D., Frey, N., & Hattie, J. (2021). *The distance learning playbook: Grades K–12: Teaching for engagement and impact in any setting*. Corwin Press.
4. Feldman, J. (2019). *Grading for equity: What it is, why it matters, and how it can transform schools and classrooms*. Corwin Press.
5. Reeves, D. B. (2018). *Elements of grading: A guide to effective practice* (2nd ed.). Solution Tree Press.

Suggested Readings

1. Brookhart, S. M. (2017). *How to give effective feedback to your students* (2nd ed.). ASCD.
2. McMillan, J. H. (2018). *Classroom assessment: Principles and practice for effective standards-based instruction* (7th ed.). Pearson.
3. Guskey, T. R., & Jung, L. A. (2012). *Answers to essential questions about standards, assessments, grading, and reporting*. Corwin Press.
4. O'Connor, K. (2018). *A repair kit for grading: 15 fixes for broken grades* (2nd ed.). Solution Tree Press.
5. Stiggins, R. J. (2017). *The perfect assessment system*. ASCD.
6. Tomlinson, C. A., & Moon, T. R. (2013). *Assessment and student success in a differentiated classroom*. ASCD.
7. Brookhart, S. M. (2011). Educational assessment, evaluation and accountability: Commentary and suggestions for future research. *Educational Assessment, Evaluation and Accountability*, 23(1), 5–31. <https://doi.org/10.1007/s11092-010-9103-5>

🌐 Web Resources

1. Edutopia. (n.d.). *Assessment*. George Lucas Educational Foundation. <https://www.edutopia.org/topic/assessment>
2. ASCD. (n.d.). *Assessment and grading*. <https://www.ascd.org/topics/assessment-and-grading>
3. OER Commons. (n.d.). *Assessment and feedback resources*. <https://www.oercommons.org>
4. TeachThought. (n.d.). *Assessment strategies*. <https://www.teachthought.com/category/assessment/>
5. Common Sense Education. (n.d.). *Top tools for formative assessment*. <https://www.commonsense.org/education/top-picks/best-formative-assessment-tools>
6. Higher Education Commission (HEC) Pakistan. (n.d.). *Curriculum of teacher education*. <https://www.hec.gov.pk>
7. Ministry of Federal Education and Professional Training. (n.d.). *Single National Curriculum*. <https://snc.moent.gov.pk>

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Introduction

This course introduces the foundational principles of psychometrics and the development, use, and interpretation of standardized tests in education. Students will explore test construction, reliability, validity, standardization, norm-referenced and criterion-referenced testing, and equity considerations. The course emphasizes critical evaluation of testing practices, statistical techniques, and ethical and cultural issues in large-scale assessments.

Course Objectives

After Studying this course, students will be able to:

1. Define core psychometric concepts (validity, reliability, standardization, norms, measurement scales).
2. Describe the standardized test development process, including item writing, scaling, and norming.
3. Critically evaluate different types of validity evidence (content, criterion, construct) and reliability estimates (internal consistency, test-retest, parallel forms, inter-rater).
4. Calculate and interpret basic descriptive statistics and indices related to test scores (mean, SD, percentiles, stanines, z-scores, T-scores).
5. Interpret various types of test scores and norms (percentile ranks, standard scores, grade equivalents, age equivalents) accurately and ethically.
6. Analyze the impact of standardized testing on students, teachers, curricula, and educational policy in Pakistan (e.g., "teaching to the test").
7. Identify sources of bias and fairness issues in standardized testing (cultural, linguistic, socio-economic, gender) relevant to Pakistan's diverse population.
8. Evaluate the quality and appropriateness of standardized tests for specific purposes within Pakistani educational settings.
9. Understand the ethical principles (HEC, APA, NCME standards) and professional responsibilities in test use, administration, and reporting.
10. Critically discuss contemporary issues and controversies surrounding standardized testing in Pakistan and globally.

Course Outline

Unit 1: Introduction to Psychometrics and Standardized Testing

- 1.1 Definition and scope of psychometrics
- 1.2 Historical evolution and importance in education
- 1.3 Overview of psychological and educational tests
- 1.4 What is a standardized test? Key characteristics (uniform procedures, norms)
- 1.5 Purposes of standardized tests in Pakistan: Selection (MDCAT, NTS jobs), Certification (Board Exams), Accountability (PEC, PISA), Diagnosis, Program Evaluation

Unit 2: Measurement Foundations and Scaling

- 2.1 Levels of measurement (Nominal, Ordinal, Interval, Ratio)
- 2.2 Scales used in standardized tests: Likert, Rating Scales, Performance Scales
- 2.3 Scaling methods: Thurstone, Likert, Guttman Scaling (concepts)
- 2.4 Introduction to Classical Test Theory (CTT): True Score Model ($X = T + E$)

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 About the course content
 Definition of psychometrics
 History of psychometrics

Unit 3: Reliability – Consistency of Measurement

3.1 Defining reliability: Consistency, dependability, measurement error

3.2 Methods for estimating reliability:

- Internal Consistency (Cronbach's Alpha, KR-20/21)
- Test-Retest Reliability
- Parallel/Alternate Forms Reliability
- Inter-Rater/Scorer Reliability

3.3 Standard error of measurement (SEM)

3.4 Factors influencing reliability estimates

3.5 Improving test reliability

Unit 4: Validity – Measuring the Right Construct

4.1 Concept and importance of validity

4.2 Core types of validity evidence:

• Content Validity: Test blueprint, SME judgments, Content Validity Ratio/Index (CVR/CVI)

• Criterion-Related Validity: Predictive Validity, Concurrent Validity (correlation coefficients)

• Construct Validity: Convergent/Discriminant evidence, Factor Analysis (conceptual intro), Hypothesis testing

• Face Validity (and its limitations)

4.3 Validation processes

4.4 Threats to validity

4.5 Validity vs. reliability

Unit 5: The Standardized Test Development Process

5.1 Standardized test characteristics

5.2 Norm-referenced vs. criterion-referenced testing

5.3 Developing detailed test specifications (blueprint)

5.4 Test standardization process

5.5 Item writing, review, and revision (linking to Instrument Development course)

5.6 Item Response Theory (IRT) vs. Classical Test Theory (CTT) – Basic comparison

5.7 Field testing and item analysis (Difficulty, Discrimination, Distractor analysis)

Unit 6: Types of Standardized Tests I – Cognitive Abilities

6.1 Intelligence Tests (IQ Tests): Theories (e.g., CHC model), major tests (e.g., WASI, Raven's), controversies, cultural bias concerns in Pakistan

6.2 Aptitude Tests (e.g., SAT, GAT-General by NTS): Predicting future performance

6.3 Achievement Tests: Measuring learned knowledge/skills (e.g., PEC exams, Board Exams, international assessments like PISA/TIMSS)

Unit 7: Types of Standardized Tests II – Affective and Other Domains

7.1 Personality Inventories (e.g., MMPI, Big Five measures): Uses and cautions

7.2 Interest Inventories (e.g., Strong, Holland codes): Career guidance applications

7.3 Diagnostic Tests (e.g., for learning disabilities): Identification and intervention planning

7.4 State/Trait Anxiety Scales

7.5 Defining test bias and fairness (statistical vs. social conceptions)

7.6 Sources of bias: Cultural, linguistic, socio-economic, gender, religious

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Unit 8: Test Administration and Scoring

- 8.1 Importance of standardized procedures
- 8.2 Training test administrators and proctors
- 8.3 Scoring, scaling, and equating
- 8.4 High-stakes testing and accountability
- 8.5 Scoring methods: Machine scoring, hand scoring, rubric-based scoring
- 8.6 Ensuring scoring accuracy and reliability

Unit 9: Interpreting Test Scores

- 9.1 Raw scores vs. Derived scores
- 9.2 Frequency distributions, Mean, Median, Mode, Standard Deviation (SD)
- 9.3 The Normal Curve: Properties and importance in testing
- 9.4 Percentiles and Percentile Ranks (PR)
- 9.5 Standard Scores: z-scores, T-scores, Stanines
- 9.6 Grade Equivalents (GEs) and Age Equivalents (AEs): Uses, limitations, and common misinterpretations
- 9.7 Communicating test results ethically to stakeholders (parents, teachers, students)

Latest Suggested Books & Resources:

Core Textbooks:

1. Furr, R. M., & Bacharach, V. R. (2023). *Psychometrics: An Introduction (4th ed.)*. Sage Publications
2. Cohen, R. J., Schneider, W. J., & Tobin, R. M. (2023). *Psychological Testing and Assessment: An Introduction to Tests and Measurement (10th ed.)*. McGraw Hill.
3. Salkind, N. J. (2023). *Tests & measurement for people who (think they) hate tests & measurement (4th ed.)*. SAGE Publications.
4. Cohen, R. J., Swerdlik, M. E., & Sturman, E. D. (2018). *Psychological testing and assessment: An introduction to tests and measurement (9th ed.)*. McGraw-Hill Education.
5. Gregory, R. J. (2017). *Psychological testing: History, principles, and applications (7th ed.)*. Pearson.
6. Nitko, A. J., & Brookhart, S. M. (2014). *Educational assessment of students (7th ed.)*. Pearson.

Supplementary Books:

1. Downing, S. M., & Haladyna, T. M. (Eds.). (2023). *Handbook of Test Development (2nd ed.)*. Routledge.
2. Reynolds, C. R., Livingston, R. B., & Willson, V. (2023). *Measurement and Assessment in Education (11th ed.)*. Pearson.
3. Sireci, S. G., & Faulkner-Bond, M. (2023). *Validity: Foundational Issues and Statistical Methods*. Routledge.
4. Downing, S. M., & Haladyna, T. M. (Eds.). (2006). *Handbook of test development*. Routledge. <https://doi.org/10.4324/9781315045402>
5. McMillan, J. H. (2017). *Classroom assessment: Principles and practice for effective standards-based instruction (7th ed.)*. Pearson.
6. Linn, R. L., & Gronlund, N. E. (2000). *Measurement and assessment in teaching (8th ed.)*. Prentice Hall.

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 Department of Education
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7. Crocker, L., & Algina, J. (2008). *Introduction to classical and modern test theory*. Cengage Learning.

🌐 *Web Resources*

1. Education (NCME). (n.d.). *Resources for educational measurement professionals*. <https://www.ncme.org>
2. Educational Testing Service (ETS). (n.d.). *Research and development*. <https://www.ets.org/research>
3. Buros Center for Testing. (n.d.). *Mental Measurements Yearbook and test reviews*. <https://buros.org>
4. American Psychological Association (APA). (n.d.). *Testing and assessment*. <https://www.apa.org/science/programs/testing/>
5. Edutopia. (n.d.). *Assessment strategies and insights*. <https://www.edutopia.org/topic/assessment>
6. OECD. (n.d.). *Programme for International Student Assessment (PISA)*. <https://www.oecd.org/pisa/>
7. UNESCO Institute for Statistics. (n.d.). *Education data and international assessments*. <http://uis.unesco.org>
8. Khan Academy. (n.d.). *Standardized test preparation and statistics*. <https://www.khanacademy.org>
9. StatTrek. (n.d.). *Statistics tutorial and test interpretation tools*. <https://stattrek.com>
10. Center for Assessment. (n.d.). *Improving assessment and accountability systems*. <https://www.nciea.org>

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Specialization 4: Educational Leadership and Management

Specialization 4: Educational Leadership and Management (Select any Six Courses)				
1.	EDUC-6241	School Organization and Management	3(3-0)	<i>Nil</i>
2.	EDUC-6242	Foundations of Educational Leadership	3(3-0)	<i>Nil</i>
3.	EDUC-6243	Educational Laws and Policies	3(3-0)	<i>Nil</i>
4.	EDUC-6244	Educational Planning & Financing	3(3-0)	<i>Nil</i>
5.	EDUC-6245	Human Resource Management in Education	3(3-0)	<i>Nil</i>
6.	EDUC-6246	Human Relations in Schools	3(3-0)	<i>Nil</i>
7.	EDUC-6247	Financial Management for School Leaders	3(3-0)	<i>Nil</i>

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EDUC-6241

School Organization and Management

3(3-0)

Course Description

This course aims to equip future educators with the essential principles, structures, and functions of school organization and management. This course provides a foundational understanding of the principles, theories, and practices related to the effective organization and management of schools. It focuses on the structure and functioning of educational institutions, leadership roles, administrative processes, policy implementation, school improvement planning, and the management of resources. Emphasis is placed on fostering inclusive, participatory, and efficient school environments that enhance teaching and learning outcomes.

Course Objectives

By the end of the course, students will be able to:

1. Understand the fundamental concepts and theories of school organization and management.
2. Analyze the roles and responsibilities of school leaders and administrators.
3. Evaluate organizational structures of schools in Pakistan.
4. Develop skills in planning, time management, and school budgeting.
5. Implement effective school discipline, communication, and community relations strategies.
6. Apply modern management techniques in school settings.

Course Outline**Unit 1: Introduction to School Organization and Management**

- 1.1 The Concept and Nature of School Organization
- 1.2 Objectives and scope of educational organization
- 1.3 Types of school organizations (public, private, community-based, etc.)
- 1.4 Principles of School Organization
- 1.5 Importance of Effective School Management for Educational Outcomes
- 1.6 Role of School Management Committees (SMCs) and School Councils

Unit 2: Principles and Theories of Management

- 2.1 Meaning and scope of educational management
- 2.2 Principles of management in education
- 2.3 Classical, Human Relations, and Modern management theories
- 2.4 Management by objectives (MBO)
- 2.5 Educational leadership vs. management

Unit 3: School as a Social System

- 3.1 Social Structure and Roles
- 3.2 Norms, Values, and Culture
- 3.3 Role of the School in Community Development
- 3.4 Building school-community partnerships
- 3.5 Interaction and communication patterns

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Unit 4: Educational Administration and Leadership

- 4.1 Process of Educational Planning and Decision Making
- 4.2 Leadership Styles
- 4.3 Supervision and Staff Development
- 4.4 School Discipline and Student Management
- 4.5 Models of change (Lewin's, Kotter's, Fullan's)
- 4.6 Leading innovation and reforms
- 4.7 Dealing with resistance to change

Unit 5: Planning in Schools

- 5.1 Importance of planning in school management
- 5.2 School development plans (SDPs)
- 5.3 Strategic and Operational Planning
- 5.4 Time-table and school calendar management
- 5.5 Crisis management in schools
- 5.6 Continuous school improvement planning

Unit 6: Human Resource Management in Education

- 6.1 Teacher recruitment, retention, and deployment
- 6.2 Staff development and professional learning communities (PLCs)
- 6.3 Performance appraisal and motivation
- 6.4 Managing teacher workload and well-being
- 6.5 Conflict resolution and staff relations
- 6.6 Sustainable Practices in Resource Utilization

Unit 7: School Climate, Culture, and Discipline

- 7.1 Characteristics of a positive school climate
- 7.2 Developing school culture and values
- 7.3 Student behavior management and discipline policies
- 7.4 Promoting equity, diversity, and inclusion
- 7.5 Strategies for bullying prevention and safety
- 7.6 Anti-discrimination and equity measures

Unit 8: Use of Technology in School Management

- 8.1 Digital Tools for Administrative Efficiency
- 8.2 Use of ICT in administrative tasks (attendance, records, scheduling)
- 8.3 School Management Information Systems (SMIS)
- 8.4 Communication and Collaboration Technologies
- 8.5 Challenges in digital adoption and cybersecurity concerns

Recommended Texts

1. Memon, G. R. & Bana, Z. (2022). *Educational Leadership and Management*. Karachi: Oxford University Press Pakistan.
2. Bush, T. (2020). *Theories of Educational Leadership and Management* (5th ed.). SAGE Publications.
3. Lunenburg, F. C., & Ornstein, A. C. (2021). *Educational Administration: Concepts and Practices* (7th ed.). Cengage Learning.
4. Khan, N. A. (2021). *School Management and Administration in Pakistan*. Lahore: Urdu Bazar Publications.

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 Director, Department of Education
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5. Owens, R. G., & Valesky, T. C. (2014). *Organizational behavior in education: Leadership and school reform* (11th ed.). Pearson.

Suggested Readings

1. Fullan, M. (2014). *The principal: Three keys to maximizing impact*. Jossey-Bass.
2. Hoy, W. K., & Miskel, C. G. (2013). *Educational administration: Theory, research, and practice* (9th ed.). McGraw-Hill Education.
3. Khan, M. S., & Iqbal, M. Z. (2012). *Educational administration and school organization in Pakistan*. Azceem Academy.
4. Bush, T. (2011). *Theories of educational leadership and management* (4th ed.). SAGE Publications.
5. Lunenburg, F. C., & Ornstein, A. C. (2011). *Educational administration: Concepts and practices* (6th ed.). Wadsworth.
6. Daresh, J. C. (2006). *Beginning the principalship: A practical guide for new school leaders* (3rd ed.). Corwin Press.
7. UNESCO. (2009). *School leadership: A key to improved learning*. International Institute for Educational Planning.
8. Sergiovanni, T. J. (2009). *The principalship: A reflective practice perspective* (6th ed.). Pearson.

Web Resources

1. National Education Management Information System (NEMIS): <http://library.aepam.edu.pk>
2. UNESCO Pakistan – Education Sector: <https://en.unesco.org/countries/pakistan>
3. Ministry of Federal Education and Professional Training. (n.d.). *Policies and reports*. Government of Pakistan. <https://www.mofept.gov.pk>
4. UNESCO International Institute for Educational Planning. (n.d.). *Educational leadership and management resources*. <https://www.iiep.unesco.org>
5. National Association of Elementary School Principals (NAESP). (n.d.). *Leadership resources*. <https://www.naesp.org>
6. National College for Education Leadership (Pakistan). (n.d.). *Leadership development initiatives*. <https://ncels.pk>
7. ASCD. (n.d.). *School improvement and management strategies*. <https://www.ascd.org>
8. ERIC – Education Resources Information Center. (n.d.). *School leadership and organization articles*. <https://eric.ed.gov>
9. OECD Education. (n.d.). *School leadership for learning*. <https://www.oecd.org/education>
10. Edutopia. (n.d.). *School leadership and management*. <https://www.edutopia.org/topic/school-leadership>
11. The Wallace Foundation. (n.d.). *Effective school leadership research and tools*. <https://www.wallacefoundation.org>

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EDUC-6242

Foundations of Educational Leadership

3(3-0)

Course Description

This course introduces students to the fundamental concepts, theories, and practices of educational leadership. It examines the roles and responsibilities of educational leaders and explores how leadership influences school improvement, teaching quality, and student outcomes, with a particular focus on the Pakistani context.

Course Objectives

By the end of the course, students will be able to:

1. Define the concept and significance of educational leadership.
2. Analyze key theories and models of leadership.
3. Understand the characteristics and styles of effective school leaders.
4. Examine the ethical and cultural dimensions of leadership in education.
5. Explore the role of leadership in school improvement and educational reform.
6. Critically evaluate leadership practices in Pakistani schools.

Course Outlines**Unit 1: Introduction to Educational Leadership**

- 1.1 Definition and importance of leadership in education
- 1.2 Historical Perspectives and Evolution of Educational Leadership
- 1.3 Leadership vs. authority and power
- 1.4 Leadership vs Management in Education
- 1.5 Goals and challenges of educational leadership in the 21st century

Unit 2: Major Theories of Leadership

- 2.1 Trait Theory
- 2.2 Behavioral Theory
- 2.3 Contingency and situational theories
- 2.4 Transformational and Transactional Leadership Theories
- 2.5 Instructional leadership

Unit 3: Transformational and Instructional Leadership

- 3.1 Strategic planning and vision development
- 3.2 Focus on Teaching and Learning
- 3.3 Professional Development and Capacity Building
- 3.4 Leadership in curriculum planning, supervision, and evaluation
- 3.5 Student-centered leadership
- 3.6 Professional standards for educational leaders

Unit 4: Leadership Styles in Schools

- 4.1 Types of Leadership Styles - authoritative, democratic, transformational, transactional, and laissez-faire.
- 4.2 Impact on School Environment and Performance
- 4.3 Contextual Application of Leadership Styles

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Unit 5: Ethical and Moral Dimensions of Leadership

- 5.1 Principles of Ethical Leadership
- 5.2 Moral Responsibilities of School Leaders
- 5.1 Ethical Dilemmas and Leadership Decision-Making

Unit 6: Gender and Cultural Considerations in Leadership

- 1.1 Understanding equity, diversity, and inclusion in education
- 1.2 Gender Roles and Leadership Opportunities in Education
- 1.3 Culturally responsive leadership
- 1.4 Cultural Diversity and Inclusive Leadership
- 1.5 Promoting Equity and Social Justice in Schools

Unit 7: Leadership for Inclusive and Equitable Education

- 7.1 Understanding Inclusion and Equity in Education
- 7.2 Creating Inclusive School Cultures
- 7.3 Policy Implementation and Advocacy for Equity

Unit 8 Educational Leadership in Pakistan: Policies and Challenges

- 8.1 Overview of Educational Leadership Policies in Pakistan
- 8.2 Role of educational leaders in policy implementation
- 8.4 Legal responsibilities of school leaders (e.g., child protection, labor laws)
- 8.4 Challenges in Educational Leadership
- 8.5 Reforming Educational Leadership for Improved Outcomes

Unit 9: Emerging Trends in Educational Leadership

- 9.1 Distributed and shared leadership models
- 9.2 Role of technology in educational leadership
- 9.3 Leadership in crisis situations (e.g., COVID-19)
- 9.4 Global leadership competencies for 21st-century schools

Recommended Texts

1. Northouse, P. G. (2022). *Leadership: Theory and Practice* (9th Ed.). SAGE Publications.
2. Khan, N. A. (2021). *Educational Leadership in Pakistan: Theory and Practice*. Lahore: National Book Foundation.
3. Northouse, P. G. (2021). *Leadership: Theory and practice* (9th ed.). SAGE Publications.
4. Leithwood, K., Harris, A., & Hopkins, D. (2021). *Seven Strong Claims about Successful School Leadership*. London: National College for School Leadership.
5. Bush, T. (2020). *Theories of Educational Leadership and Management* (5th Ed.). SAGE Publications.
6. Bush, T. (2020). *Theories of educational leadership and management* (5th ed.). SAGE Publications.

Suggested Readings

1. Robinson, V. M. J. (2019). *Student-Centered Leadership*. Jossey-Bass.
2. Day, C., & Sammons, P. (2016). *Successful school leadership*. Education Development Trust.
3. Fullan, M. (2014). *The principal: Three keys to maximizing impact*. Jossey-Bass.

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4. DuFour, R., & Fullan, M. (2013). *Cultures built to last: Systemic PLCs at work*. Solution Tree Press.
5. Hoy, W. K., & Miskel, C. G. (2013). *Educational administration: Theory, research, and practice* (9th ed.). McGraw-Hill.
6. Leithwood, K., Harris, A., & Hopkins, D. (2020). *Seven strong claims about successful school leadership*. *School Leadership & Management*, 40(1), 5–22.

🌐 **Web Resources**

1. The Wallace Foundation. (n.d.). *School leadership*. <https://www.wallacefoundation.org/priorities/pages/school-leadership.aspx>
2. UNESCO International Institute for Educational Planning (IIEP). (n.d.). *Leadership and governance*. <https://www.iiep.unesco.org>
3. National Policy Board for Educational Administration (NPBEA). (n.d.). *Professional Standards for Educational Leaders (PSEL)*. <https://www.npbca.org/psel/>
4. Edutopia. (n.d.). *School leadership strategies and tools*. <https://www.edutopia.org/topic/school-leadership>
5. Education Development Trust. (n.d.). *School leadership research*. <https://www.educationdevelopmenttrust.com>
6. OECD Education. (n.d.). *School leadership policy and practice*. <https://www.oecd.org/education>
7. Harvard Graduate School of Education. (n.d.). *School leadership resources*. <https://www.gse.harvard.edu>
8. ERIC – Education Resources Information Center. (n.d.). *Research on educational leadership*. <https://eric.ed.gov>
9. ASCD. (n.d.). *Leadership and management in schools*. <https://www.ascd.org>
10. Global School Leaders. (n.d.). *Developing leadership in under-resourced schools*. <https://www.globalschoolleaders.org>
11. British Council Pakistan – Leadership Development in Schools <https://www.britishcouncil.pk/programmes/education/school-leadership>
12. UNESCO Pakistan – Education Policy Resources <https://en.unesco.org/countries/pakistan>

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 Associate Professor
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EDUC-6243**Educational Laws and Policies****3(3-0)****Course Description**

This course provides students with foundational knowledge of the legal and policy frameworks that govern the education system in Pakistan. It aims to develop an understanding of key educational laws, rights, and responsibilities of stakeholders, national and provincial policy documents, and the role of various institutions in policymaking and implementation. Special emphasis is placed on recent educational reforms, constitutional provisions, and international commitments.

Course Objectives

By the end of this course, students will be able to:

1. Understand the constitutional and legal framework of Education in Pakistan.
2. Explore the roles of federal and provincial education departments.
3. Critically evaluate key educational laws such as the Right to Education and the HEC Ordinance.
4. Interpret education-related human rights in national and international contexts.
5. Advocate for equity, inclusion, and quality in education through legal and policy frameworks.

Course Outline**Unit 1: Introduction to Educational Laws and Policies**

- 1.1 Definition and scope of educational law
- 1.2 Relationship between law, policy, and education
- 1.3 Importance of legal literacy in education
- 1.4 Sources of educational law (constitution, legislation, case law, policy)
- 1.5 Objectives and characteristics of sound educational policy
- 1.6 Education as a fundamental right (Article 25-A of the Constitution of Pakistan)

Unit 2: Constitution of Pakistan and Education

- 2.1 Articles related to education (Art. 25-A, 37, 38)
- 2.2 Federal vs. provincial roles in education after the 18th Amendment
- 2.3 Fundamental rights, freedom of religion, and language in education
- 2.4 Legal obligations of the state and private institutions

Unit 3: National Education Policies and Strategic Plans

- 3.1 Overview of key national education policies (1947-2023)
- 3.2 National Education Policy 2009 and National Curriculum Frameworks
- 3.3 National Education Policy 2021 draft and ongoing reforms
- 3.4 Single National Curriculum (SNC) and its implications
- 3.5 Implementation challenges in policy enforcement
- 3.6 Trends and future directions in educational policymaking

Unit 4: International Commitments and Human Rights Instruments

- 4.1 Universal Declaration of Human Rights (UDHR) and Right to Education
- 4.2 Sustainable Development Goal 4 (SDG-4) – Quality Education
- 4.3 Education for All (EFA) and UNESCO's role
- 4.4 Gender equality and inclusive education policies
- 4.5 International obligations and national compliance

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 Director, Institute of Education
 University of Education, Lahore

Unit 5: Legal Responsibilities and Rights in Educational Settings

- 5.1 Teacher rights and responsibilities
- 5.2 Student rights, discipline, and due process
- 5.3 School safety laws and corporal punishment bans
- 5.4 Child protection and reporting obligations
- 5.5 Parental rights and legal obligations
- 5.6 Policies and legal provisions for special/inclusive education

Unit 6: Education Departments and Regulatory Bodies

- 6.1 Role of the Ministry of Federal Education
- 6.2 Role of Higher Education Commission (HEC)
- 6.3 Provincial Education Departments and Curriculum Bureaus
- 6.4 Pakistan Education Statistics and NEMIS
- 6.5 Private Educational Institutions Regulatory Authorities (PEIRA & provincial bodies)

Unit 7: Legal Issues in Teacher Education and Professional Practice

- 7.1 Legal standards in teacher certification and licensing
- 7.2 Teacher evaluation policies and accountability
- 7.3 Contracts, tenure, and termination procedures
- 7.4 Teacher unions and legal rights
- 7.5 Health, safety, and anti-harassment regulations in schools
- 7.6 Professional ethics, misconduct, and disciplinary actions

Unit 8: Leave Rules

- 8.1 Definition and purpose of leave
- 8.2 Importance of regulated leave policies in education
- 8.3 Types of Leave
 - 8.3.1 Casual Leave (CL)
 - 8.3.2 Earned Leave (EL)
 - 8.3.3 Medical Leave
 - 8.3.4 Maternity Leave
 - 8.3.5 Paternity Leave
 - 8.3.6 Study Leave
 - 8.3.7 Leave Without Pay (LWP)
 - 8.3.8 Special Leave
 - 8.3.9 Hajj Leave
 - 8.3.10 Umrah Leave
 - 8.3.11 Extraordinary Leave
 - 8.3.12 Quarantine Leave (in special cases)
 - 8.3.13 Adoption Leave (where applicable)
 - 8.3.14 Bereavement Leave
 - 8.3.15 Disability Leave (in case of long-term illness or injury)
- 8.4 Leave application process and administrative responsibilities
- 8.5 Administrative and legal implications of leave misuse or denial

Unit 9: Laws Related to School Management and Student Rights

- 9.1 School registration and licensing requirements
- 9.2 Corporal punishment bans (Federal and Provincial laws)
- 9.3 Child protection laws (e.g., Zainab Alert Act 2020)

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 Assistant Professor
 Department of Education
 University of Gujrat

9.4 Licensing and regulation of private institutions

9.5 Legal obligations for school safety, attendance, and student discipline

Recommended Texts

1. Iqbal, M. (2023). *Education Law and Policy in Pakistan*. Lahore: Majeed Publishers.
2. UNESCO (2023). *Global Education Monitoring Report – Pakistan Chapter*.
3. Rahman, T. (2021). *Language and Politics in Pakistan*. Oxford University Press.
4. Hoodbhoy, P. (2022). *Education Reform in Pakistan: Challenges and Prospects*.
5. Saeed, K. (2020). *Education Policies in Pakistan: A Critical Analysis*.
6. Glanzer, P. L., Hill, J. C., & Ream, T. C. (2020). *Law and ethics in educational leadership*. Routledge.

Suggested Readings

1. Richards, J., Ahmed, M., & Islam, S. (2024). *The political economy of education in South Asia: Pakistan chapter*. National Book Foundation/Ministry of Education, Pakistan.
2. Bauman, A. M., Markelz, A. M., Nagro, S. A., Monnin, K., & Bateman, D. F. (2023). *The essentials of special education advocacy*. Rowman & Littlefield Publishers.
3. Siddiqui, S. (2021). *Education policies in Pakistan* (2nd ed.). Oxford University Press Pakistan.
4. James, B. (2020). *Education policy and the law: Cases and commentary* (2nd ed., 2020–2024 update). Vandephas Publishing LLC.
5. Imran, M. (2019). *Educational laws in Pakistan: Theory and practice*. Ilmi Kitab Khana.
6. Hussain, M. A. (2018). *Legal and ethical dimensions of education*. Azeem Academy Publishers.
7. Shami, P. A., & Hussain, K. S. (2017). *Development of education in Pakistan*. National Book Foundation.

Web Resources

1. **Ministry of Federal Education and Professional Training**
<http://www.mofept.gov.pk>
 - o Laws, policies, and notifications related to federal education in Pakistan.
2. **Pakistan Law Site**
<https://www.pakistanlawsite.com> (*subscription required*)
 - o Database of Pakistani laws including education acts, case law, and regulations.
3. **UNESCO Right to Education Portal**
<https://www.right-to-education.org>
 - o Global resources on education laws, conventions, and international frameworks.
4. **Sindh Education and Literacy Department**
<https://www.sindheducation.gov.pk>
 - o Provincial education legislation and rules.
5. **Punjab School Education Department**
<https://schools.punjab.gov.pk>
 - o Rules on leave, discipline, and school operations in Punjab.
6. **Higher Education Commission (HEC) Pakistan**
<https://www.hec.gov.pk>
 - o Policies on teacher training, curriculum, and regulatory functions.

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University of Sargodha

7. **Right to Education Pakistan**
<https://www.rtepakistan.org>
 - Civil society initiative tracking implementation of Article 25-A.
 8. **Legal Literacy Project – Pakistan**
<https://www.llp.org.pk>
 - Resources for teachers, students, and administrators on legal awareness.
 9. **UNICEF Pakistan - Education**
<https://www.unicef.org/pakistan/education>
 - Advocacy, legal frameworks, and inclusive education reports.
 10. **Courting the Law – Education Law in Pakistan**
<https://courtingthelaw.com>
- Articles, policy briefs, and legal commentaries related to education law.

Harid

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Course Description

This course intends to articulate an understanding of basic concepts and themes related to planning and financing in general and in particular in education. The course introduces students to the fundamental concepts of educational planning and financial management within the context of Pakistan's education system. The course explores the processes of designing, implementing, and evaluating educational policies and programs while ensuring efficient resource allocation. Students will examine key principles of budgeting, funding models, and cost-effectiveness in education, with a focus on challenges such as equity, access, and sustainability.

Course Outcomes

After completing this course, students will be able to:

1. Explain the process and types of Planning into various stages
2. Articulate an understanding of social and developmental factors and indicators of educational planning
3. Assess the priorities in education
4. Forecast the demand for education of different kinds, and estimate the future stock of students in different educational sectors to ensure that
5. adequate educational resources, teachers, buildings, equipment's etc. are
6. available at the right time
7. Describe the formal planning process.
8. Differentiate between strategic and operational planning.
9. Analyze different components of strategic planning and strategic Management.
10. Enlist the Sources of Educational Financing.

Course Outline**Unit 1: Introduction to Planning and Educational Planning**

- 1.1 Concepts of Educational Planning
- 1.2 Objectives and importance of planning in education
- 1.3 Objectives of the Plan
- 1.4 Planning for Planning
- 1.5 Education Ministry as a planning organization
- 1.6 Types of educational planning: strategic, tactical, operational, contingency

Unit 2: Education Planning Process: Stages for Planning

- 2.1 Pre-planning Stage
- 2.2 Formulation of Objectives Planning Stage
- 2.3 Plan Formulation Stage
- 2.4 Plan Implementation Stage
- 2.5 Evaluation, Revision, and Re-planning Stage
- 2.6 Formulating Educational Plan

Unit 3: Process of Education Planning in Pakistan

- 3.1 Situation analysis and needs assessment
- 3.2 Setting goals and performance indicators
- 3.3 Resource estimation and target setting

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- 3.4 Designing strategies and timelines
- 3.5 Monitoring and evaluation frameworks

Unit 4: Educational Financing: Concepts and Theories

- 4.1 Definition and scope of educational financing
- 4.2 Economic theories related to education financing (public good, human capital)
- 4.3 Objectives and principles of financing education
- 4.4 Equity, efficiency, and adequacy in resource allocation
- 4.5 Public vs. private sector financing
- 4.6 Education as Investment and Consumption
- 4.7 Demand and Supply of Education

Unit 5: Sources of Educational Finance

- 5.1 Government financing (federal, provincial, local)
- 5.2 Private sector contributions
- 5.3 International aid and donor agencies (e.g., World Bank, UNESCO, GPE)
- 5.4 Community-based financing
- 5.5 Education Cess, taxes, and endowments
- 5.6 Problems of Educational Financing

Unit 6: Budgeting in Education

- 6.1 Types of educational budgets: line-item, performance-based, zero-based
- 6.2 Budget preparation and approval processes
- 6.3 Fund disbursement and utilization
- 6.4 Financial audits and transparency
- 6.5 Budget challenges in developing countries

Unit 7: Cost and Expenditure Analysis in Education

- 7.1 Types of educational costs (direct, indirect, recurrent, capital)
- 7.2 Per-student expenditure and cost indicators
- 7.3 Cost-sharing mechanisms (students, parents, state)
- 7.4 Internal vs. external efficiency
- 7.5 Cost-reduction and resource optimization strategies
- 7.6 Educational Cost-Benefit Analysis
- 7.7 Social Rate of Return

Unit 8: Financing Issues in the Pakistani Education System

- 8.1 Who pays for education: institutions or individuals
- 8.2 Analysis of national and provincial education budgets
- 8.3 Funding disparities among regions, levels, and genders
- 8.4 Challenges in financial decentralization
- 8.5 Corruption, leakage, and accountability mechanisms
- 8.6 Role of SDG-4 and financing commitments in Pakistan

Unit 9: Models of Financing

- 9.1 Definition and purpose of financing models in education
- 9.2 The Bureaucratic, Collegial, and Market models
- 9.3 Public Financing Model
- 9.4 Private Financing Model
- 9.5 Public-Private Partnership (PPP) Model

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- 9.6 Cost-Sharing Model
- 9.7 Outcome-Based and Performance-Based Financing
- 9.8 Decentralized Financing Model

Recommended Texts

1. Ki, B. J. (2023). *Educational planning and management: Financing* (Trade paperback). Our Knowledge Publishing.
rekhtabooks.comjournal.iainlangsa.ac.id+4powells.com+4amazon.in+4
2. Smith, M. D. (2023). *The Abundant University: Remaking Higher Education for a Digital World*. MIT Press. en.wikipedia.org
3. Steyn, G. M. (2024). *Human resource management in education* (3rd ed.). University of South Africa Press. (Although focused on HR, includes relevant chapters on budgeting and planning.)
4. World Bank. (2018). *World development report 2018: Learning to realize education's promise*. World Bank Publications.
5. OECD. (2017). *Education at a glance 2017: OECD indicators*. OECD Publishing
6. UNESCO. (2015). *Rethinking education: Towards a global common good?* UNESCO Publishing.

Suggested Readings

1. Sayed, Y., & Ahmed, R. (2011). *Education quality in the global South: Developing and sustaining effective teacher professional development*. Routledge.
2. Pandit, J. M., & Paul, B. (2023). *Strategic human resource management in higher education: Roadmap for Indian institutions*. Springer. (Includes strategic finance planning content.)
3. Maruhawa, A. (2023). *Educational financing management: Concepts, implications and quality development*. *At-Tafkir*, 16(1), 55–68.
journal.iainlangsa.ac.id+1researchgate.net+1
4. Hassan, F., Hina, H., & Ali, A. (2023). *Educational requirements of Pakistan: A normed planning approach*. *Business Review*, 18(1), 1–23. (Focuses on projections, budgeting, and policy implications.) ir.iba.edu.pk
5. Psacharopoulos, G., & Patrinos, H. A. (2018). *Returns to investment in education: A decennial review of the global literature*. *Education Economics*, 26(5), 445–458.
6. Shastri, M. C. (2012). *Educational Planning and Financing*. Lap Lambert
7. Tilak, J. B. G. (2006). *Economics of human capital in education*. NUEPA.
8. Woodhall, M. (2004). *Cost-benefit analysis in educational planning* (4th ed.). UNESCO: IIEP.
9. Sreeramulu, G. (2004). *Planning and expenditure on education* (Kalpaz Publications).

🌐 Web Resources

1. **UNESCO International Institute for Educational Planning (IIEP)**
<https://www.iiep.unesco.org/>
2. **World Bank Education – Data & Research**
<https://www.worldbank.org/en/topic/education>

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3. **Global Education Monitoring (GEM) Report – UNESCO**
<https://www.education-progress.org/>
4. **OECD Education Statistics**
<https://www.oecd.org/education/>
5. **UNICEF Education Resources**
<https://www.unicef.org/education>
6. **Education Policy and Data Center (EPDC)**
<https://www.epdc.org/>
7. **Global Partnership for Education (GPE)**
<https://www.globalpartnership.org/>
8. **Pakistan Bureau of Statistics – Education Section**
<https://www.pbs.gov.pk/>
9. **Ministry of Federal Education and Professional Training (Pakistan)**
<http://www.mofept.gov.pk/>
10. **National Education Management Information System (NEMIS – Pakistan)**
<http://library.aepam.edu.pk/>

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EDUC-6245

Human Resource Management in Education

3(3-0)

Course Description

Human Resource Management belongs in all organizations. Its focal point is people; people are the lifeblood of organizations. Without them, there is no need for computer systems, compensation plans, or programs and procedures. This subject/course is designed to teach the basic principles of Human Resource Management (HRM) to diverse students. This course is designed to provide you with the foundations of HRM, whether you intend to work in HRM or not, most of these elements will affect you at some point in your career. Either you will be working with some organizations or having people working for you, in both cases, you will be dealing with people.

Course Objectives

After this course, the student should be able to:

1. Have a more comprehensive understanding of the Human Resource Management practices.
2. Hold informed conversations with functional specialists and understand how to draw effectively on their expertise in managing organizations.
3. Develop the knowledge, skills, and concepts needed to resolve actual human resource management problems or issues.
4. Understand the employment relationship (shared responsibility between employers, employees, management, and human resources specialists).
5. Apply course concepts and theory in a practical context.
6. Demonstrate empirical investigative skills by producing an in-depth analysis of a management situation usually presented through case studies.
7. Recognize the need to take a holistic approach to performance

Course outline**Unit 1: Introduction to Human Resource Management in Education**

- 1.1 Definition, scope, and importance of HRM in educational settings
- 1.2 Objectives and principles of HRM
- 1.3 Evolution of HRM and its application in education
- 1.4 Differences between HRM in corporate and educational organizations
- 1.5 Role of school administrators and educational leaders in HRM

Unit 2: Human Resource Planning

- 2.1 Concept and importance of HR planning in education
- 2.2 Demand and supply forecasting of educational personnel
- 2.3 Staffing patterns in public vs. private institutions
- 2.4 Strategic HR planning and school improvement plans
- 2.5 Succession planning in educational institutions
- 2.6 HR contingency planning and risk management

Unit 3: Recruitment and Selection

- 3.1 Recruitment policy and procedures in education
- 3.2 Job analysis, job description, and person specification
- 3.3 Advertising and attracting candidates
- 3.4 Interviewing, testing, and selection tools
- 3.5 Appointment, induction, and probation procedures

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Unit 4: Professional Development and Capacity Building

- 4.1 Need and importance of continuous professional development (CPD)
- 4.2 Types of in-service training and workshops
- 4.3 Teacher education programs and accreditation standards
- 4.4 Mentoring, coaching, and peer learning
- 4.5 Evaluating the effectiveness of professional development programs

Unit 5: Performance Appraisal and Evaluation

- 5.1 Concepts and objectives of performance appraisal
- 5.2 Common appraisal methods used in schools and colleges
- 5.3 360-degree feedback and self-evaluation
- 5.4 Linking appraisal to promotion, training, and accountability
- 5.5 Issues and challenges in implementing fair appraisal systems

Unit 6: Motivation, Compensation, and Welfare

- 6.1 Theories of motivation and their application in education (Maslow, Herzberg)
- 6.2 Employee engagement and job satisfaction
- 6.3 Salary structures, incentives, and non-monetary rewards
- 6.4 Teacher welfare schemes (e.g., health, housing, leaves)
- 6.5 Addressing burnout, stress, and work-life balance
- 1.6 Supporting employees with disabilities and minority groups

Unit 7: Legal and Ethical Dimensions of HRM in Education

- 7.1 Employment laws and teacher service rules
- 7.2 Equal employment opportunity, diversity, and anti-discrimination
- 7.3 Grievance redressal and disciplinary procedures
- 7.4 Workplace harassment and code of conduct
- 7.5 Ethical decision-making and professionalism in HR practices

Unit 8: Leadership, Organizational Culture, and IIRM

- 8.1 Role of leadership in managing human resources
- 8.2 Organizational culture and its influence on staff performance
- 8.3 Building collaborative and inclusive school environments
- 8.4 Conflict resolution and team-building strategies
- 8.5 Change management and innovation in HR practices

Recommended Texts

1. Steyn, G. M. (2024). *Human resource management in education* (3rd ed.). University of South Africa Press.
2. Ch., M. A., & Irum, F. (2023). *Human resource management for M.A., M.Ed., M.A. education and general readers*. Majeed Book Depot.
3. Hoque, K. E. (2023). *Human Resource Management in Education*. Nova.
4. Pandit, J. M., & Paul, B. (2023). *Strategic human resource management in higher education: Roadmap for Indian institutions*. Springer.
5. Armstrong, M., & Taylor, S. (2020). *Armstrong's handbook of human resource management practice* (15th ed.). Kogan Page.
6. Dessler, G. (2020). *Human resource management* (16th ed.). Pearson Education.

Suggested Readings

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 Associate Professor
 Department of Education
 University of Calicut

1. Lussier, R. N., & Hendon, J. R. (2020). *Human resource management: Functions, applications, and skill development* (4th ed.). Sage.
2. Bush, T., Bell, L., & Middlewood, D. (Eds.). (2019). *Principles of educational leadership and management* (3rd ed.). Sage Publications.
3. Mathis, R. L., Jackson, J. H., Valentine, S. R., & Meglich, P. A. (2019). *Human resource management* (15th ed.). Cengage Learning
- Rebore, R. W. (2017). *Human resources administration in education: A management approach* (10th ed.). Pearson.
4. Mondy, R. W., & Martocchio, J. J. (2015). *Human resource management* (14th ed.). Pearson Education.
5. Robbins, S.P. & Coulter, M. (2018). *Management*. 14th ed. Pearson, George R. Terry, & Stefan G. Franklin (1997). *Principles of Management*. AITBS Publishers, New Delhi
6. Owens, R. G., & Valesky, T. C. (2014). *Organizational behavior in education: Leadership and school reform* (11th ed.). Pearson.
7. Cameron, K. S. and Quinn, R. E. (2011). *Diagnosing and changing organizational culture: Based on the Competing Values Framework*. (3rd edition). US: Jossey-Bass

🌐 Web Resources

1. UNESCO. (n.d.). *Education and human resources development*. <https://www.unesco.org/en/education>
2. OECD. (n.d.). *Teachers and leaders in schools*. <https://www.oecd.org/education/>
3. Ministry of Federal Education and Professional Training, Pakistan. (n.d.). <https://www.mofept.gov.pk/>
4. Human Resource Management Association of Pakistan (HRMAP). (n.d.). <https://www.hrmap.org/>
5. Higher Education Commission Pakistan (HEC). (n.d.). <https://www.hec.gov.pk/>
6. Society for Human Resource Management (SHRM). (n.d.). <https://www.shrm.org/>
7. Education International. (n.d.). *Teacher rights and human resources*. <https://www.ei-ie.org/en>
8. Harvard Graduate School of Education. (n.d.). *Leadership and management resources*. <https://www.gse.harvard.edu/>
9. National Education Association (NEA). (n.d.). *Educator rights and workplace policies*. <https://www.nea.org/>
10. International Institute for Educational Planning (IIEP) - UNESCO. (n.d.). <https://www.iiep.unesco.org/>

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University of Sindh

EDUC-6246

Human Relations in Schools

3(3-0)

Course Description

This course focuses on the development of positive interpersonal relationships within the school environment. It explores the psychological, cultural, social, and organizational factors that affect communication and collaboration among students, teachers, administrators, and parents. Emphasis is placed on empathy, emotional intelligence, conflict resolution, leadership, collaboration, and creating a safe, inclusive school climate. The course prepares future educators and school leaders to build effective human relationships that promote academic success and emotional well-being.

Course Objectives

After studying the course, the students will be able to:

1. Understand the concepts related to school as organization
2. Elaborate the importance of human relations in educational institution
3. Discuss the issues in an organization
4. Explain the relations among different stakeholders of the school
5. Develop the strategies to strengthen the relations among school stakeholders.

Course Outline**Unit 1: Introduction to Human Relations in Education**

- 1.1 Meaning, nature, and importance of human relations
- 1.2 Role of interpersonal relationships in school settings
- 1.3 Factors influencing human behavior in schools
- 1.4 Characteristics of effective human relationships in teaching and learning
- 1.5 Teacher-student and teacher-parent relationship dynamics

Unit 2: Communication in Educational Settings

- 2.1 Principles and types of communication (verbal, non-verbal, written, digital)
- 2.2 Barriers to effective communication in schools
- 2.3 Active listening and feedback strategies
- 2.4 Teacher communication with students, colleagues, and parents
- 2.5 Digital communication and media literacy

Unit 3: Emotional Intelligence and Empathy in Schools

- 3.1 Understanding emotions and their impact on relationships
- 3.2 Components of emotional intelligence (self-awareness, regulation, motivation, empathy, social skills)
- 3.3 Fostering empathy in diverse classrooms
- 3.4 Emotionally safe classrooms and well-being
- 3.5 Teacher self-care and stress management
- 3.6 Personal growth and professional identity

Unit 4: Group Dynamics and Teamwork

- 4.1 Theories of group behavior and development
- 4.2 Building effective teacher teams and professional learning communities
- 4.3 Peer interaction and group work among students
- 4.4 Promoting collaboration through co-teaching and interdisciplinary learning
- 4.5 Managing team conflicts



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Unit 5: Conflict Resolution and Problem Solving

- 5.1 Sources and types of conflict in school settings
- 5.2 Conflict resolution models (e.g., Thomas-Kilmann, Interest-Based)
- 5.3 Mediation and restorative practices in schools
- 5.4 Teacher's role in resolving peer and student-parent conflicts
- 5.5 Negotiation skills for educators

Unit 6: Managing Human Relations in School

- 6.1 Teacher-head teacher relations
- 6.2 Teacher-student relations
- 6.3 Teacher-parent relations
- 6.4 Teacher-teacher relations
- 6.5 Teacher-non-teaching staff relations
- 6.6 Teacher-community relations
- 6.7 Student-student relations
- 6.8 Student-teacher relations

Unit 7: Leadership and Human Relations

- 7.1 Human relations skills of effective school leaders
- 7.2 Influence of leadership style on school culture
- 7.3 Teacher as a leader and mentor
- 7.4 Staff motivation and morale
- 7.5 Building trust and rapport

Unit 8: Diversity, Equity, and Inclusion in School Relationships

- 8.1 Cultural competence and responsiveness
- 8.2 Understanding and managing biases and stereotypes
- 8.3 Promoting inclusive classroom practices
- 8.4 Gender, socioeconomic, and language sensitivity
- 8.5 Anti-bullying and discrimination policies
- 8.6 Strategies for promoting a positive and inclusive school culture

Unit 9: Building a Positive School Climate and Culture

- 9.1 Elements of a positive school culture
- 9.2 The role of rituals, traditions, and shared values
- 9.3 Strategies to promote mutual respect, cooperation, and belonging
- 9.4 Student voice and participatory school governance
- 9.5 Whole-school approaches to well-being and social-emotional learning

Recommended Texts

2. Howard, T. C. (2024). *Equity now: Justice, repair, and belonging in schools*. Corwin.
3. Smith, M. D. (2023). *The abundant university: Remaking higher education for a digital world*. MIT Press.
4. Cloud, H. (2021). *Boundaries for leaders: Results, relationships, and being ridiculously in charge*. HarperBusiness.
5. Gottman, J., & DeClaire, J. (2021). *The emotion coach: Raising emotionally intelligent children*. Simon & Schuster.
6. Jennings, P. A. (2021). *The mindful school: Transforming school culture through*

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mindfulness and compassion. W. W. Norton & Company.

7. Martinez, M. A., & Darling-Hammond, L. (2023). *Developing socially and emotionally competent teachers.* Harvard Education Press.

Suggested Readings

1. Souers, K., & Hall, P. (2022). *Relationship, responsibility, and regulation: Trauma-invested practices for fostering resilient learners.* ASCD.
- HALL, E. (2018). *Human Relations in Education.* Routledge.
2. Bolman, L. G., & Deal, T. E. (2017). *Reframing organizations: Artistry, choice, and leadership* (6th ed.). Jossey-Bass.
3. Friend, M., & Cook, L. (2016). *Interactions: Collaboration skills for school professionals* (8th ed.). Pearson.
4. Esude Samson. (2016). *Human Relations: Self-Esteem and Human Relations.* Grin Publishing.
5. Delpit, L. (2012). *"Multiplication is for White People": Raising expectations for other people's children.* The New Press.
6. Smith, S. (2011). *Application of Human Relations Theory in Primary Schools.* Grin Velag.
7. Reborc, R. W. (2003). *A Human Relations Approach to the Practice of Educational Leadership.* Allyn and Bacon.

Web Resources

1. Edutopia. (n.d.). *Social and emotional learning (SEL).*
<https://www.edutopia.org/social-emotional-learning>
2. CASEL. (n.d.). *Collaborative for Academic, Social, and Emotional Learning.*
<https://casel.org>
3. National School Climate Center. (n.d.). *Improving school climate.*
<https://schoolclimate.org>
4. American Psychological Association. (n.d.). *Teacher stress and student behavior.*
<https://www.apa.org/education-career/k12/teacher-stress>
5. MindTools. (n.d.). *Conflict resolution and communication skills.*
<https://www.mindtools.com>
6. The Wallace Foundation. (n.d.). *Effective school leadership and relationships.*
<https://www.wallacefoundation.org>
7. Inclusive Schools Network. (n.d.). *Strategies for inclusive classrooms.*
<https://inclusiveschools.org>
8. National Education Association. (n.d.). *Preventing and addressing bullying.*
<https://www.nea.org>

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EDUC-6247

Financial Management for School Leaders

3(3-0)

Course Description:

This course introduces school leaders to the principles and practices of financial management in educational institutions. It emphasizes planning, budgeting, expenditure tracking, financial accountability, and resource mobilization. The course also explores legal and ethical responsibilities in managing school funds, fundraising strategies, and financial reporting in both public and private school contexts.

Course Objectives:

By the end of the course, students will be able to:

1. Describe fundamental principles of financial management in schools.
2. Prepare and analyze school budgets.
3. Monitor and control expenditures within legal and policy frameworks.
4. Evaluate sources of school funding and fundraising strategies.
5. Ensure financial accountability and transparency in school operations.
6. Interpret financial reports and audits.
7. Apply financial planning to promote equity and efficient use of resources.
8. Analyze legal and ethical implications in school financial practices.

Course Outline

Unit 1: Introduction to Financial Management in Education

- 1.1 Definition, scope, and importance of financial management
- 1.2 Financial responsibilities of school leaders
- 1.3 Principles of sound financial management
- 1.4 Educational finance vs. business finance
- 1.5 Role of financial leadership in school improvement

Unit 2: School Budgeting Process

- 2.1 Types of budgets: line-item, program-based, performance-based
- 2.2 Steps in school budget development
- 2.3 Participatory budgeting and stakeholder involvement
- 2.4 Budget approval and implementation process
- 2.5 Common budgeting errors and how to avoid them

Unit 3: Revenue Sources and Financial Planning

- 3.1 Public funding sources (grants, government allocations)
- 3.2 Private sources: tuition fees, donations, fundraising events
- 3.3 Financial planning and forecasting
- 3.4 Managing donations, endowments, and sponsorships
- 3.5 School Development Plans and financial alignment
- 3.6 Challenges in low-resource settings

Unit 4: Financial Record Keeping and Reporting

- 4.1 Principles of financial record keeping
- 4.2 School financial documents (cashbook, vouchers, ledgers, etc.)
- 4.3 Internal controls and audit preparation
- 4.4 Financial reporting formats for schools
- 4.5 Using financial data for decision-making

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 University of Lagos

Unit 5: Financial Accountability and Auditing

- 5.1 Concepts of financial accountability and transparency
- 5.2 School audits: types and purposes
- 5.3 Roles of internal and external audits
- 5.4 Red flags and common irregularities in school finances
- 5.5 Dealing with audit findings

Unit 6: Legal and Ethical Issues in School Finance

- 6.1 Laws and policies governing school finance in Pakistan
- 6.2 Procurement rules and public spending regulations
- 6.3 Misuse of funds and consequences
- 6.4 Corruption, fraud, and ethical leadership
- 6.5 Code of conduct for financial officers

Unit 7: Resource Mobilization and Fundraising

- 7.1 Community participation and school fundraising
- 7.2 Proposal writing for grants
- 7.3 Building partnerships with NGOs and private sector
- 7.4 Donor reporting and accountability
- 7.5 Income-generating projects in schools

Unit 8: Financial Decision-Making and Strategic Resource Use

- 8.1 Cost-effective decision-making in education
- 8.2 Prioritizing spending based on student learning outcomes
- 8.3 Equity in resource distribution
- 8.4 Risk management and contingency planning
- 8.5 Financial leadership for school transformation
- 8.6 Trends in global educational investments

Recommended Texts

1. Wood, R. C., & Thompson, D. C. (2021). *Financial and business management for the school administrator: Theory, practices, and cases*. Rowman & Littlefield.
2. Garrett, R. M. (2020). *Strategic financial management for schools: Tools and principles for effective budgeting and planning*. Routledge.
3. Rashid, A., & Mukhtar, F. (2018). *Public education financing in Pakistan: An equity perspective*. Islamabad: SPDC (Social Policy and Development Centre).
4. Lasher, W. F., & Sullivan, C. L. (2017). *Budgeting and financial management for nonprofit organizations: Using money to drive mission success* (3rd ed.). Wiley.
5. Brimley, V., Versteegen, D. A., & Garfield, R. R. (2016). *Financing education in a climate of change* (12th ed.). Pearson.
6. Glatthorn, A. A., Jailall, J. M., & Jailall, J. K. (2016). *Curriculum leadership: Strategies for development and implementation* (4th ed.). SAGE Publications.

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Assistant Professor
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Suggested Readings

1. UNESCO Islamabad. (2016). *Education budget analysis in Pakistan: Expenditure and equity*. UNESCO Pakistan Office.
2. Odden, A. R., & Picus, L. O. (2014). *School finance: A policy perspective* (5th ed.). McGraw-Hill Education.
3. Iqbal, M., & Ahmed, M. (2014). *Educational planning and management*. Lahore: Majeed Book Depot.
4. Hartman, W. T. (2013). *School district budgeting* (2nd ed.). Rowman & Littlefield.
5. Levin, H. M., & McEwan, P. J. (2001). *Cost-effectiveness analysis: Methods and applications* (2nd ed.). SAGE Publications.
6. Craig, J. R. (2013). *Budgeting for educational institutions*. Jossey-Bass.
7. Government of Pakistan. (2021). *Pakistan Economic Survey 2020–21: Education Chapter*. Islamabad: Ministry of Finance.
[Available online at: <https://www.finance.gov.pk>]
8. UNESCO. (2011). *Financing education in Sub-Saharan Africa: Meeting the challenges of expansion, equity, and quality*. UNESCO Institute for Statistics.

🌐 Web Resources

1. **UNESCO Institute for Statistics – Education Finance**
<https://uis.unesco.org/en/topic/education-finance>
2. **Global Partnership for Education (GPE) – Financing Education**
<https://www.globalpartnership.org/financing-education>
3. **OECD Education Finance Statistics**
<https://www.oecd.org/education/education-at-a-glance/>
4. **World Bank – Education Finance**
<https://www.worldbank.org/en/topic/education/brief/education-finance>
5. **National Center for Education Statistics (NCES) – School Finance**
<https://nces.ed.gov/fastfacts/display.asp?id=66>
6. **Education International – Funding and Public Education**
<https://www.ci-ie.org/en/detail/16163/funding-education>
7. **Edutopia – School Budgeting and Resource Allocation**
<https://www.edutopia.org/topic/school-finance>
8. **Open Budget Survey – Education Budget Transparency**
<https://www.internationalbudget.org/open-budget-survey/>
9. **Pakistan Economic Survey (Education Chapter)**
https://www.finance.gov.pk/survey/chapter_21/Education.pdf
10. **National Education Management Information System (NEMIS) – Pakistan**
<http://library.aepam.edu.pk/>

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Specialization 5: Curriculum Studies

Specialization 5: Curriculum Studies (Select any Six Courses)				
1.	EDUC-6248	Curriculum Planning, Design and Implementation	3(3-0)	<i>Nil</i>
2.	EDUC-6249	Curriculum Evaluation and Assessment	3(3-0)	<i>Nil</i>
3.	EDUC-6250	Models of Curriculum	3(3-0)	<i>Nil</i>
4.	EDUC-6251	Curriculum Change & Innovation	3(3-0)	<i>Nil</i>
5.	EDUC-6252	Curriculum Adaptation	3(3-0)	<i>Nil</i>
6.	EDUC-6253	Comparative Curriculum Studies	3(3-0)	<i>Nil</i>
7.	EDUC-6254	Instructional Materials Development	3(3-0)	<i>Nil</i>

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EDUC-6248

Curriculum Planning, Design and Implementation

3(3-0)

Course Description

The course *Curriculum Planning, Design and Implementation* is a core component of undergraduate teacher education, designed to build foundational and applied knowledge for future educators, curriculum developers, and educational planners. This course offers a comprehensive exploration of the processes involved in developing and executing effective curricula that are responsive to societal needs, learner diversity, and emerging global challenges. This course emphasizes the interrelationship between curriculum theory and practice, covering historical developments, philosophical underpinnings, and contemporary trends such as inclusive education, digital integration, competency-based learning, and policy alignment. It also considers the sociopolitical contexts that influence curriculum decision-making at various levels — from national policy to classroom practice.

Course Objectives

By the end of this course, students will be able to:

1. Understand the concepts and principles of curriculum planning and design.
2. Analyze models and approaches to curriculum development.
3. Explore the process of curriculum implementation and factors affecting it.
4. Evaluate the curriculum planning and implementation practices in Pakistan.
5. Apply curriculum planning and design strategies in real classroom and school settings.

Course Outlines**Unit 1: Introduction to Curriculum**

- 1.1 Definitions, concepts, and importance
- 1.2 Relationship between curriculum, instruction, and assessment
- 1.3 Evolution of curriculum thinking and its relevance to 21st-century education
- 1.4 Curriculum for student learning experiences and societal progress

Unit 2: Foundations of Curriculum Planning

- 2.1 Philosophical foundations
- 2.2 Psychological foundations
- 2.3 Sociological foundations
- 2.4 Economic foundations
- 2.5 Exploration of how each foundation influences curriculum decisions

Unit 3: Curriculum Planning at National and Institutional Levels

- 3.1 Role of NEP, HEC, and provincial bodies in Pakistan
- 3.2 Analysis of policy documents and curriculum frameworks (e.g., SNC)
- 3.3 Curriculum development process -- Needs assessment, goal setting, planning content, sequencing
- 3.4 Detailed steps involved in analyzing learner needs, setting SMART objectives, and aligning content with learning outcomes

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Unit 4: Curriculum Design Approaches

- 4.1 Subject-centered, learner-centered, problem-centered designs
- 4.2 Discussion on hybrid models and their application in real-world educational contexts

Unit 5: Curriculum Implementation

- 5.1 Meaning, process, and stages of implementation
- 5.2 Consideration of school culture, professional development, and resistance to change
- 5.3 Factors affecting curriculum implementation
- 5.4 Teacher competency, resources, leadership, socio-political context
- 5.5 In-depth discussion on how equity, inclusion, and policy shifts affect implementation

Unit 6: Role of Stakeholders

- 6.1 Teachers, students, parents, community, government
- 6.2 Engagement strategies for involving stakeholders in curriculum planning and review
- 6.3 The importance of participatory approaches in sustaining curriculum relevance

Unit 7: Curriculum in Practice in Pakistan and Contemporary Trends

- 7.1 Case studies from schools and institutions
- 7.2 Critical reflection on curriculum practices in diverse contexts (urban/rural, public/private)
- 7.3 Inclusive education, digital curriculum, competency-based learning
- 7.4 Discussion on SDG-4 and its implications for curriculum
- 7.5 Integration of AI, blended learning, and environmental sustainability into curriculum frameworks

Recommended Texts

1. Walters, K. (Ed.). (2023). *Dynamic curriculum development and design strategies for effective online learning in higher education*. IGI Global.
2. Arlos, A. P. (2025). *Primary curriculum design and delivery*. Society Publishing.
3. Wu, G., & Zhao, J. (2024). *Curriculum development and implementation in rural China: Theories and methods*. Springer Singapore.
4. Oliva, P., Gordon II, W., & Taylor, R. (2024). *Developing the curriculum* (9th ed.). Pearson.
5. Palahicky, S. (2020). *Enhancing learning design for innovative teaching in higher education*. IGI Global.
6. Print, M. (2022). *Curriculum development and design* (2nd ed.). Allen & Unwin.

Suggested Readings

1. Ornstein, A. C., & Hunkins, F. P. (2021). *Curriculum: Foundations, principles, and issues* (8th ed.). Pearson.
2. Ornstein, A. C., & Hunkins, F. P. (2018). *Curriculum: Foundations, principles, and issues* (7th ed.). Pearson.
3. Wiles, J. W., & Bondi, J. C. (2014). *Curriculum development: A guide to practice* (9th ed.). Pearson.
4. Tyler, R. W. (2013). *Basic principles of curriculum and instruction*. University of Chicago Press.
5. Oliva, P. F., & Gordon, W. R. (2013). *Developing the curriculum* (8th ed.). Pearson.
6. UNESCO. (2017). *Rethinking curriculum in the 21st century*. UNESCO Publishing
7. Kelly, A. V. (2009). *The curriculum: Theory and practice* (6th ed.). Sage Publications.

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8. Posner, G. J. (2004). *Analyzing the curriculum* (3rd ed.). McGraw-Hill.

🌐 *Web Resources*

1. UNESCO. (n.d.). *Curriculum and learning*. <https://www.unesco.org/en/curriculum-learning>
2. National Council of Educational Research and Training (NCERT). (n.d.). *Curriculum frameworks*. <https://ncert.nic.in>
3. HEC Pakistan. (n.d.). *Curriculum development guidelines*. <https://hec.gov.pk>
4. OECD. (n.d.). *The future of education and skills 2030*. <https://www.oecd.org/education/2030>
5. Education International. (n.d.). *Curriculum matters*. <https://www.ei-ie.org>
6. United Nations Sustainable Development Goals. (n.d.). *Goal 4: Quality education*. <https://sdgs.un.org/goals/goal4>
7. Edutopia. (n.d.). *Curriculum planning resources*. <https://www.edutopia.org/topic/curriculum-planning>
8. International Bureau of Education (IBE-UNESCO). (n.d.). *Curriculum and learning*. <http://www.ibe.unesco.org/en/themes/curriculum>
9. National Academies Press. (n.d.). *Publications on curriculum and instruction*. <https://www.nap.edu>
10. American Association for the Advancement of Curriculum Studies (AAACS). (n.d.). <https://www.aaacs.org>

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Course Description

This course introduces students to the ideas and procedures involved in curriculum development, innovation and evaluation. It will enable students to ensure that the approaches to learning and teaching benefit from the use of ICT in advancing the understanding and appreciation of knowledge as well as of innovative practice. The course first examines some general and basic issues related to designing a curriculum. Some curriculum design models will be considered and their implications for multimedia approaches to learning, teaching and assessment discussed. Consideration will also be given to teaching of values, as well as design, development and evaluation of curricula and the implementation of innovative curricula.

Course Objectives

After studying this course, the student will be able

1. Design curricula based on analysis, evaluation and synthesis of course documents teaching and Explain key concepts, purposes, and principles of curriculum evaluation.
2. Differentiate between various models of curriculum evaluation.
3. Analyze assessment strategies used to measure curriculum effectiveness.
4. Evaluate curricula using appropriate tools and models.
5. Develop assessment instruments aligned with learning outcomes.

Course Outline

Unit 1: Introduction to Curriculum Evaluation

- 1.1 Meaning, nature and scope
- 1.2 Importance in curriculum development cycle
- 1.3 Difference between curriculum evaluation & student assessment

Unit 2: Purposes and Principles of Evaluation

- 2.1: Formative vs summative evaluation
- 2.2 Diagnostic and placement evaluation
- 2.3 Principles guiding effective curriculum evaluation

Unit 3: Models of Curriculum Evaluation

- 3.1 Tyler's Objectives Model
- 3.2 CIPP Model (Stufflebeam)
- 3.3 Stake's Countenance Model
- 3.4 Kirkpatrick's Four Levels
- 3.5 Application in Pakistani context

Unit 4: Tools and Techniques for Evaluation

- 4.1 Observation, interviews, rating scales, checklists, rubrics
- 4.2 Tests: achievement, aptitude, diagnostic
- 4.3 Questionnaire design and data collection

Unit 5: Curriculum Assessment Strategies

- 5.1 Traditional vs alternative assessments
- 5.2 Continuous and comprehensive evaluation (CCE)
- 5.3 Portfolios, self-assessment, peer-assessment
- 5.4 National assessment strategies (e.g. NEAS)

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Unit 6: Evaluation of Instructional Materials & Textbooks

- 6.1 Criteria for textbook analysis
- 6.2 Gender sensitivity, cultural relevance, content validity
- 6.3 Role of Punjab Curriculum & Textbook Board (PCTB)

Unit 7: Curriculum Evaluation in Pakistan

- 7.1 Role of HEC, NEAS, PCTB, provincial education departments
- 7.2 Curriculum evaluation practices in school
- 7.3 Challenges and recommendations

Unit 8: Designing a Curriculum Evaluation Plan

- 8.1 Selecting model(s), tools, methods
- 8.2 Reporting results to stakeholders
- 8.3 Use of evaluation data for curriculum improvement

Recommended Texts

1. Wesley Null (2023). *Curriculum: From Theory to Practice*. Rowman & Littlefield.
2. Print, M. (2022). *Curriculum development and design* (2nd ed.). Allen & Unwin.
3. D. Stufflebeam (CIPP) (2022). *Models of Curriculum Evaluation*. Springer.
4. Coe et al. (2021). *Educational Assessment in a Time of Reform*. Springer.
5. Ornstein, A. C., & Hunkins, F. P. (2021). *Curriculum: Foundations, principles, and issues*.
6. Dr. M. A. Qureshi (2021). *Curriculum Development in Pakistan*. National Book Foundation. (8th ed.). Pearson.

Suggested Readings

1. Colin J. Marsh (2020). *Curriculum Evaluation Today*. Routledge.
2. Linda Suskie (2018). *Assessing Student Learning: A Common Sense Guide*. Jossey-Bass.
3. Rick Stiggins et al. (2019). *Classroom Assessment for Student Learning*. Pearson.
4. Dr. Shahid K. Siddiqui (Latest Ed). *Assessment, Evaluation and Measurement in Education*. AIOU Press.
5. Tyler, R. W. (2013). *Basic principles of curriculum and instruction*. University of Chicago Press.
6. Stufflebeam, D. L., & Coryn, C. L. S. (2014). *Evaluation theory, models, and applications* (2nd ed.). Jossey-Bass.
7. Popham, W. J. (2017). *Classroom assessment: What teachers need to know* (8th ed.). Pearson.
8. Kellough, R. D., & Kellough, N. G. (2011). *Understanding curriculum: An introduction to the study of historical and contemporary curriculum discourses*. Routledge.

🌐 *Web Resources*

1. UNESCO. (2023). *Curriculum and learning*.
<https://www.unesco.org/en/education/curriculum-learning>

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2. OECD. (2023). *Curriculum reform and innovation*. <https://www.oecd.org/education/school/curriculum-innovation.htm>
3. ERIC. (n.d.). *Education Resources Information Center (ERIC)*. <https://eric.ed.gov>
4. Edutopia. (n.d.). *Assessment*. <https://www.edutopia.org/assessment>
5. ASCD. (n.d.). *Curriculum and instruction*. <https://www.ascd.org/topics/curriculum-instruction>
6. The Glossary of Education Reform. (n.d.). *Curriculum evaluation*. <https://www.edglossary.org/curriculum-evaluation/>
7. Brookings Institution. (n.d.). *Education research and curriculum reform*. <https://www.brookings.edu/topic/education/>
8. National Council on Measurement in Education (NCME). (n.d.). *Assessment literacy resources*. <https://www.ncme.org/>
9. International Bureau of Education (IBE-UNESCO). (n.d.). *Global curriculum network*. <https://www.ibe.unesco.org/>
10. Education International. (n.d.). *Policies on curriculum and assessment*. <https://www.ei-ie.org/>

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EDUC-6250

Models of Curriculum

3(3-0)

Course Description

This course explores various curriculum models and their applications in educational settings, with a focus on the Pakistani context. Students will examine traditional and contemporary approaches to curriculum design. The course also covers learner-centered, problem-centered, and subject-centered designs, emphasizing their theoretical foundations and practical implications. Students will critically analyze the effectiveness of different models in diverse learning environments, considering cultural, social, and technological factors.

Course Objectives

At the end of the course, the students will be able to:

1. Understand the concepts of curriculum
2. Examine the components of curriculum development
3. Differentiate between different models of curriculum
4. Explain different approaches of curriculum change

Course Outline**Unit 1: Introduction to Curriculum**

- 1.1 Concept of Curriculum
- 1.2 Various Forms of Curriculum
- 1.3 Need for Changing the Curriculum
- 1.4 Principles of Curriculum Development
- 1.5 Steps in Curriculum Development
 - 1.5.1 Formulating Objectives
 - 1.5.2 Selecting Curriculum Content
 - 1.5.3 Organizing Content
 - 1.5.4 Preparing Instructional Materials
 - 1.5.5 Evaluating Curriculum

Unit 2: Foundations of Curriculum

- 2.1 Philosophical Foundations
- 2.2 Psychological Foundations
- 2.3 Sociological Foundations
- 2.4 Historical Foundations

Unit 3: Curriculum and Instructional Objectives

- 3.1 Distinction between Aims, Goals & Objectives
- 3.2 Taxonomies of Educational Objectives
 - 3.2.1 Bloom's Taxonomy
 - 3.2.2 SOLO Taxonomy

Unit 4: Models of Curriculum

- 4.1 Tyler Model
- 4.2 Wheeler Model
- 4.3 Dynamic Model
- 4.4 Hilda Taba's Model
- 4.5 Need Assessment Model

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 University of Sargodha

Unit 5: Design of Curriculum

- 5.1 Subject-based Curriculum
- 5.2 Activity-based Curriculum
- 5.3 Learner-Centered Curriculum
- 5.4 Problem-Based Curriculum
- 5.5 Integrated Curriculum

Unit 6: Process of Curriculum Development in Pakistan

- 6.1 Curriculum Development at Elementary and Secondary Level
- 6.2 Role of Teacher in Curriculum Development Process at Various Levels
- 6.3 Challenges and Issues to Curriculum Implementation

Unit 7: Curriculum Change

- 7.1 Approaches of Curriculum Change
- 7.2 Process of Curriculum Change
- 7.3 Various Issues in Curriculum Change

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 University of Gujrat

Recommended Texts

1. Kelly, A. V. (2025). *The curriculum: Theory and practice* (5th ed.). Routledge.
2. Paraskeva, J. (2024). *Itinerant curriculum theory: A declaration of epistemological independence*. Routledge.
3. Vranesh, R. (2024). *Modern curriculum development methods*. Academic Press.
4. Kumar, R. (2023). *Curriculum development*. Sunrise Publications.
5. Oliva, P. F., & Gordon, W. R. (2023). *Developing the curriculum* (9th ed.). Pearson.
6. Hale, J. A. (2023). *A guide to documenting learning: Making thinking visible, meaningful, shareable, and amplified*. Corwin Press.

Suggested Readings

1. Null, W., & Bohan, C. (2023). *Curriculum: From theory to practice* (2nd ed.). Rowman & Littlefield.
2. Ornstein, A. C., & Hunkins, F. P. (2021). *Curriculum: Foundations, principles, and issues* (8th ed.). Pearson.
3. Print, M. (2022). *Curriculum development and design* (2nd ed.). Routledge.
4. Marsh, C. J., & Willis, G. (2019). *Curriculum: Alternative approaches, ongoing issues* (5th ed.). Pearson.
5. Glatthorn, A. A., Boschee, F., Whitehead, B. M., & Boschee, B. F. (2018). *Curriculum leadership: Strategies for development and implementation* (5th ed.). SAGE.
6. Talla, M. (2012). *Curriculum development: Perspectives, principles and issues*. Pvt Ltd Licensees of Pearson Education in South Asia.
7. Memon, G. R. (2007). Education in Pakistan: The key issues, problems and the new challenges. *Journal of Management and Social Science*, 3(1), 47–55.

Web Resources

1. UNESCO International Bureau of Education. (n.d.). [Curriculum models and approaches](#).
 - o Provides global perspectives and comparative frameworks.
2. EdGlossary. (n.d.). Curriculum models.

- Definitions and applications in K–12 and higher education.
 - 3. ASCD. (n.d.). Understanding by Design (UbD).
 - Resource hub for backward design model.
 - 4. National Academies of Sciences, Engineering, and Medicine. (2018). How people learn II: Learners, contexts, and cultures.
 - Insights into learning theories that influence curriculum models.
 - 5. OECD. (n.d.). Future of Education and Skills 2030.
 - Forward-looking approaches to curriculum design.
 - 6. Stanford Graduate School of Education. (n.d.). Curriculum development resources.
 - Access to research and practical tools.
 - 7. Education Corner. (n.d.). Curriculum models and their applications.
 - Simple explanations of Tyler, Taba, and modern models.
 - 8. Education International. (n.d.). Curriculum and equity.
 - Equity-focused curriculum policy discussions.
 - 9. National Curriculum Framework (Pakistan). Single National Curriculum Portal
 - Contextual framework for curriculum in Pakistan.
 - 10. Edutopia. (n.d.). Project-based learning and curriculum design.
- Examples and case studies applying models like backward design.

Mrid
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Department of Education
University of Sindh

EDUC-6251

Curriculum Change & Innovation

3(3-0)

Course Description

The purpose of this course is to provide students with opportunities to understand the development of curriculum as historical, social, and political and management process. The course helps students acquire skills and abilities to be active participants of curriculum change and development process by evaluating upcoming changes in society, labour market and by assessing learners' needs. This course explores theories, processes, and practices related to curriculum change and innovation with a special focus on the Pakistani educational context. It aims to equip future educators with the knowledge and skills to understand, evaluate, and implement curriculum reforms that respond to local needs and global trends.

Course Objectives:

By the end of this course, students will be able to:

1. Understand key concepts and theories related to curriculum change and innovation.
2. Analyze historical and contemporary curriculum reforms in Pakistan and globally.
3. Identify the factors influencing curriculum change.
4. Evaluate models and approaches for curriculum innovation.
5. Design and propose contextually relevant curriculum innovations.
6. Understand the role of various stakeholders in initiating and sustaining change.
7. Use digital tools and global resources to support innovative teaching practices.

Course Outline**Unit 1: Introduction to Curriculum Change**

- 1.1 Definition and scope
- 1.2 Difference between curriculum development and curriculum change
- 1.3 Importance and need for curriculum change
- 1.4 Types of curriculum change (planned vs. unplanned)

Unit 2: Theories and Models of Curriculum Change

- 2.1 Lewin's Change Theory
- 2.2 Fullan's Model of Educational Change
- 2.3 Rogers' Diffusion of Innovations
- 2.4 Concerns-Based Adoption Model (CBAM)

Unit 3: Factors Influencing Curriculum Change

- 3.1 Political, social, cultural, and economic factors
- 3.2 Role of international trends and globalization
- 3.3 Technological advancements
- 3.4 Stakeholders: teachers, policymakers, parents, communities

Unit 4: Curriculum Innovation: Concepts and Principles

- 4.1 Innovation vs. change
- 4.2 Types of innovation in education (instructional, technological, organizational)
- 4.3 Characteristics of successful curriculum innovations
- 4.4 Barriers to innovation

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 Directorate of Curriculum

Unit 5: Curriculum Reform in Pakistan: A Historical Overview

- 5.1 National Education Policies and curriculum reforms (1947–present)
- 5.2 The Single National Curriculum (SNC)
- 5.3 Critical evaluation of implementation challenges
- 5.4 Comparative study: Pakistan and selected developing countries

Unit 6: Strategies for Implementing Curriculum Change

- 6.1 Curriculum mapping and alignment
- 6.2 Teacher training and capacity building
- 6.3 Monitoring, evaluation, and feedback mechanisms
- 6.4 Role of school leadership and curriculum specialists

Unit 7: Role of Technology in Curriculum Innovation

- 7.1 ICT integration in curriculum
- 7.2 Digital learning resources (LMS, MOOCs, educational apps)
- 7.3 Blended and flipped classrooms
- 7.4 Use of AI and data in curriculum planning

Unit 8: Designing and Proposing a Curriculum Innovation Project

- 8.1 Identifying a need for innovation
- 8.2 Proposal writing and presentation
- 8.3 Evaluating feasibility and impact
- 8.4 Group project: Develop a curriculum innovation plan for a local school or subject area

Recommended Texts

1. Fullan, M. (2020). *The new meaning of educational change* (5th ed.). Teachers College Press.
2. Ornstein, A. C., & Hunkins, F. P. (2021). *Curriculum: Foundations, principles, and issues* (8th ed.). Pearson.
3. Kelly, A. V. (2023). *The curriculum: Theory and practice* (7th ed.). Bloomsbury Academic.
4. Null, W., & Bohan, C. (2023). *Curriculum: From theory to practice* (2nd ed.). Rowman & Littlefield.
5. Print, M. (2022). *Curriculum development and design* (2nd ed.). Routledge.
6. Posner, G. J. (2022). *Analyzing the curriculum* (4th ed.). McGraw-Hill Education.

Suggested Readings

1. Schiro, M. S. (2022). *Curriculum theory: Conflicting visions and enduring concerns* (3rd ed.). SAGE.
2. UNESCO. (2021). *Reimagining our futures together: A new social contract for education*.
3. UNESCO Publishing, Holmes, B., McLean, M. (2020). *The Curriculum: A Comparative Perspective*. Routledge
4. Ornstein, A. C., & Hunkins, F. P. (2018). *Curriculum: Foundations, principles, and issues* (7th ed.). Pearson.
5. Fullan, M. (2016). *The new meaning of educational change* (5th ed.). Teachers College Press.
6. Marsh, C. J., & Willis, G. (2007). *Curriculum: Alternative approaches, ongoing issues* (4th ed.). Pearson.

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7. Kelly, A. V. (2009). *The curriculum: Theory and practice* (6th ed.). SAGE.
8. Young M.F.D., Lambert D., Roberts C., Roberts M. (2014). *Knowledge and the Future School. Curriculum and social justice.*

🌐 *Web Resources*

1. **UNESCO – Curriculum Development**
<https://www.unesco.org/en/education/curriculum>
2. **International Bureau of Education (IBE) – Curriculum Innovation and Reform**
<https://www.ibe.unesco.org/en/areas-of-action/curriculum>
3. **OECD – Education Policy Outlook**
<https://www.oecd.org/education/policyoutlook.htm>
4. **Edutopia – Innovation in Education**
<https://www.edutopia.org/topic/education-innovation>
5. **Curriculum Studies Journal** (Taylor & Francis)
<https://www.tandfonline.com/toc/tcus20/current>
6. **Education Development Trust – System reform and curriculum change**
<https://www.educationdevelopmenttrust.com>
7. **Academia.edu** – Research papers on curriculum reform in Pakistan and globally
<https://www.academia.edu/>
8. **ERIC (Education Resources Information Center)**
<https://eric.ed.gov/>
9. **National Curriculum Council (Pakistan)**
<http://www.mofept.gov.pk>
10. **Global Partnership for Education (GPE)**
<https://www.globalpartnership.org/>

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EDUC-6252**Curriculum Adaptation****3(3-0)****Course Description**

This course explores the principles and practices of adapting curricula to meet diverse educational needs in Pakistani contexts. Students will examine the theoretical foundations of curriculum design and the importance of modification to address varying student abilities, cultural backgrounds, and institutional requirements. Emphasis is placed on strategies for inclusive education, differentiated instruction, and aligning adaptations with national educational policies. Teachers will learn to analyze, modify, and implement curriculum content and instruction in a variety of educational settings.

Course Objectives:

After completing this course students will be able to:

1. Define the concept of curriculum adaptation and distinguish it from curriculum modification and accommodation.
2. Explain the principles of inclusive education and the importance of adapting curriculum for diverse learners.
3. Identify various types of learner diversity, including disabilities, giftedness, language differences, and socio-cultural backgrounds.
4. Apply frameworks such as Universal Design for Learning (UDL), Differentiated Instruction (DI), and Culturally Responsive Teaching (CRT) in curriculum planning.
5. Modify instructional materials and classroom environments to meet the unique needs of individual learners.
6. Design and implement adapted lesson plans that align with learning goals and accommodate diverse learning needs.
7. Develop assessment tools that are accessible and fair to all learners, including alternative assessments.
8. Collaborate effectively with other educators, specialists, and families to plan, monitor, and evaluate curriculum adaptations.
9. Reflect critically on their own teaching practices to continuously improve curriculum accessibility and effectiveness for all students.

Course Outline**Unit 1: Introduction to Curriculum Adaptation**

- 1.1 Concept and importance of curriculum adaptation
- 1.2 Difference between curriculum modification, differentiation, and accommodation
- 1.3 Legal and ethical responsibilities in inclusive education
- 1.4 Principles of inclusive curriculum design

Unit 2: Understanding Learner Diversity

- 2.1 Types of learner diversity (disabilities, giftedness, cultural, linguistic)
- 2.2 Learning styles and multiple intelligences
- 2.3 Identifying individual learning needs
- 2.4 Role of assessment in identifying needs for curriculum adaptation

Unit 3: Frameworks and Approaches to Adaptation

- 3.1 Differentiated instruction (content, process, product, environment)
- 3.2 Universal Design for Learning (UDL) principles
- 3.3 Response to Intervention (RTI)
- 3.4 Culturally Responsive Teaching (CRT)

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Unit 4: Adapting Curriculum Content and Materials

- 4.1 Content simplification and enrichment
- 4.2 Scaffolding techniques and strategies
- 4.3 Using assistive technologies and visual supports
- 4.4 Adapting textbooks, worksheets, and online content

Unit 5: Instructional Strategies and Classroom Management

- 5.1 Cooperative and peer-assisted learning
- 5.2 Flexible grouping and student choice
- 5.3 Multisensory teaching approaches
- 5.4 Classroom setup and behavior support plans

Unit 6: Adapting Assessment Practices

- 6.1 Principles of fair and accessible assessment
- 6.2 Formative and summative assessment adaptations
- 6.3 Alternative assessment methods (portfolios, projects, checklists)
- 6.4 Using rubrics for individualized learning outcomes

Unit 7: Curriculum Adaptation for Specific Needs

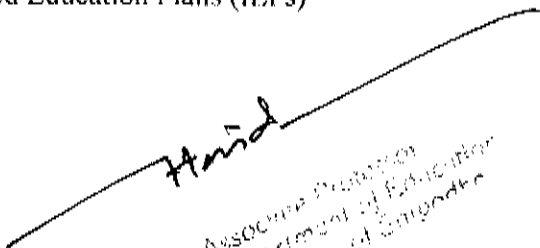
- 7.1 Students with learning disabilities
- 7.2 Students with visual, hearing, or physical impairments
- 7.3 Students with ADHD and behavioral challenges
- 7.4 Students with language barriers or ELLs

Unit 8: Collaborative Roles in Curriculum Adaptation

- 8.1 Role of teachers, special educators, and therapists
- 8.2 Working with families and communities
- 8.3 Interdisciplinary collaboration and IEP teams
- 8.4 Monitoring progress and continuous improvement
- 8.5 Using student data to refine curriculum practices
- 8.6 Feedback loops and continuous improvement

Unit 9: Legal and Ethical Considerations in Curriculum Adaptation

- 9.1 Educational rights of children with disabilities (e.g., IDEA, UNCRPD)
- 9.2 Inclusive education policy in Pakistan and other global contexts
- 9.3 Ethical issues in curriculum modification
- 9.4 Documentation and Individualized Education Plans (IEPs)



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Recommended Texts

1. Okhee Lee, Allison Haas & Scott E. Grapin (2025). *Science Education for Equity and Justice with Multilingual Learners*.
2. Shikha Pokhriyal (2023). *Curriculum Designing, Adaptation and Evaluation*.
3. Vaughn, Bos & Schumm (2023). *Teaching Students Who Are Exceptional, Diverse, and at Risk in the General Education Classroom* (8th ed.).
4. Janet A. Hale (2022). *A Guide to Curriculum Mapping: Planning, Implementing, and Sustaining the Process*.
5. Janet A. Hale (2022). *An Educational Leader's Guide to Curriculum Mapping: Creating and Sustaining Collaborative Cultures*.
6. Janet A. Hale (2022). *Upgrade Your Curriculum: Practical Ways to Transform Learning and Engage Students*.

Suggested Readings

1. Janet A. Hale (2022). *A Guide to Documenting Learning: Making Thinking Visible, Meaningful, Shareable, and Amplified*.
2. Hallahan, D. P., Kauffman, J. M., & Pullen, P. C. (2022). *Exceptional learners: An introduction to special education* (15th ed.). Pearson.
3. Smith, T. E. C., Polloway, E. A., Patton, J. R., & Dowdy, C. A. (2022). *Teaching students with special needs in inclusive settings* (8th ed.). Pearson.
4. Friend, M., & Bursuck, W. D. (2021). *Including students with special needs: A practical guide for classroom teachers* (8th ed.). Pearson.
5. Rauf, M. (2020). *Inclusive education in Pakistan: Enhancing access and quality*. National Book Foundation.
6. Michael Zisuh Ngoasong (2022). *Curriculum Adaptation for Blended Learning in Resource-Scarce Contexts*.
7. Westwood, P. (2017). *Commonsense methods for children with special educational needs* (8th ed.). Routledge.
8. Tomlinson, C. A. (2014). *The differentiated classroom: Responding to the needs of all learners* (2nd ed.). ASCD.

🌐 Web Resources

1. **National Curriculum Council Pakistan**
<http://ncc.gov.pk>
For Pakistan-specific curriculum adaptation guidelines, inclusive frameworks, and SNC documents.
2. **Pakistan Ministry of Federal Education & Professional Training**
<https://www.mofept.gov.pk>
Offers access to education policies, inclusive education strategies, and curriculum plans.
3. **CAST - Universal Design for Learning (UDL)**
<https://www.cast.org>
Framework and tools to support curriculum adaptation for diverse learners using UDL principles.
4. **National Center on Accessible Educational Materials**
<https://aem.cast.org>
Offers guidance on adapting learning materials for accessibility.

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5. **IRIS Center (Vanderbilt University)**
<https://iris.peabody.vanderbilt.edu>
Evidence-based resources for special education, curriculum modification, and instructional strategies.
6. **UNESCO Inclusive Education**
<https://en.unesco.org/themes/inclusion-in-education>
For global policies and practices related to curriculum adaptation and inclusive education.

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University of the Pacific

Course Description

This course explores the curriculum from a comparative and international perspective, examining how cultural, political, economic, and historical factors shape education systems and curriculum structures around the world. It emphasizes critical analysis of various curriculum models, reforms, and innovations across countries and regions, including implications for educational policy and practice in Pakistan. Learners will develop a global understanding of curriculum planning, implementation, and evaluation in diverse educational contexts.

Course Objectives

By the end of the course, students will be able to:

1. Describe the foundations and significance of comparative curriculum studies.
2. Analyze the influence of political, social, and cultural contexts on curricula in various countries.
3. Compare curriculum design, implementation, and reform processes globally.
4. Examine global trends, innovations, and challenges in curriculum development.
5. Reflect on the implications of international curriculum comparisons for Pakistan.

Course Outline**Unit 1: Introduction to Comparative Curriculum Studies**

- 1.1 Definition and scope
- 1.2 Historical development of comparative education and curriculum studies
- 1.3 Importance of comparative analysis in curriculum reform
- 1.4 Relationship between education, curriculum, and society

Unit 2: Theoretical Foundations of Comparative Curriculum

- 2.1 Theories and approaches to comparative education (e.g., Bereday, Noah & Eckstein)
- 2.2 Frameworks for analyzing curricula (e.g., content, structure, pedagogy, outcomes)
- 2.3 Determinants of curriculum differences: cultural, political, economic

Unit 3: Curriculum Models and Designs Across Countries

- 3.1 Subject-centered, learner-centered, problem-centered approaches
- 3.2 National curriculum frameworks: centralized vs. decentralized systems
- 3.3 Curriculum integration and interdisciplinarity
- 3.4 Comparative case studies (e.g., UK, Finland, Singapore, South Korea, Pakistan)
- 3.5 Models of teacher education across countries

Unit 4: Curriculum Development and Implementation

- 4.1 Who controls curriculum? National vs. regional authorities
- 4.2 Policy making and curriculum development processes
- 4.3 Role of curriculum authorities and stakeholders
- 4.4 Teacher involvement and capacity in curriculum implementation
- 4.5 Curriculum innovations and classroom realities
- 4.6 Decentralization and curriculum autonomy

Unit 5: Global Curriculum Trends and Reforms

- 5.1 International assessments (PISA, TIMSS) and their curricular implications
- 5.2 21st-century skills and competency-based curricula

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- 5.3 STEM, environmental, and digital literacies in global curricula
- 5.4 UNESCO, OECD, and World Bank roles in shaping curriculum reform

Unit 6: Curriculum Evaluation and Quality Assurance

- 6.1 Approaches to curriculum evaluation (formative, summative)
- 6.2 International standards and benchmarks
- 6.3 Monitoring and quality assurance mechanisms
- 6.4 Data-driven curriculum improvement

Unit 7: Curriculum and Equity: Global Perspectives

- 7.1 Inclusive education and special needs curricula
- 7.2 Language policy and minority education
- 7.3 Gender-sensitive curriculum design
- 7.4 Addressing social justice through curriculum reform

Unit 8: Curriculum in Pakistan: A Comparative Reflection

- 8.1 Evolution of curriculum in Pakistan
- 8.2 National Curriculum Frameworks and Single National Curriculum (SNC)
- 8.3 Challenges and innovations in Pakistani curriculum
- 8.4 Lessons from international best practices for curriculum enhancement in Pakistan

Recommended Texts


1. Crossley, M., & Tikly, L. (2024). *Reimagining comparative education: Contextual realities and global challenges*. Routledge.
2. Peterson, A. C., & Wiseman, A. W. (Eds.). (2023). *The impact of global testing on teaching and learning: Comparative perspectives*. Emerald Publishing.
3. Macpherson, I., & Leung, F. K. S. (2023). *Curriculum reform in a global context: Learning from international case studies*. Springer.
4. Menter, I., & Hulme, M. (2023). *Learning policy: International perspectives in education*. Routledge.
5. Discusses the influence of policy on curriculum reforms and educational practices globally. Snyder, C., & Dillow, S. (2022). *Comparative perspectives on curriculum and learning*. Routledge.
6. Government of Pakistan. (2021). *Single National Curriculum (SNC) documents (Grades I–VIII)*. Ministry of Federal Education and Professional Training.

Suggested Readings

1. Aziz, K. K. (2018). *The curriculum of education in Pakistan: A historical and comparative perspective*. National Book Foundation.
2. Phillips, D., & Schweisfurth, M. (2014). *Comparative and international education: An introduction to theory, method, and practice* (2nd ed.). Bloomsbury.
3. Bray, M., Adamson, B., & Mason, M. (Eds.). (2014). *Comparative education research: Approaches and methods* (2nd ed.). Springer.
4. Cowen, R., & Kazamias, A. M. (Eds.). (2009). *International handbook of comparative education*. Springer.
5. Kelly, A. V. (2009). *The curriculum: Theory and practice* (6th ed.). SAGE.
6. Valverde, G. A. (2009). *Curriculum policy and the politics of what should be learned in schools*. Taylor & Francis.

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7. Shahid, S. M. (2010). *Education curriculum and teaching strategies*. Azeem Academy, Lahore.
8. Crossley, M., & Watson, K. (2003). *Comparative and international research in education: Globalisation, context and difference*. RoutledgeFalmer.
9. Benavot, A., & Braslavsky, C. (Eds.). (2006). *School knowledge in comparative and historical perspective: Changing curricula in primary and secondary education*. Springer.

 *Web Resources*

1. **UNESCO – International Bureau of Education (IBE):**
<https://www.ibe.unesco.org>
(Global curriculum databases, frameworks, and policy guides)
2. **OECD Education Policy Outlook:**
<https://www.oecd.org/education/policyoutlook.htm>
(Comparative data and education policy analyses)
3. **World Bank Education Global Practice:**
<https://www.worldbank.org/en/topic/education>
(Education data, policy briefs, and financing information)
4. **National Curriculum Council (Pakistan):**
<https://ncc.gov.pk>
(Single National Curriculum, national reforms, textbook policies)
5. **ERIC (Education Resources Information Center):**
<https://eric.ed.gov>
(Free database of education research, articles, and reports)
6. **Global Education Monitoring Report (UNESCO):**
<https://www.unesco.org/gem-report/en>
(Comparative education indicators and global progress on SDG-4)

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Course Description

This course introduces the principles, processes, and practices of designing and developing instructional materials for diverse educational settings. It focuses on planning, creating, and evaluating evaluating print, digital, visual, and audio materials that support learning objectives. Emphasis is placed on using instructional design models (especially ADDIE), aligning content with learner needs, and integrating emerging technologies for effective learning experiences.

Course Objectives

By the end of this course, students will be able to:

1. Understand the principles of instructional material development.
2. Apply the ADDIE model in creating instructional resources.
3. Design materials that cater to diverse learning needs.
4. Utilize both traditional and digital tools for material development.
5. Evaluate and revise instructional materials based on feedback.

Course Outline

Unit 1: Introduction to Instructional Material Development

- 1.1 Definition and significance of instructional materials
- 1.2 Functions of instructional materials in teaching and learning
- 1.3 Types of instructional materials: Print, Audio, Visual, and Digital
- 1.4 Criteria for selecting and adapting instructional materials
- 1.5 Role of instructional materials in enhancing learning outcomes

Unit 2: The ADDIE Model

- 2.1 Overview of instructional design models
- 2.2 The ADDIE model: Analysis, Design, Development, Implementation, Evaluation
- 2.2 Conducting needs assessments
- 2.3 Identifying learner characteristics and learning environments
- 2.4 Applying ADDIE to Technology-Integrated Curriculum Design

Unit 3: Analysis & Design Phase

- 3.1 Conducting needs assessments
- 3.2 Identifying learner characteristics and learning environments
- 3.3 Setting clear instructional goals and objectives
- 3.4 Writing measurable learning objectives
- 3.5 Selecting appropriate instructional strategies
- 3.6 Designing assessment tools and evaluation methods

Unit 4: Development Phase

- 4.1 Creating effective lesson plans
- 4.2 Designing worksheets, handouts, and reading materials
- 4.3 Designing and creating audio and visual materials: Posters, Charts, and Models
- 4.4 Developing e-learning modules and interactive presentations
- 4.5 Integrating technology to enhance learner engagement

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Unit 5: Implementation Phase

- 5.1 Strategies for effective material delivery
- 5.2 Training educators and facilitators on material usage
- 5.3 Managing logistics and resources for material implementation
- 5.4 Monitoring fidelity of implementation across diverse educational settings

Unit 6: Evaluation Phase

- 6.1 Methods of formative and summative evaluation
- 6.2 Collecting and analyzing feedback from learners and instructors
- 6.3 Revising materials based on evaluation results
- 6.4 Using data-driven decision-making to enhance instructional effectiveness

Unit 7: Open Educational Resources (OER)

- 7.1 Understanding the concept of OER
- 7.2 Benefits and challenges of using OER in instructional material development
- 7.3 Exploring platforms for accessing and contributing to OER
- 7.4 Licensing and copyright considerations in OER creation and use

Unit 8: Trends in Instructional Material Development

- 8.1 Emerging technologies in material development: AR/VR, AI, and gamification
- 8.2 The role of mobile learning and micro-learning in modern education
- 8.3 Adapting materials for online and hybrid learning environments
- 8.4 Personalized learning and adaptive instructional systems

Recommended Texts

1. Molenda, M. (2022). *Instructional design theories and models: A new paradigm of instructional theory* (Vol. IV). Routledge.
2. Mayer, R. E. (2020). *Multimedia learning* (3rd ed.). Cambridge University Press.
3. Morrison, G. R., Ross, S. M., Kalman, H. K., & Kemp, J. E. (2020). *Designing effective instruction* (8th ed.). Wiley.
4. Smaldino, S. E., Lowther, D. L., & Russell, J. D. (2019). *Instructional technology and media for learning* (12th ed.). Pearson.
5. Reiser, R. A., & Dempsey, J. V. (Eds.). (2017). *Trends and issues in instructional design and technology* (4th ed.). Pearson.
6. Branch, R. M. (2009). *Instructional design: The ADDIE approach*. Springer.

Suggested Readings

1. Bates, A. W. (Tony). (2019). *Teaching in a digital age: Guidelines for designing teaching and learning* (2nd ed.). Open Textbook Library.
2. Oliva, P.F. (2015). *Developing the Curriculum* (4th ed.). Longman.
3. Nicholls, A., & Nicholls, S.H. (2018). *Developing a Curriculum: A Practical Guide*. Routledge.
4. Reiser, R.A., & Dempsey, J.V. (2012). *Trends and Issues in Instructional Design and Technology* (3rd ed.). Pearson Education.
5. Taba, H. (1962). *Curriculum Development: Theory and Practice*. Harcourt, Brace & World.
6. Wiggins, G., & McTighe, J. (2005). *Understanding by Design*.

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7. Heinich, R., Molenda, M., Russell, J. D., & Smaldino, S. E. (2001). *Instructional media and technologies for learning* (7th ed.). Pearson.

🌐 **Web Resources**

1. **MERLOT (Multimedia Educational Resource for Learning and Online Teaching)**
<https://www.merlot.org>
A curated collection of free and open online teaching, learning, and faculty development services.
2. **OER Commons**
<https://www.oercommons.org>
A platform to find and share open educational resources for instructional design.
3. **Edutopia – George Lucas Educational Foundation**
<https://www.edutopia.org>
Offers innovative strategies and tools for effective material development.
4. **InstructionalDesign.org**
<https://www.instructionaldesign.org>
Provides concise explanations of key instructional design models and strategies.
5. **Open Textbook Library – Instructional Design**
<https://open.umn.edu/opentextbooks>
Offers freely accessible textbooks on instructional design and material development.
6. **CAST: Universal Design for Learning (UDI.)**
<https://www.cast.org>
Resources on designing inclusive instructional materials for all learners.

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Specialization 6: STEM Education

Specialization 6: STEM Education (Select any Six Courses)				
1.	EDUC-6255	Introduction to STEM Education	3(3-0)	<i>Nil</i>
2.	EDUC-6256	Integrating STEM Education Methods	3(3-0)	<i>Nil</i>
3.	EDUC-6257	Instructional Scaffolding in STEM Education	3(3-0)	<i>Nil</i>
4.	EDUC-6258	STEM Curriculum Design and Instructional Materials	3(3-0)	<i>Nil</i>
5.	EDUC-6259	Learning in STEM	3(3-0)	<i>Nil</i>
6.	EDUC-6260	Assessment in STEM Education	3(3-0)	<i>Nil</i>
7.	EDUC-6261	Practicum in STEM Teaching	3(3-0)	<i>Nil</i>

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EDUC-6255
Course Description

Introduction to STEM Education

3(3-0)

The course "Instructional Scaffolding in STEM Education" offers an in-depth exploration of the role of instructional scaffolding in facilitating effective STEM learning experiences. The course delves into problem-centered instructional approaches and their connection to scaffolding strategies. It covers the historical development of instructional scaffolding, emphasizing its foundational elements, such as dynamic assessment, providing appropriate support, and fostering intersubjectivity. Various forms of scaffolding, including one-to-one scaffolding, peer scaffolding, and computer-based scaffolding, are examined, with a focus on the theoretical bases of computer-based scaffolding, such as Activity Theory, ACT-R, and Knowledge Integration. The interplay between computer-based and one-to-one scaffolding is explored to understand how these approaches complement each other in enhancing STEM education.

Course Objectives

Upon the successful completion of this course the students will be able to:

1. Explore the role of instructional scaffolding in problem-centered instructional approaches within STEM education.
2. Understand the historical development and foundational elements of instructional scaffolding, including dynamic assessment and appropriate support.
3. Evaluate different forms of scaffolding, such as one-to-one, peer, and computer-based scaffolding, and their effectiveness in various STEM disciplines and grade levels.
4. Apply theoretical frameworks, including Activity Theory, ACT-R, and Knowledge Integration, to design computer-based scaffolding strategies.
5. Analyze the interplay between computer-based and one-to-one scaffolding in enhancing STEM learning experiences.
6. Identify context-specific factors, including STEM discipline, student demographics, and instructional models, influencing the use of computer-based scaffolding.
7. Design and implement computer-based scaffolding strategies to achieve targeted learning outcomes, emphasizing higher-order thinking skills and deep understanding of STEM content.

Course Outline

Unit 1: Introduction to Problem-Centered Instruction and Scaffolding in STEM

- 1.1 Problem-Centered Instructional Approaches and STEM
- 1.2 Role of Scaffolding in STEM Learning
- 1.3 Importance of Scaffolding in Promoting Self-Regulated Learning

Unit 2: Instructional Scaffolding – Foundations and Evolving Definitions

- 2.1 Historical Definition and Elements of Scaffolding
- 2.2 The Role of Dynamic Assessment in Scaffolding
- 2.3 Providing Just the Right Amount of Support
- 2.4 Concept of Inter-subjectivity in Scaffolding
- 2.5 Forms of Scaffolding:
 - 2.5.1 One-to-One Scaffolding
 - 2.5.2 Peer Scaffolding
 - 2.5.3 Computer-Based Scaffolding

Unit 3: Instructional Scaffolding – Foundations and Evolving Definitions

- 3.1 Considerations in Applying the Scaffolding Metaphor to Computer Tools
- 3.2. Theoretical Bases of Computer-Based Scaffolding

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- 2.7.1 Activity Theory
- 2.7.2 Knowledge Integration
- 3.3. Comparison of Theoretical Foundations for Designing Computer-Based Scaffolding
- 3.4. Interplay Between Computer-Based and One-to-One Scaffolding

Unit 4: Contexts for the Use of Computer-Based Scaffolding

- 4.1 Scaffolding Across STEM Disciplines
- 4.2 Impact of Student Demographics on Scaffolding Use
- 4.3 Instructional Models Utilizing Scaffolding:
 - 4.3.1 Problem-Based Learning (PBL)
 - 4.3.2 Case-Based Learning
 - 4.3.3 Design-Based Learning
 - 4.3.4 Inquiry-Based Learning
 - 4.3.5 Project-Based Learning
- 3.4 Integration with Other Instructional Approaches

Unit 5: Learning Outcomes and Assessment of Computer-Based Scaffolding

- 5.1 Targeted Learning Outcomes of Scaffolding:
 - 5.1.1 Higher-Order Thinking Skills
 - 5.1.2 Ill-Structured Problem-Solving Ability
 - 5.1.3 Argumentation Ability
 - 5.1.4 Self-Directed Learning Ability
- 5.2 Alignment with NGSS and Deep Learning of STEM Content
- 5.3 Assessment of Students' Ability to Transfer Knowledge Across STEM Contexts

Unit 6: Strategies and Effectiveness of Computer-Based Scaffolding

- 6.1 Scaffolding Functions:
 - 6.1.1 Conceptual Scaffolding
 - 6.1.2 Strategic Scaffolding
 - 6.1.3 Metacognitive Scaffolding
 - 6.1.4 Motivational Scaffolding
- 6.2 Results from Meta-Analysis on Context-Specific Use
- 6.3 Customization in Scaffolding:
 - 6.3.1 Presence or Absence
 - 6.3.2 Customization Basis
- 6.4 Scaffolding's Effectiveness Across Different STEM Disciplines
- 6.5 Scaffolding's Effectiveness by Grade Level

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Recommended Texts

1. Kelley, T. R., Knowles, J. G., Han, J., & Sung, E. (2020). *Integrated STEM education: Theory and practice*. Purdue University Press.
2. National Science Teaching Association (NSTA). (2018). *Help students learn with STEM: Articles from the Science Teacher*. NSTA Press.
3. Belland, B. R. (2017). *Instructional scaffolding in STEM education: Strategies and efficacy evidence*. Springer. <https://doi.org/10.1007/978-3-319-02565-0>
4. English, L. D. (Ed.). (2016). *Global perspectives and practices in STEM education*. Springer. <https://doi.org/10.1007/978-3-319-39280-3>

5. Johnson, C. C., Peters-Burton, E. E., & Moore, T. J. (Eds.). (2015). *STEM roadmap: A framework for integrated STEM education*. Routledge. <https://doi.org/10.4324/9781315753154>
6. Reiser, B. J., & Tabak, I. (2014). Scaffolding. In R. K. Sawyer (Ed.), *The Cambridge handbook of the learning sciences* (2nd ed., pp. 44-62). Cambridge University Press.
7. Sawyer, R. K. (Ed.). (2014). *The Cambridge handbook of the learning sciences* (2nd ed.). Cambridge University Press.

Suggested Readings

1. Honey, M., Pearson, G., & Schweingruber, H. (Eds.). (2014). *STEM integration in K-12 education: Status, prospects, and an agenda for research*. National Academies Press. <https://doi.org/10.17226/18612>
2. Capraro, R. M., Capraro, M. M., & Morgan, J. R. (2013). *STEM project-based learning: An integrated science, technology, engineering, and mathematics (STEM) approach* (2nd ed.). Sense Publishers.
3. Ertmer, P. A., & Newby, T. J. (2013). Behaviorism, cognitivism, constructivism: Comparing critical features from an instructional design perspective. *Performance Improvement Quarterly*, 26(2), 43-71.
4. Vasquez, J. A., Comer, M., & Sneider, C. (2013). *STEM lesson essentials: Integrating science, technology, engineering, and mathematics*. Heinemann.
5. Bybee, R. W. (2013). *The case for STEM education: Challenges and opportunities*. NSTA Press. <https://my.nsta.org/resource/9237>
6. National Research Council. (2011). *A framework for K-12 science education: Practices, crosscutting concepts, and core ideas*. National Academies Press. <https://doi.org/10.17226/13165>
7. Van de Pol, J., Volman, M., & Beishuizen, J. (2010). Scaffolding in teacher-student interaction: A decade of research. *Educational Psychology Review*, 22(3), 271-296.

🌐 Web Resources

1. National Science Teaching Association. (n.d.). *Scaffolding in STEM instruction*. <https://www.nsta.org>
2. Edutopia. (n.d.). *Scaffolding strategies to support student learning*. <https://www.edutopia.org/blog/scaffolding-lessons-six-strategies-rebecca-alber>
3. TeachThought. (n.d.). *25 ways to scaffold learning*. <https://www.teachthought.com/learning/25-ways-to-scaffold-learning>
4. Next Generation Science Standards. (n.d.). *Integrating NGSS with scaffolding practices*. <https://www.nextgenscience.org>
5. Vanderbilt University Center for Teaching. (n.d.). *Scaffolding teaching and learning*. <https://cft.vanderbilt.edu/guides-sub-pages/scaffolding/>
6. Institute of Education Sciences. (n.d.). *Using technology to support student learning*. <https://ies.ed.gov/ncee/wwc/PracticeGuide/25>
7. Education Corner. (n.d.). *Instructional scaffolding -- What is it and how to use it?* <https://www.educationcorner.com/instructional-scaffolding.html>
8. International Society for Technology in Education (ISTE). (n.d.). *Scaffolding and technology integration*. <https://www.iste.org>

Handwritten:
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EDUC-6256
Course Description

Integrating STEM Education Methods

3(3-0)

This course focuses on the methods of instruction for integrated STEM (Science, Technology, Engineering, and Mathematics) education at the K-8 level. This class will focus on essential elements/techniques of integrated STEM education in order to deepen student understanding of each discipline by contextualizing concepts and increase student interest in STEM disciplines through exposure to socially and culturally relevant STEM contexts.

Course Objectives

Upon the successful completion of this course the students will be able to:

1. Discuss trends and issues in integrated STEM education.
2. Create an integrated STEM lesson plan with a focus on engineering design, mathematical modeling, and technology integration.
3. Demonstrate application of the materials and resources available for implementing an integrated STEM approach to the teaching and learning of STEM.
4. Create effective integrated STEM lessons that respect the diversity of backgrounds in a classroom.
5. Demonstrate a positive and professional attitude toward the teaching and learning of STEM education.
6. Synthesize theoretical research and application literature into models of effective STEM education teaching.

Course Outline

Unit 1: Introduction to Integrated STEM Education

- 1.1 Defining STEM and Integrated STEM
- 1.2 The need for interdisciplinary learning in 21st-century classrooms
- 1.3 Examples of real-world STEM problems
- 1.4 Difference between segregated and integrated teaching approaches
- 1.5 Historical evolution and global perspectives on STEM education

Unit 2: Instructional Frameworks for Integrated STEM

- 2.1 The 5E Model of Instruction: Engage, Explore, Explain, Elaborate, Evaluate
- 2.2 Project-Based Learning (PBL) in STEM Education
- 2.3 Understanding by Design (UbD) framework
- 2.4 STEM Integration Continuum: Disciplinary → Multidisciplinary → Interdisciplinary → Transdisciplinary
- 2.5 Integration with NGSS and 21st-century learning skills

Unit 3: Engineering Design in the STEM Classroom

- 3.1 The Engineering Design Cycle: Ask, Imagine, Plan, Create, Test, Improve
- 3.2 Engineering habits of mind: Resilience, Iteration, Collaboration
- 3.3 Engineering Design vs. Scientific Method
- 3.4 STEM careers and the role of engineering in society
- 3.5 Integrating sustainability and ethical considerations into engineering design

Unit 4: Mathematical Modeling for Problem Solving

- 4.1 Definition and purpose of mathematical modeling
- 4.2 Steps in the modeling process: Problem Definition, Assumptions, Formulation, Solving,

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 University of Tennessee

Validation

4.3 Classroom applications: Graphing climate data, Budgeting projects, Probability in experiments

4.4 Strategies for cross-disciplinary math integration

Unit 5: Technology Integration in STEM

5.1 Technology tools for STEM: Simulations (PhET), Coding (Scratch), Robotics, Data collection apps

5.2 SAMR and TPACK models of technology integration

5.3 Role of technology in promoting collaboration, problem-solving, and creativity

5.4 Ensuring technology equity and accessibility in diverse classrooms

Unit 6: Collaborative Inquiry and Technology Integration

6.1 Participant-led topic paper presentations

6.2 Peer feedback protocol and collaborative reflection

6.3 Exploration of successes and challenges in technology integration

6.4 Showcasing innovative technology applications in STEM classrooms

Unit 7: Designing and Presenting Integrated STEM Lessons

7.1 Key elements of effective STEM lesson planning

- Real-world context
- Interdisciplinary approach
- Engineering or design challenge
- Student-centered instruction

7.2 Developing performance-based and formative assessments

7.3 Peer review and presentation of integrated STEM lesson plans

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Associate Professor
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Recommended Texts

1. Roehrig, G. H., Wang, H.-H., Moore, T. J., & Park, M. S. (Eds.). (2021). *Research on STEM education in the early years: Pathways to equity and inclusion*. Springer. <https://doi.org/10.1007/978-3-030-65103-3>
2. Kelley, T. R., Knowles, J. G., Han, J., & Sung, E. (2020). *Integrated STEM education: Theory and practice*. Purdue University Press.
3. Adams, D., & Hamm, M. (2020). *Shaping the future with STEM instruction: Integrating science, technology, engineering, and mathematics*. Rowman & Littlefield.
4. Stohlmann, M. (2019). *Integrated STEM education through project-based learning*. Sense Publishers.
5. Jolly, A. (2017). *STEM by design: Strategies and activities for grades 4–8*. Routledge.
6. Stohlmann, M. (2017). *Integrated STEM education through project-based learning*. Springer. <https://doi.org/10.1007/978-3-319-55883-4>
7. Hynes, M. M., Portsmouth, M., Dare, E. A., Milto, E., Rogers, C., & Hammer, D. (2017). *Infusing engineering into schools: An educator's guide*. Purdue University Press.

Suggested Readings

1. Johnson, C. C., Peters-Burton, E. E., & Moore, T. J. (Eds.). (2016). *STEM road map: A framework for integrated STEM education*. Routledge.
2. English, L. D. (Ed.). (2016). *Global perspectives and practices in STEM education*. Springer. <https://doi.org/10.1007/978-3-319-39280-3>

3. Johnson, C. C., Peters-Burton, E. E., & Moore, T. J. (Eds.). (2015). *STEM roadmap: A framework for integrated STEM education*. Routledge.
<https://doi.org/10.4324/9781315753154>
4. Honey, M., & Pearson, G. (Eds.). (2014). *STEM integration in K–12 education: Status, prospects, and an agenda for research*. National Academies Press.
5. Truesdell, P. (2014). *Engineering essentials for STEM instruction: How do I infuse real-world problem solving into science, technology, and math?* ASCD.
6. Vasquez, J. A., Sneider, C., & Comer, M. (2013). *STEM lesson essentials: Integrating science, technology, engineering, and mathematics*. Heinemann.
7. Capraro, R. M., Capraro, M. M., & Morgan, J. (2013). *STEM project-based learning: An integrated science, technology, engineering, and mathematics (STEM) approach*. Sense Publishers.

Web Resources

1. National Science Teaching Association. (n.d.). *STEM resources*.
<https://www.nsta.org/stem-resources>
2. STEM Learning. (n.d.). *STEM resource library*. <https://www.stem.org.uk/resources>
3. Next Generation Science Standards. (n.d.). *NGSS for states, by states*.
<https://www.nextgenscience.org/>
4. NASA. (n.d.). *NASA STEM engagement*. <https://stem.nasa.gov/>
5. TeachEngineering. (n.d.). *STEM curriculum for K-12*. <https://www.teachengineering.org/>
6. International Society for Technology in Education (ISTE). (n.d.). *Standards for students*.
<https://www.iste.org/standards/iste-standards-for-students>
7. PhET Interactive Simulations. (n.d.). *Free simulations for math and science*. University of Colorado Boulder. <https://phet.colorado.edu/>
8. Edutopia. (n.d.). *STEM integration resources*. <https://www.edutopia.org/stem>
9. Concord Consortium. (n.d.). *Innovative digital learning in STEM*. <https://concord.org/>
10. Smithsonian Science Education Center. (n.d.). *STEM teaching tools and resources*.
<https://ssec.si.edu/>

Harid
 Director, Department
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EDUC-6257

Instructional Scaffolding in STEM Education

3(3-0)

Course Description

This course explores the theory and practice of instructional scaffolding as a critical strategy for supporting student learning and engagement in STEM (Science, Technology, Engineering, and Mathematics) education. It provides a comprehensive understanding of how scaffolding techniques can be applied to facilitate inquiry, problem-solving, and conceptual understanding across diverse STEM disciplines and grade levels. Students will examine various models and stages of scaffolding, including cognitive, social, and metacognitive supports, with a focus on gradual release of responsibility. Emphasis is placed on aligning scaffolding with inquiry-based learning, the engineering design process, project-based learning (PBL), and differentiated instruction to meet diverse student needs in STEM classrooms.

Course Objectives

Upon the successful completion of this course the students will be able to:

1. Explore the nature of STEM education disciplines
2. Learn about STEM pedagogy and teaching methodologies
3. Examine integrative STEM learning approaches
4. Gain insights into STEM careers and problem-centered instruction
5. Develop knowledge, skills, and competencies to promote STEM thinking
6. Utilize personal technologies and scientific thinking strategies in education
7. Apply STEM cognitive tools to address real-world problems
8. Foster problem-solving abilities in elementary or secondary education
9. Analyze and engage with real-world data and STEM-related resources
10. Assess strengths and weaknesses of STEM programs, initiatives, and policies at various levels
11. Contribute to the advancement of STEM education in diverse educational contexts

Course Outline**Unit 1: Background and History of the STEM Movement**

- 1.1 What is the role of science, mathematics, technology, and engineering?
- 1.2 What is the difference between science and technology?
- 1.3 Why is STEM important?
- 1.4 The demand for skills
 - 1.4.1 National rankings and current trends
 - 1.4.2 The elementary gap, How is STEM different than traditional science and math
- 1.5 The role of problem solving and design
- 1.6 Barriers to STEM education
- 1.7 Strategies for effective STEM education
 - 1.7.1 Problem-based learning
 - 1.7.2 Performance based teaching and learning

Unit 2: The Power and Promise of STEM Education

- 2.1 Active learning and engagement
- 2.2 The role of the standards
- 2.3 Understanding by design--backwards design
- 2.4 STEM and 5E teaching
- 2.5 The relationship between the standards and engineering

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- 2.6 Delivering the standards through engineering and design
- 2.7 Using standards to develop curriculum

Unit 3: Science as a Way of Knowing

- 3.1 Inquiry-based teaching and learning
- 3.2 How does science work
- 3.3 Position of science in the modern world
- 3.4 History and nature of science
- 3.5 Unifying concepts of science, technology and engineering

Unit 4: Mathematics as a Way of Knowing

- 4.1 Position of mathematics in the modern world
- 4.2 Mathematical focal points
- 4.3 Mathematical thinking
- 4.4 Mathematical importance
- 4.5 Mathematical fit
- 4.6 Mathematics connection

Unit 5: Technology and Engineering

- 5.1 Foundational concepts
- 5.2 The engineering design loop
- 5.3 Adhering to design parameters and constraints
- 5.4 Technological assessment
- 5.5 Integration of emerging technologies (e.g., AI) in STEM education

Unit 6: Integrative STEM

- 6.1 Disciplinary, interdisciplinary, and trans-disciplinary strategies
- 6.2 Questioning/clarifying the problem
- 6.3 Identifying constraints/limitations
- 6.4 Gathering research
- 6.5 Quantifying/mental modeling
- 6.6 Visioning and graphic representation
- 6.7 Drawing and modeling (including software usage)
- 6.8 Prototyping and assessment
- 6.9 Artifact development
- 6.10 Communicating the results of engineering/design

Unit 7: Teaching Integrative STEM

- 7.1 Teaching with the end in mind
- 7.2 The role of design and engineering in the classroom
- 7.3 Curricular assessment procedures, tools, and techniques
- 7.4 Developing curriculum and activities
- 7.5 Instructional methods for teaching STEM
- 7.6 Collaboration strategies and resources
- 7.7 Differentiating instruction to meet diverse learners' needs in STEM classrooms

Recommended Texts

1. Roehrig, G. H., Wang, H.-H., Moore, T. J., & Park, M. S. (Eds.). (2021). *Research on STEM education in the early years: Pathways to equity and inclusion*. Springer.
<https://doi.org/10.1007/978-3-030-65103-3>

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2. Belland, B. R. (2017). *Instructional scaffolding in STEM education: Strategies and efficacy evidence*. Springer. <https://doi.org/10.1007/978-3-319-02565-0>
3. Reiser, B. J., & Tabak, I. (2014). *Scaffolding*. In R. K. Sawyer (Ed.), *The Cambridge handbook of the learning sciences* (2nd ed., pp. 44–62). Cambridge University Press.
4. Bybee, R. W. (2013). *The case for STEM education: Challenges and opportunities*. NSTA Press.
5. Czerniak, C. M., & Johnson, C. C. (Eds.). (2013). *Interdisciplinary STEM teaching and learning*. In *Issues and trends in science education* (Vol. 9). Springer. <https://doi.org/10.1007/978-94-007-2557-7>
6. Capraro, R. M., Capraro, M. M., & Morgan, J. (2013). *STEM project-based learning: An integrated science, technology, engineering, and mathematics (STEM) approach*. Sense Publishers.
7. Vasquez, J. A., Sneider, C., & Comer, M. (2013). *STEM lesson essentials: Integrating science, technology, engineering, and mathematics*. Heinemann.

Suggested Readings

1. Wells, G. (2009). *The meaning makers: Learning to talk and talking to learn* (2nd ed.). Multilingual Matters.
2. <https://doi.org/10.1186/s40594-016-0046-z>
3. Beers, S. Z. (2011). *21st century skills: Preparing students for their future*. STEM Education Coalition.
4. Sanders, M. (2009). *STEM, STEM education, STEMmania*. *The Technology Teacher*, 68(4), 20–26.
5. Kelley, T. R., & Knowles, J. G. (2016). *A conceptual framework for integrated STEM education*. *International Journal of STEM Education*, 3(1), 11. Honey, M., Pearson, G., & Schweingruber, H. (Eds.). (2014). *STEM integration in K–12 education: Status, prospects, and an agenda for research*. National Academies Press.
6. Herschbach, D. R. (2009). *Technology education: Foundations and perspectives*. Goodheart-Willcox Publisher.
7. Banchi, H., & Bell, R. (2008). *The many levels of inquiry*. *Science and Children*, 46(2), 26–29.

Web Resources

1. National Science Teaching Association. (n.d.). *STEM resources*. <https://www.nsta.org/stem-resources>
2. National STEM Centre (STEM Learning UK). (n.d.). *STEM resource library*. <https://www.stem.org.uk/resources>
3. Next Generation Science Standards. (n.d.). *NGSS for states, by states*. <https://www.nextgenscience.org/>
4. U.S. Department of Education. (n.d.). *STEM education*. <https://www.ed.gov/stem>
5. NASA. (n.d.). *STEM engagement*. <https://stem.nasa.gov/>
6. TeachEngineering. (n.d.). *STEM curriculum for K-12*. <https://www.teachengineering.org/>
7. The Concord Consortium. (n.d.). *Innovative digital learning in STEM*. <https://concord.org/>
8. Engineering is Elementary (EiE). (n.d.). *STEM curriculum and teacher support*. <https://www.eie.org/>
9. International Society for Technology in Education (ISTE). (n.d.). *STEM and EdTech integration*. <https://www.iste.org/>
10. Smithsonian Science Education Center. (n.d.). *STEM teaching tools and resources*. <https://ssec.si.edu/>

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EDUC-6258 STEM Curriculum Design and Instructional Materials 3(3-0)**Course Description**

This course provides an in-depth exploration of STEM curriculum design and the development of instructional materials. It focuses on essential elements of curriculum development, including backward design, curriculum mapping, learning outcome development, and the selection of appropriate resources and materials for effective STEM instruction.

Course Objectives

Upon the successful completion of this course the students will be able to:

1. Understand the principles and theories of STEM curriculum design.
2. Apply backward design principles to develop STEM curricula.
3. Create curriculum maps that align with STEM learning outcomes.
4. Select and evaluate instructional materials for STEM education.
5. Design engaging and effective instructional materials for STEM instruction

Course Outline**Unit 1. Introduction to STEM Curriculum Design**

- 1.1 Principles and Theories of STEM Curriculum Design
- 1.2 Importance of Backward Design in Curriculum Development
- 1.3 Role of Interdisciplinary Integration in Effective STEM Curriculum Planning

Unit 2. Backward Design Process

- 2.1 Identifying Desired STEM Learning Outcomes
- 2.2 Developing Essential Questions and Enduring Understandings
- 2.3 Designing Performance Tasks and Assessments

Unit 3. Curriculum Mapping in STEM

- 3.1 Aligning Curriculum with Learning Outcomes
- 3.2 Mapping STEM Concepts Across Grade Levels
- 3.3 Ensuring Coherence and Progression in STEM Curricula

Unit 4. Selecting Instructional Materials for STEM Education

- 4.1 Evaluating the Quality and Effectiveness of Instructional Resources
- 4.2 Incorporating Technology Tools and Resources in STEM Instruction
- 4.3 Adapting and Customizing Materials for Diverse Learners
- 4.4 Aligning Instructional Materials with Curriculum Standards and Learning Objectives

Unit 5. Developing Instructional Materials for STEM Instruction

- 5.1 Designing Hands-on Activities and Experiments
- 5.2 Creating Project-Based Learning Resources
- 5.3 Integrating Technology Tools in Instructional Materials
- 5.4 Incorporating Real-World Problems to Enhance Relevance and Engagement
- 5.5 Ensuring Cultural Responsiveness and Inclusivity in Instructional Design

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Recommended Texts

1. Kelley, T. R., Knowles, J. G., Han, J., & Sung, E. (2020). *Integrated STEM education: Theory and practice*. Purdue University Press.
2. English, L. D. (Ed.). (2016). *Global perspectives and practices in STEM education*. Springer. <https://doi.org/10.1007/978-3-319-39280-3>
3. Johnson, C. C., Peters-Burton, E. E., & Moore, T. J. (Eds.). (2016). *STEM road map: A framework for integrated STEM education*. Routledge.
4. <https://doi.org/10.4324/9781315753154>
5. Czerniak, C. M., & Johnson, C. C. (2014). *Interdisciplinary STEM teaching and learning*. Springer.
6. Vasquez, J. A., Comer, M., & Sneider, C. (2013). *STEM lesson essentials: Integrating science, technology, engineering, and mathematics*. Heinemann.

Suggested Readings

1. Kelley, T. R., & Knowles, J. G. (2016). *A conceptual framework for integrated STEM education*. International Journal of STEM Education, 3(1), 11. <https://doi.org/10.1186/s40594-016-0046-z>
2. Truesdell, P. (2014). *Engineering essentials for STEM instruction: How do I infuse real-world problem solving into science, technology, and math?* ASCD.
3. Capraro, R. M., Capraro, M. M., & Morgan, J. R. (2013). *STEM project-based learning: An integrated science, technology, engineering, and mathematics (STEM) approach* (2nd ed.). Sense Publishers.
4. Stohlmann, M. (2017). *Integrated STEM education through project-based learning*. Springer. <https://doi.org/10.1007/978-3-319-55883-4>
5. Vasquez, J. A., Comer, M., & Sneider, C. (2013). *STEM lesson essentials: Integrating science, technology, engineering, and mathematics*. Heinemann.
6. Bybee, R. W. (2013). *The case for STEM education: Challenges and opportunities*. NSTA Press.
7. Capraro, R. M., Capraro, M. M., & Morgan, J. R. (2013). *STEM project-based learning: An integrated science, technology, engineering, and mathematics (STEM) approach*. Sense Publishers.
8. Beers, S. Z. (2011). *21st century skills: Preparing students for their future*. STEM Education Coalition.

🌐 Web Resources

1. Next Generation Science Standards. (n.d.). *Curriculum planning and alignment resources*. <https://www.nextgenscience.org>
2. Edutopia. (n.d.). *STEM curriculum and project-based learning*. <https://www.edutopia.org/stem>
3. National Science Teaching Association. (n.d.). *STEM curriculum resources*. <https://www.nsta.org>
4. TeachEngineering. (n.d.). *Free K-12 engineering and STEM curriculum*. <https://www.teachengineering.org/>
5. Smithsonian Science Education Center. (n.d.). *STEM curriculum and materials*. <https://ssce.si.edu>
6. Concord Consortium. (n.d.). *Technology-rich STEM curriculum and research*. <https://concord.org/>

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7. STEM Learning (UK). (n.d.). *Curriculum resources and planning tools*.
<https://www.stem.org.uk/resources>
8. International Society for Technology in Education (ISTE). (n.d.). *Curriculum innovation and technology integration*. <https://www.iste.org>
9. Project-Based Learning Works (PBL Works). (n.d.). *Resources for creating PBL curricula*. <https://www.pblworks.org/>
10. U.S. Department of Education. (n.d.). *STEM education strategic plan and guidance*.
<https://www.ed.gov/stem>

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Course Description

The "Learning in STEM" course is designed to provide aspiring educators with a deep understanding of inquiry-based learning approaches in STEM education. The course emphasizes the use of hands-on experiments, problem-solving activities, and real-world applications to engage students in the process of scientific discovery and critical thinking. Participants will explore effective strategies for designing and implementing inquiry-based lessons, fostering students' curiosity, and promoting collaboration and communication skills in STEM subjects.

Course Objectives

Upon the successful completion of this course the students will be able to:

1. Understand the principles and benefits of inquiry-based learning in STEM education.
2. Explore various models and frameworks for implementing inquiry-based approaches in the classroom.
3. Design and develop inquiry-based lesson plans aligned with STEM content standards.
4. Utilize hands-on experiments, problem-solving activities, and real-world applications to engage students in scientific discovery.
5. Foster students' critical thinking, creativity, and communication skills through inquiry-based learning.
6. Assess and evaluate student learning outcomes in inquiry-based STEM lessons.
7. Incorporate technology tools and resources to support inquiry-based learning in STEM subjects

Course Outline**Unit 1. Introduction to Inquiry-Based Learning in STEM Education**

- 1.1 Definition and Characteristics of Inquiry-Based Learning
- 1.2 Benefits and Challenges of Inquiry-Based Approaches in STEM Education
- 1.3 Role of the Teacher in Facilitating Inquiry-Based Learning Experiences

Unit 2. Models and Frameworks for Inquiry-Based Learning

- 2.1 The 5E Model: Engage, Explore, Explain, Elaborate, Evaluate
- 2.2 Question-Driven Inquiry (QDI)
- 2.3 Problem-Based Learning (PBL)
- 2.4 Project-Based Learning (PBL)
- 2.5 Case-Based Learning (CBL)
- 2.6 Inquiry through Socratic Questioning and Dialogic Teaching

Unit 3. Designing Inquiry-Based Lessons

- 3.1 Setting Learning Objectives Aligned with STEM Content Standards
- 3.2 Developing Essential Questions and Guiding Inquiries
- 3.3 Selecting Appropriate Resources and Materials
- 3.4 Sequencing Activities and Managing the Inquiry Process
- 3.5 Differentiating Instruction to Meet Diverse Student Needs

Unit 4. Hands-on Experiments and Scientific Discovery

- 4.1 Planning and Conducting Hands-on Experiments in STEM
- 4.2 Facilitating Student-Led Investigations and Data Collection

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 Department of Education
 University of Sargodha

- 4.3 Analyzing and Interpreting Experimental Results
- 4.4 Drawing Conclusions and Making Real-World Connections

Unit 5. Promoting Critical Thinking and Communication in Inquiry-Based Learning

- 5.1 Encouraging Higher-Order Thinking Skills in STEM Inquiries
- 5.2 Facilitating Scientific Discourse and Collaborative Learning
- 5.3 Using Questioning Strategies to Guide Student Reflection
- 5.4 Incorporating Oral and Written Communication Tasks

Unit 6. Assessment and Evaluation in Inquiry-Based STEM Lessons

- 6.1 Formative and Summative Assessment Strategies
- 6.2 Designing Rubrics and Performance Criteria
- 6.3 Providing Constructive Feedback to Support Growth
- 6.4 Assessing Process Skills and Scientific Reasoning

Recommended Texts

1. Windschitl, M., Thompson, J., & Braaten, M. (2018). *Ambitious science teaching*. Harvard Education Press
- Kelley, T. R., & Knowles, J. G. (2016). *A conceptual framework for integrated STEM education*. *International Journal of STEM Education*, 3(1), 1–11. <https://doi.org/10.1186/s40594-016-0046-z>.
2. Windschitl, M., Thompson, J., & Braaten, M. (2018). *Ambitious science teaching*. Harvard Education Press.
3. Boaler, J. (2015). *Mathematical mindsets: Unleashing students' potential through creative math, inspiring messages and innovative teaching*. Jossey-Bass.
4. Honey, M., Pearson, G., & Schweingruber, H. (Eds.). (2014). *STEM integration in K–12 education: Status, prospects, and an agenda for research*. National Academies Press. <https://doi.org/10.17226/18612>
5. Moore, T. J., & Smith, K. A. (2014). *Advancing the STEM agenda: Quality STEM education for all students*. Routledge.
6. Bybee, R. W. (2014). *The BSCS 5E instructional model: Creating teachable moments*. NSTA Press.

Suggested Readings

1. Lederman, N. G., & Abell, S. K. (Eds.). (2014). *Handbook of research on science education* (Vol. 2). Routledge.
2. Harlen, W. (2013). *Assessment & inquiry-based science education: Issues in policy and practice*. Nuffield Foundation.
3. Capraro, R. M., Capraro, M. M., & Morgan, J. R. (2013). *STEM project-based learning: An integrated science, technology, engineering, and mathematics (STEM) approach* (2nd ed.). Sense Publishers.
4. Lewellyn, D. (2013). *Teaching high school science through inquiry and argumentation* (2nd ed.). Corwin Press.
5. Wheeler-Toppin, J. (2011). *Once upon a life science book: 12 interdisciplinary activities to create confident readers*. NSTA Press.
6. Bell, R. L., Smetana, L., & Binns, I. (2005). *Simplifying inquiry instruction*. *The Science Teacher*, 72(7), 30–33.
7. Kuhn, D. (2005). *Education for thinking*. Harvard University Press.

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1. National Science Teaching Association. (n.d.). *Inquiry-based learning resources*. <https://www.nsta.org/inquiry>
2. Edutopia. (n.d.). *Inquiry-based learning*. <https://www.edutopia.org/topic/inquiry-based-learning>
3. BSCS Science Learning. (n.d.). *BSCS 5E instructional model*. <https://bscs.org/bscs-5e-instructional-model/>
4. Exploratorium. (n.d.). *Resources for inquiry-based science education*. <https://www.exploratorium.edu/education>
5. PBLWorks. (n.d.). *Project-based learning resources and tools*. <https://www.pblworks.org/>
6. The Concord Consortium. (n.d.). *Technology-enhanced inquiry for STEM*. <https://concord.org/>

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University of San Diego

EDUC-6260**Assessment in STEM****3(3-0)****Course Description:**

This course aims to equip prospective STEM educators with the knowledge, skills, and strategies needed to design, implement, and interpret assessments in integrated STEM learning environments. Participants will explore assessment for, of, and as learning, including authentic, formative, and summative tools tailored for inquiry-based, project-based, and interdisciplinary instruction.

Course Objectives

By the end of the course, students will be able to:

1. Explain key concepts, types, and purposes of assessment in STEM education.
2. Design formative and summative assessments aligned with integrated STEM objectives.
3. Apply assessment tools and strategies for evaluating engineering design, scientific inquiry, and problem-solving.
4. Use rubrics, checklists, and performance-based assessments for authentic STEM tasks.
5. Analyze assessment data to inform instruction and improve student learning.
6. Reflect on equity, ethics, and inclusivity in STEM assessment practices.

*Course Outline***Unit 1. Understanding Assessment in STEM Education**

- 1.1 Introduction to Assessment, Evaluation, and Measurement
- 1.2 Principles and Purposes of Assessment
- 1.3 The Role of Assessment in Integrated STEM Settings
- 1.4 Diagnostic Questions and Reflection
- 1.5 STEM Classroom Case Scenarios
- 1.6 Comparison Charts: Formative vs Summative, Disciplinary vs Integrated

Unit 2. Authentic and Formative Assessment Strategies

- 2.1 Authentic Assessment and Real-World Performance Tasks
- 2.2 Embedding Formative Assessment in Inquiry-Based STEM Learning
- 2.3 Sample Task Templates
- 2.4 Classroom Reflection Journal Activity
- 2.5 Self-Assessment Tools

Unit 3. Assessing Engineering Design and Mathematical Modeling

- 3.1 Strategies for Assessing Engineering Thinking and the Design Process
- 3.2 Evaluating Mathematical Reasoning and Modeling in STEM Contexts
- 3.3 Sample Rubrics for Engineering and Modeling Tasks
- 3.4 Annotated Student Work Samples
- 3.5 Task Design Activity
- 3.6 Using Design Journals and Reflective Logs to Assess Iterative Thinking

Unit 4. Designing Assessment Tools and Rubrics

- 4.1 Review and Evaluation (Midterm)
- 4.2 Digital Assessment Tools (Google Forms, Kahoot, etc.)
- 4.3 Designing Effective Rubrics and Checklists
- 4.4 Templates for Rubrics and Digital Tools
- 4.5 Mid-Chapter Review Quiz
- 4.6 Hands-on Rubric-Building Workshop

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Unit 5. Assessing 21st-Century Skills in STEM

- 5.1 Assessing Collaboration, Creativity, Critical Thinking, and Communication
- 5.2 Observation Protocols and Process Documentation
- 5.3 Group Project Assessment Rubric
- 5.4 Peer and Self-Assessment Forms
- 5.5 Reflection Prompts on Student Behavior

Unit 6. Data Use, Differentiation, and Ethical Practices

- 6.1 Data-Driven Instruction and Feedback Strategies
- 6.2 Assessment Modifications for Diverse Learners
- 6.3 Ethical and Inclusive Assessment Practices
- 6.4 Sample Data Analysis Activity
- 6.5 Adapted Assessment Examples for Learners with Special Needs
- 6.6 Policy Review Task: Bias, Fairness, Confidentiality

Unit 7. Synthesis, Presentation, and Reflection

- 7.1 Capstone Project Presentation
- 7.2 Course Reflection and Self-Assessment
- 7.3 Final Project Guidelines and Rubric
- 7.4 Student Reflection Log
- 7.5 Peer Evaluation Form
- 7.6 Showcasing Growth Through Digital Portfolios and Evidence of Learning

Recommended Texts

1. Bell, C. A., Gitomer, D. H., & McCaffrey, D. F. (Eds.). (2021). *Teacher evaluation in practice: Assessing teacher quality in STEM education*. Harvard Education Press
2. Andrade, H. L., & Heritage, M. (Eds.). (2018). *Using formative assessment to enhance learning, achievement, and academic self-regulation*. Routledge.
3. McMillan, J. H. (2017). *Classroom assessment: Principles and practice for effective standards-based instruction* (7th ed.). Pearson.
4. Marshall, J. C. (2016). *The highly effective teacher: 7 classroom-tested practices that foster student success*. ASCD/NRC (National Research Council). (2014). *Developing assessments for the Next Generation Science Standards*. National Academies Press. <https://doi.org/10.17226/18409>
5. National Research Council. (2014). *Developing assessments for the next generation science standards*. National Academies Press.
6. Brookhart, S. M. (2013). *How to create and use rubrics for formative assessment and grading*. ASCD.

Suggested Readings

1. Nitko, A. J., & Brookhart, S. M. (2013). *Educational assessment of students* (7th ed.). Pearson
- Chappuis, J., Stiggins, R. J., Chappuis, S., & Arter, J. A. (2012). *Classroom assessment for student learning: Doing it right—using it well*. Pearson Assessment Training Institute.

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 Assessment Practices
 Developing Assessments
 Unit 5.1-5.5

2. Harlen, W. (2013). *Assessment & inquiry-based science education: Issues in policy and practice*. Nuffield Foundation.
3. Bell, C. A., Gitomer, D. H., & McCaffrey, D. F. (2012). *Better feedback for better teaching: A practical guide to improving classroom observations*. Wiley.
4. Black, P., & Wiliam, D. (1998). *Inside the black box: Raising standards through classroom assessment*. Phi Delta Kappa International.
5. Pellegrino, J. W., Chudowsky, N., & Glaser, R. (Eds.). (2001). *Knowing what students know: The science and design of educational assessment*. National Academies Press.
6. Brookhart, S. M. (2010). *Formative assessment strategies for every classroom: An ASCD action tool* (2nd ed.). ASCD. <https://www.ascd.org/books/formative-assessment-strategies-for-every-classroom>
7. Wiliam, D. (2011). *Embedded formative assessment*. Solution Tree Press.

🌐 Web Resources

1. Next Generation Science Standards. (n.d.). *Assessment resources*. <https://www.nextgenscience.org/resources/ngss-assessment-resources>
2. National Science Teaching Association. (n.d.). *Assessment in STEM education*. <https://www.nsta.org>
3. Edutopia. (n.d.). *Assessment strategies*. <https://www.edutopia.org/assessment>
4. Stanford Center for Assessment, Learning, and Equity. (n.d.). *Performance assessment toolkit*. <https://scale.stanford.edu>
5. PBLWorks. (n.d.). *Project-based learning rubrics and tools*. <https://www.pblworks.org/resources/rubrics>
6. Brookings Institution. (n.d.). *Measuring 21st century skills*. <https://www.brookings.edu>
7. ASCD. (n.d.). *Formative assessment resources*. <https://www.ascd.org>
8. CAST. (n.d.). *Universal Design for Learning and inclusive assessment*. <https://www.cast.org>
9. Common Sense Education. (n.d.). *Digital tools for formative assessment*. <https://www.common Sense.org/education/top-picks/digital-tools-for-formative-assessment>
10. Education Endowment Foundation. (n.d.). *Feedback and assessment evidence summaries*. <https://educationendowmentfoundation.org.uk>

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 University of South Africa

EDUC-6261

Practicum in STEM Teaching

3(3-0)

Course Description

Pre-service or in-service teachers with immersive, real-world teaching experiences in Science, Technology, Engineering, and Mathematics (STEM) education. This course bridges theory and practice by enabling participants to plan, implement, and reflect on inquiry-driven, interdisciplinary STEM lessons in authentic classroom settings. Emphasizing the integration of 21st-century skills, innovative pedagogies, and digital tools, the practicum guides participants through active teaching cycles including lesson design, implementation, peer collaboration, formative assessment, and reflection. Participants will critically examine STEM teaching frameworks and apply them in diverse classroom contexts to foster problem-solving, creativity, collaboration, and critical thinking among students.

Course Objectives

By the end of the course, students will be able to:

1. Design and implement integrated STEM lessons that incorporate inquiry-based and project-based learning aligned with national and international curriculum standards.
2. Apply STEM pedagogical models such as the 5E instructional model, the engineering design process, and mathematical modeling in classroom settings.
3. Utilize digital tools and educational technologies to enhance STEM instruction and promote student engagement and understanding.
4. Differentiate instruction to meet diverse learning needs through inclusive and culturally responsive teaching strategies.
5. Employ formative and summative assessment methods to measure student learning in STEM subjects and provide effective feedback.
6. Reflect critically on their instructional practices and student outcomes to identify areas for improvement and implement evidence-based strategies.
7. Engage in professional collaboration with peers, mentors, and educational stakeholders to plan, observe, and evaluate STEM instruction in authentic teaching contexts.
8. Develop and present a comprehensive teaching portfolio that includes lesson plans, assessment tools, student work, and reflective analysis as evidence of professional learning and growth.

Course Outline**Unit 1: Orientation to STEM Practicum**

- 1.1 Goals and Expectations of the Practicum Experience
- 1.2 Code of Conduct, Ethics, and Classroom Responsibilities
- 1.3 Building Professional Relationships (Mentors, Students, Peers)
- 1.4 Understanding the School Context and STEM Program

Unit 2: Planning for STEM Instruction

- 2.1 Integrated Lesson Planning (Inquiry-Based, Project-Based, Design-Based)
- 2.2 Aligning Objectives with STEM Standards
- 2.3 Incorporating Real-World Problems and 21st-Century Skills
- 2.4 Developing Practicum-Ready Lesson Plans for Classroom Implementation

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Unit 3: Implementing Integrated STEM Lessons

- 3.1 Classroom Delivery of STEM Lessons
- 3.2 Managing Group Work, Experiments, and Design Challenges
- 3.3 Using Formative Assessment in Real Time
- 3.4 Micro-Teaching and Lead Classroom Sessions
- 3.5 Mentor Observations and Feedback Sessions
- 3.6 Video or Documentation of at Least Two Full STEM Lessons

Unit 4: Technology and Assessment in Practice

- 4.1 Integrating Technology Tools (Simulations, Sensors, Coding)
- 4.2 Using Checklists, Rubrics, and Peer/Self-Assessment
- 4.3 Gathering Student Evidence of Learning
- 4.4 Designing Technology-Enhanced Activities
- 4.5 Developing Assessment Tools Tailored to Lesson Objectives

Unit 5: Classroom Management and Student Engagement

- 5.1 Managing Hands-On and Collaborative Learning in STEM
- 5.2 Differentiating Instruction for Diverse Learners
- 5.3 Building Inclusive Classroom Environments
- 5.4 Reflective Logs on Classroom Behavior and Engagement
- 5.5 Interviewing Cooperating Teachers on Management Strategies

Unit 6: Reflective Practice and Professional Growth

- 6.1 Analyzing Teaching Effectiveness Using Video and Feedback
- 6.2 Setting Professional Growth Goals
- 6.3 Engaging in Peer Coaching and Collaborative Learning
- 6.4 Maintaining Reflection Journals
- 6.5 Self-Assessment Using Observation Tools or Checklists
- 6.6 Engaging in Evidence-Based Reflection to Inform Future Instructional Practices

Unit 7: Portfolio Development and Final Presentation

- 7.1 Assembling a Professional Teaching Portfolio
- 7.2 Presenting Teaching Artifacts, Reflections, and Student Feedback
- 7.3 Evaluating Personal and Peer Growth
- 7.4 Oral Presentation or Poster Session
- 7.5 Aligning Portfolio Evidence with National STEM Teaching Standards

Suggested Materials for Practicum Toolkit:

- STEM lesson plan template
- Observation rubric (for mentor and self-use)
- Student reflection and feedback forms
- Weekly reflection journal template
- Portfolio checklist and assessment rubric

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Recommended Texts

1. Windschitl, M., Thompson, J., & Braaten, M. (2018). *Ambitious science teaching*. Harvard Education Press.
2. Belland, B. R. (2017). *Instructional scaffolding in STEM education: Strategies and efficacy evidence*. Springer.
3. Marzano, R. J. (2017). *The new art and science of teaching: More than fifty new instructional strategies for academic success*. Solution Tree Press.
4. Kelley, T. R., & Knowles, J. G. (2016). *A conceptual framework for integrated STEM education*. *International Journal of STEM Education*, 3(1), 1–11.
5. Johnson, C. C., Peters-Burton, E. E., & Moore, T. J. (Eds.). (2015). *STEM road map: A framework for integrated STEM education*. Routledge.

Suggested Readings

1. Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). *Effective teacher professional development*. Learning Policy Institute.
2. Jolly, A. (2017). *STEM by design: Strategies and activities for grades 4–8*. Routledge.
3. Martin, S. N., & Ivey, T. A. (2016). *Preparing science teachers through practice-based teacher education*. Springer.
4. Bybee, R. W. (2013). *The case for STEM education: Challenges and opportunities*. NSTA Press.
5. Truesdell, P. (2014). *Engineering essentials for STEM instruction: How do I infuse real-world problem solving into science, technology, and math?* ASCD.
6. Stohlmann, M., Moore, T. J., & Roehrig, G. H. (2012). *Considerations for teaching integrated STEM education*. *Journal of Pre-College Engineering Education Research*, 2(1), 28–34. <https://doi.org/10.5703/1288284314653>
7. Capraro, R. M., Capraro, M. M., & Morgan, J. R. (2013). *STEM project-based learning: An integrated science, technology, engineering, and mathematics (STEM) approach* (2nd ed.). Sense Publishers.
8. Marshall, J. C. (2013). *Succeeding with inquiry in science and math classrooms*. ASCD.
9. Danielson, C. (2007). *Enhancing professional practice: A framework for teaching* (2nd ed.). ASCD.

Web Resources

1. National Science Teaching Association. (n.d.). *STEM practicum and classroom resources*. <https://www.nsta.org>
2. Edutopia. (n.d.). *Tips for student teachers and classroom management*. <https://www.edutopia.org>
3. TeachEngineering. (n.d.). *Free engineering and STEM lesson plans*. <https://www.teachengineering.org/>
4. PBL Works. (n.d.). *Project-based learning resources for teachers*. <https://www.pblworks.org/>
5. Next Generation Science Standards. (n.d.). *Standards and performance expectations*. <https://www.nextgenscience.org/>
6. BetterLesson. (n.d.). *Real-classroom STEM lesson plans and coaching tools*. <https://betterlesson.com>
7. Concord Consortium. (n.d.). *STEM digital tools and data simulations*. <https://concord.org>
8. Teaching Channel. (n.d.). *Video library for reflective practice and classroom strategies*. <https://www.teachingchannel.com/>

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9. Common Sense Education. (n.d.). *EdTech reviews for classroom integration*.
<https://www.common sense.org/education>
10. Smithsonian Science Education Center. (n.d.). *Inclusive STEM education and inquiry-based teaching*. <https://ssec.si.edu/>

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Specialization 7: Educational Technology

Specialization 7: Educational Technology (Select any Six Courses)				
1.	EDUC-6262	Instructional Design and Technology	3(3-0)	<i>Nil</i>
2.	EDUC-6263	Emerging Technologies in Education	3(3-0)	<i>Nil</i>
3.	EDUC-6264	Learning Analytics and Educational Data	3(3-0)	<i>Nil</i>
4.	EDUC-6265	Mobile and Online Learning Development	3(3-0)	<i>Nil</i>
5.	EDUC-6266	Learning Management Systems (LMS) and E-Learning Tools	3(3-0)	<i>Nil</i>
6.	EDUC-6267	Digital Teaching and Learning	3(3-0)	<i>Nil</i>
7.	EDUC-6268	Gamification and Interactive Learning	3(3-0)	<i>Nil</i>

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EDUC-6262**Instructional Design and Technology****3(3-0)****Course Description**

The purpose of this course is to help students understand, use, and apply a range of Information and Communication Technologies (ICTs) such as computers, the Internet, audio-video equipment, mobile devices, and online tools to enhance teaching and learning. The course explores how technology supports instructional design, content delivery, assessment, and collaboration in educational settings. Students will learn how to design, develop, implement, and evaluate instruction using digital tools and pedagogical frameworks. The course provides hands-on experience with models such as ADDIE and ASSURE and explores the role of multimedia, e-learning platforms, and emerging technologies in modern education. Students will learn to integrate instructional design principles with emerging technologies to create effective learning experiences.

Course Objectives

The course will enable learners to:

1. Understand the concepts and significance of instructional design and its application in educational settings.
2. Explore and apply major instructional design models like ADDIE and ASSURE.
3. Analyze and apply learning theories to design effective instructional materials.
4. Select and apply appropriate instructional strategies and materials for effective technology integration.
5. Design and develop instructional aids using indigenous and digital resources.
6. Evaluate the effectiveness of instructional materials and modify them based on learner feedback and assessment data.
7. Integrate technology meaningfully into the instructional design process to improve teaching and learning outcomes.

Course Outline**Unit 1: Introduction to Instructional Design**

- 1.1. Meaning and scope of Instructional Technology & Instructional Design
- 1.2. Components of Instructional Technology (Hardware, Software, Systems)
- 1.3. Historical evolution of instructional design
- 1.4. Need and importance of instructional design in education
- 1.5. Roles and responsibilities of instructional designers

Unit 2: Theoretical Foundations of Instructional Design

- 2.1. Behaviorism and its Role in Technology-Based Learning
- 2.2. Cognitivism and Information Processing in Digital Learning
- 2.3. Constructivism and Collaborative Learning with Technology
- 2.4. Connectivism and Networked Learning
- 2.5. Cognitive Load Theory and Multimedia Learning Principles

Unit 3: Instructional Media & Tools

- 3.1. Traditional Media: Radio, Television, Video, Projectors
- 3.2. Digital Media: Interactive Video, Multimedia, Virtual Labs
- 3.3. Internet-Based Tools: LMS (Moodle, Google Classroom), Web Conferencing
- 3.4. Emerging Technologies: AI, Gamification, VR/AR in Education

Unit 4: Instructional Design Models

- 4.1. The ADDIE Model (Analysis, Design, Development, Implementation, Evaluation)
- 4.2. ASSURE Model

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- 4.3. Dick and Carey Model
- 4.4. Rapid Prototyping and Agile Instructional Design

Unit 5: Designing Instructional Strategies

- 5.1. Sequencing content and instructional events
- 5.2. Selection of instructional methods and media
- 5.3. Designing for active and collaborative learning
- 5.4. Scaffolding and differentiation

Unit 6: Developing Instructional Materials

- 6.1. Designing Instructional Materials
- 6.2. Principles of Multimedia Learning (Mayer's Principles)
- 6.2. Low-Cost & Indigenous Instructional Aids
- 6.3. Storyboarding & Prototyping for Digital Content
- 6.4. Accessibility & Universal Design for Learning (UDI)
- 6.5. Digital tools for content development (Canva, Articulate, Google Slides, etc.)
- 6.6. Open Educational Resources (OERs)

Unit 7: Integrating Technology into Instructional Design

- 7.1. Selection of appropriate technologies
- 7.2. Interactive media and e-learning platforms (LMS, MOOCs)
- 7.3. Computer-Based Instruction (CBI) & Simulations
- 7.4. Using simulations, AR/VR, and gamification
- 7.5. Blended Mobile Learning (M-Learning) & Apps Flipped Learning Models
- 7.6 Social Media & Collaborative Tools (Blogs, Wikis, Discussion Forums)

Unit 8: Implementation and Facilitation

- 8.1. Planning for instruction delivery
- 8.2. Facilitating instruction using technology
- 8.3. Managing learning environments (synchronous and asynchronous)
- 8.4. Supporting learners through technology

Unit 9: Evaluation and Revision

- 9.1. Formative and summative evaluation
- 9.2. Kirkpatrick's Four Levels of Evaluation
- 9.3. Gathering and using feedback for revision
- 9.4. Data-driven decision-making in instructional design

Unit 10: Emerging Trends in Instructional Design and Technology

- 10.1. Personalized and adaptive learning
- 10.2. Artificial Intelligence in instructional design
- 10.3. Mobile learning and microlearning
- 10.4. Learning analytics and dashboards

Recommended Texts

1. Brown, A. H., & Green, T. D. (2020). *The essentials of instructional design: Connecting fundamental principles with process and practice* (4th ed.). Routledge.
2. Larson, M. B., & Lockee, B. B. (2019). *Streamlined ID: A practical guide to instructional design* (2nd ed.). Routledge. <https://doi.org/10.4324/9781315148687>

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3. Morrison, G. R., Ross, S. M., Kemp, J. E., Kalman, H. K., & Kemp, J. E. (2019). *Designing effective instruction* (8th ed.). Wiley.
4. Reiser, R. A., & Dempsey, J. V. (2017). *Trends and Issues in Instructional Design and Technology* (4th Ed.). Pearson.
5. Morrison, G. R., Ross, S. M., Kemp, J. E., & Kalman, H. (2012). *Designing Effective Instruction* (7th Ed.). Wiley.

Suggested Readings

1. Clark, R. C., & Mayer, R. E. (2016). *E-learning and the science of instruction: Proven guidelines for consumers and designers of multimedia learning* (4th ed.). Wiley Branch, R. M. (2009). *Instructional Design: The ADDIE Approach*. Springer.
2. Merrill, M. D. (2013). *First Principles of Instruction: Identifying and Designing Effective, Efficient and Engaging Instruction*. Pfeiffer.
3. Gagné, R. M., Wager, W. W., Golas, K. C., & Keller, J. M. (2005). *Principles of Instructional Design* (5th Ed.). Cengage Learning.
4. Reiser, R. A., & Dempsey, J. V. (Eds.). (2017). *Trends and issues in instructional design and technology* (4th ed.). Pearson.
5. Branch, R. M. (2009). *Instructional design: The ADDIE approach*. Springer. <https://doi.org/10.1007/978-0-387-09506-6>
6. Merrill, M. D. (2012). *First principles of instruction: Identifying and designing effective, efficient, and engaging instruction*. Pfeiffer.
7. Smith, P. L., & Ragan, T. J. (2005). *Instructional Design*. John Wiley & Sons.

Web Resources

1. Association for Educational Communications and Technology (AECT). (n.d.). *Instructional design resources*. Retrieved July 2, 2025, from <https://aect.org/>
2. Instructional Design Central. (n.d.). *Resources, templates, and tools for instructional designers*. Retrieved July 2, 2025, from <https://www.instructionaldesigncentral.com/>
3. eLearning Industry. (n.d.). *Articles and insights on instructional design and technology*. Retrieved July 2, 2025, from <https://elearningindustry.com/>
4. The Learning Guild. (n.d.). *Research, articles, and professional development for instructional designers*. Retrieved July 2, 2025, from <https://www.learningguild.com/>
5. EdTech Books. (n.d.). *Free and open-access instructional design textbooks*. Retrieved July 2, 2025, from <https://edtechbooks.org/>
6. Center for Instructional Technology and Training - University of Florida. (n.d.). *Instructional design services and resources*. Retrieved July 2, 2025, from <https://citt.ufl.edu/>
7. IDA (Instructional Design Association). (n.d.). *Community and development for instructional design professionals*. Retrieved July 2, 2025, from <https://www.instructionaldesignassociation.org/>
8. ATID (Association for Talent Development). (n.d.). *Instructional design resources for corporate learning*. Retrieved July 2, 2025, from <https://www.td.org/>
9. CAST. (n.d.). *Universal Design for Learning (UDL) guidelines and tools*. Retrieved July 2, 2025, from <https://www.cast.org/>
10. Learning Theories. (n.d.). *Theoretical foundations for instructional design*. Retrieved July 2, 2025, from <https://www.learning-theories.com/>

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Course Description

This course introduces learners to the dynamic world of emerging technologies and their transformative impact on teaching and learning. It explores how technologies such as Artificial Intelligence (AI), Virtual and Augmented Reality (VR/AR), Gamification, Mobile Learning, and Learning Analytics can enhance educational practices. Learners will gain theoretical insights and hands-on exposure to various innovative tools and systems, and critically analyze the challenges and ethical considerations in adopting emerging technologies in education. The course aims to prepare future educators to integrate cutting-edge technology effectively and responsibly into the learning environment.

Course Objectives

The course will enable learners to:

1. Understand the concept and scope of emerging technologies in education.
2. Explore and evaluate the potential of emerging technologies to support teaching, learning, and assessment.
3. Develop competencies to integrate emerging technologies into instructional design and delivery.
4. Critically analyze the benefits, limitations, and ethical implications of adopting emerging technologies in educational contexts.
5. Predict trends and prepare for future technological shifts in education.

Course Outline

Unit 1: Introduction to Emerging Technologies in Education

- 1.1. Definition and scope emerging technologies in education
- 1.2. Historical perspective and evolution
- 1.3. Importance and impact on teaching and learning
- 1.4. Characteristics of emerging technologies

Unit 2: Artificial Intelligence (AI) in Education

- 2.1. Applications of AI in teaching, learning, and assessment
- 2.2. AI-based personalized learning systems
- 2.3. Chatbots and virtual assistants in education
- 2.4. Ethical considerations in AI

Unit 3: Augmented Reality (AR) and Virtual Reality (VR)

- 3.1. Concepts and differences between AR and VR
- 3.2. AR/VR tools and platforms for education
- 3.3. Enhancing engagement through immersive learning experiences
- 3.4. Classroom implementation and challenges

Unit 4: Gamification and Game-Based Learning

- 4.1. Definition and principles of gamification
- 4.2. Difference between gamification and game-based learning
- 4.3. Educational game design principles
- 4.4. Tools and examples (e.g., Kahoot, Quizizz, Minecraft: Edu)

Unit 5: Mobile Learning and Ubiquitous Learning Environments

- 5.1. Mobile devices as learning tools
- 5.2. Mobile apps for teaching and learning
- 5.3. Benefits and challenges of mobile learning
- 5.4. Bring Your Own Device (BYOD) policies

Unit 6: Learning Analytics and Big Data in Education

- 6.1. Introduction to learning analytics
- 6.2. Role of data in improving learning outcomes

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- 6.3. Dashboards and visualization tools
- 6.4. Privacy and data security concerns

Unit 7: Cloud Computing and Online Collaboration Tools

- 7.1. Basics of cloud computing in education
- 7.2. Platforms for collaboration (e.g., Google Workspace, Microsoft Teams)
- 7.3. Benefits and limitations of cloud-based learning environments

Unit 8: Open Educational Resources (OERs) and MOOCs

- 8.1. Definition and types of OERs
- 8.2. MOOCs and their impact on global education
- 8.3. Issues of quality, accessibility, and sustainability

Unit 9: Blockchain and Digital Credentials

- 9.1. Basics of blockchain technology
- 9.2. Blockchain in certification and academic records
- 9.3. Smart contracts in educational processes

Unit 10: Future Trends and Challenges

- 10.1. Internet of Things (IoT) in education
- 10.2. Adaptive learning technologies
- 10.3. Metaverse and the future classroom
- 10.4. Challenges: equity, access, ethics, and teacher readiness

Recommended Texts

1. Martin, F., & Oyarzun, B. (Eds.). (2023). *Handbook of research on digital-based assessment and innovative practices in education*. IGI Global.
2. Selwyn, N., Nemorin, S., Bullfin, S., & Johnson, N. (2020). *Everyday schooling in the digital age: High school, high tech?* Routledge.
3. Wang, V. C. X. (Ed.). (2020). *Handbook of research on ethical challenges in higher education leadership and administration*. IGI Global.
4. Passey, D. (2020). *Digital Technologies and Learning in the Early Years*. Springer. <https://doi.org/10.1007/978-3-030-26578-9>
5. Bates, A. W. (Tony). (2019). *Teaching in a digital age: Guidelines for designing teaching and learning*. Tony Bates Associates Ltd. <https://opentextbc.ca/teachinginadigitalage/>
6. Bates, A. W. (2019). *Teaching in a Digital Age* (2nd Ed.). Tony Bates Associates Ltd. <https://opentextbc.ca/teachinginadigitalage/>

Suggested Readings

1. Selwyn, N. (2021). *Should Robots Replace Teachers? AI and the Future of Education*. Polity Press.
2. Veletsianos, G. (2020). *Learning Online: The Student Experience*. Johns Hopkins University Press.
3. Luckin, R. (2018). *Machine Learning and Human Intelligence: The Future of Education for the 21st Century*. UCL IOE Press.
4. Veletsianos, G. (Ed.). (2016). *Emerging technologies in distance education*. Athabasca University Press. <https://doi.org/10.15215/aupress/9781927356807.01>

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5. Mishra, S. (Ed.). (2020). *Interactive multimedia learning: Technologies and applications*. Springer.
6. Redecker, C., & Punic, Y. (2017). *European framework for the digital competence of educators: DigCompEdu*. Publications Office of the European Union. <https://doi.org/10.2760/159770>
7. Schrum, L., & Levin, B. B. (2015). *Leading 21st century schools: Harnessing technology for engagement and achievement*. Corwin Press.

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EDUC- 6264

Learning Analytics and Educational Data

3(3-0)

Course Description

This course provides an introduction to the field of Learning Analytics and the use of educational data to improve teaching, learning, and decision-making in educational environments. It covers concepts, tools, and methods used to collect, analyze, interpret, and visualize educational data. The course emphasizes data-informed practices, ethical considerations, and the potential of analytics to personalize learning, enhance student engagement, and support institutional planning. Learners will gain foundational knowledge and practical skills to work with learning data in digital learning environments, including Learning Management Systems (LMS), MOOCs, and other technology-enhanced educational settings.

Course Objectives

The course will enable learners to:

1. Understand the concepts and scope of learning analytics and educational data.
2. Identify sources and types of data used in educational environments.
3. Analyze and interpret educational data to support teaching and learning.
4. Use learning analytics tools and techniques to visualize learner progress and predict performance.
5. Evaluate ethical and privacy issues associated with educational data.
6. Apply learning analytics for decision-making and instructional improvement

Course Outline**Unit 1: Introduction to Learning Analytics**

- 1.1. Definition and scope of learning analytics
- 1.2. Historical development and significance
- 1.3. Difference between learning analytics, academic analytics, and educational data mining
- 1.4. Applications in K-12, higher education, and corporate learning

Unit 2: Sources and Types of Educational Data

- 2.1. Structured and unstructured data
- 2.2. Data from Learning Management Systems (LMS)
- 2.3. Clickstream, logs, and behavioral data
- 2.4. Surveys, assessments, and performance records

Unit 3: The Learning Analytics Cycle

- 3.1. Data collection
- 3.2. Data cleaning and preparation
- 3.3. Data analysis and interpretation
- 3.4. Decision-making and intervention

Unit 4: Tools and Techniques in Learning Analytics

- 4.1. Excel, Google Sheets, and Tableau for data visualization
- 4.2. Introduction to R and Python in education
- 4.3. Dashboards and learning analytics platforms (e.g., Moodle, Canvas, Power BI)
- 4.4. Predictive analytics and machine learning basics

Unit 5: Data Visualization and Reporting

- 5.1. Principles of data visualization
- 5.2. Visualizing learner data (progress, engagement, outcomes)
- 5.3. Designing dashboards for educators and administrators
- 5.4. Interpreting charts, heatmaps, and trend lines

Unit 6: Applications of Learning Analytics

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- 6.1. Improving student engagement and motivation
- 6.2. Supporting adaptive and personalized learning
- 6.3. Identifying at-risk students and early intervention
- 6.4. Enhancing curriculum design and delivery

Unit 7: Learning Analytics for Teachers and Institutions

- 7.1. Using analytics for instructional design and feedback
- 7.2. Course evaluation and redesign based on data
- 7.3. Institutional decision-making and strategic planning

Unit 8: Ethics, Privacy, and Data Governance

- 8.1. Ethical considerations in data collection and use
- 8.2. Data ownership, consent, and student rights
- 8.3. FERPA, GDPR, and data protection laws
- 8.4. Transparency and accountability in learning analytics

Unit 9: Future Trends in Learning Analytics

- 9.1. Real-time analytics and intelligent tutoring systems
- 9.2. Learning Record Stores (LRS) and xAPI
- 9.3. Artificial Intelligence and adaptive learning systems
- 9.4. Challenges and opportunities in global contexts

Recommended Texts

1. Ferguson, R., Clow, D., & Drachsler, H. (2023). *Foundations of Learning Analytics*. Springer. <https://doi.org/10.1007/978-3-031-12062-3>
2. Ifenthaler, D., & Yau, J. Y.-K. (2022). *Utilizing Learning Analytics to Support Study Success*. Springer. <https://doi.org/10.1007/978-3-030-81222-9>
3. Ferguson, R., Clow, D., Griffiths, D., & Drachsler, H. (Eds.). (2022). *Learning analytics: Fundamentals, applications, and trends*. Springer. <https://doi.org/10.1007/978-3-030-78292-4>
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6. E-Learning Industry. (n.d.). *Articles on learning analytics and LMS integration*. Retrieved July 2, 2025, from <https://elearningindustry.com/>
7. Canvas LMS. (n.d.). *Learning analytics tools in Canvas*. Retrieved July 2, 2025, from <https://www.instructure.com/canvas/>
8. Open University Learning Analytics. (n.d.). *OU learning analytics resources and research*. Retrieved July 2, 2025, from <http://www.open.ac.uk/iet/main/research-innovation/learning-analytics>
9. Learning Analytics and Knowledge Conference (LAK). (n.d.). *Proceedings and updates*. Retrieved July 2, 2025, from <https://www.solaresearch.org/events/lak/>
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EDUC-6265

Mobile and Online Learning Development

3(3-0)

Course Description

This course provides an in-depth understanding of the design, development, and implementation of mobile and online learning environments. It explores pedagogical foundations, technological tools, and strategies to create accessible, engaging, and effective digital learning experiences. Emphasis is placed on mobile-first instructional design, e-learning platforms, content development, learner interaction, and assessment. The course also addresses usability, accessibility, and quality assurance in mobile and online education, enabling learners to apply theory into practice for diverse educational contexts.

Course Objectives

The course will enable learners to:

1. Describe the concepts, principles, and significance of mobile and online learning.
2. Explore instructional design models suitable for digital and mobile platforms.
3. Develop digital learning content for online and mobile delivery.
4. Evaluate mobile learning apps and online learning platforms.
5. Apply strategies for interaction, engagement, and assessment in digital learning.
6. Address challenges such as accessibility, inclusivity, and technological constraints.

Course Outline

Unit 1: Introduction to Mobile and Online Learning

- 1.1. Definitions and scope Mobile and Online Learning
- 1.2. Historical development and evolution
- 1.3. Benefits and limitations
- 1.4. Mobile learning vs. e-learning vs. blended learning

Unit 2: Theoretical Foundations

- 2.1. Constructivism, Connectivism, and Mobile Learning
- 2.2. The SAMR and TPACK models in digital learning design
- 2.3. Learner-centered design principles
- 2.4. Cognitive load theory in online content design

Unit 3: Instructional Design for Mobile and Online Learning

- 3.1. ADDIE and Rapid eLearning models
- 3.2. Storyboarding and prototyping digital content
- 3.3. Microlearning and modular course design
- 3.4. Designing for different screen sizes and devices

Unit 4: Learning Management Systems (LMS) and Platforms

- 4.1. Features and functions of LMS (e.g., Moodle, Google Classroom, Canvas)
- 4.2. Mobile learning platforms and apps (e.g., Edmodo, Coursera, Duolingo)
- 4.3. Synchronous vs. asynchronous delivery
- 4.4. Open-source and commercial platforms

Unit 5: Content Development Tools and Technologies

- 5.1. Authoring tools (Articulate 360, Adobe Captivate, H5P)
- 5.2. Video creation and screen recording tools
- 5.3. Multimedia integration (audio, video, animations)
- 5.4. Cloud-based collaboration and storage tools

Unit 6: Strategies for Online and Mobile Learner Engagement

- 6.1. Communication and collaboration tools (Zoom, Microsoft Teams, Google Meet)
- 6.2. Interactive tools (Padlet, Kahoot, Quizizz, Mentimeter)

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- 6.3. Discussion forums and social media integration
- 6.4. Gamification and badges

Unit 7: Online Assessment and Feedback

- 7.1. Designing formative and summative assessments
- 7.2. Tools for online quizzes, surveys, and assignments
- 7.3. Automated grading and feedback
- 7.4. Authentic and performance-based assessment

Unit 8: Accessibility, Usability, and Inclusivity

- 8.1. Principles of Universal Design for Learning (UDL)
- 8.2. Creating accessible digital content
- 8.3. Mobile accessibility guidelines (WCAG)
- 8.4. Addressing connectivity and device limitations

Unit 9: Evaluation and Quality Assurance

- 9.1. Models of e-learning evaluation (e.g., Kirkpatrick Model)
- 9.2. Student feedback and course analytics
- 9.3. Continuous improvement strategies
- 9.4. Mobile learning analytics and data interpretation

Unit 10: Trends and Future Directions

- 10.1. Mobile Augmented Reality (AR) and Virtual Reality (VR)
- 10.2. Adaptive learning technologies
- 10.3. Artificial Intelligence in mobile/online education
- 10.4. Emerging global practices in mobile and online learning

Recommended Texts

1. Crompton, H., & Traxler, J. (Eds.). (2018). *Mobile learning and higher education: Challenges in context*. Routledge.
2. Parsons, D., & MacCallum, K. (2019). *Mobile learning development: A practical guide*. Springer
3. Ally, M., & Tsinakos, A. (Eds.). (2014). *Perspectives on Open and Distance Learning: Increasing Access through Mobile Learning*. Commonwealth of Learning. <http://oasis.col.org/handle/11599/558>
4. Horton, W. (2011). *E-learning by Design* (2nd ed.). Wiley.
5. Ally, M. (Ed.). (2009). *Mobile learning: Transforming the delivery of education and training*. Athabasca University Press. <https://doi.org/10.15215/aupress/9781897425435.01>

Suggested Readings

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2. Crompton, H. (2013). *A Historical Overview of Mobile Learning: Toward Learner-Centered Education*. In Z. Berge & L. Muilenburg (Eds.), *Handbook of Mobile Learning*. Routledge.

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4. Commonwealth of Learning. (n.d.). *mLearning for development*. Retrieved July 2, 2025, from <https://www.col.org/>
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8. The Learning Accelerator. (n.d.). *Mobile learning integration in blended classrooms*. Retrieved July 2, 2025, from <https://learningaccelerator.org/>
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EDUC- 6266 Learning Management Systems (LMS) and E-Learning Tools 3(3-0)**Course Description**

This course introduces learners to Learning Management Systems (LMS) and a wide range of e-learning tools that support the design, delivery, and management of digital learning experiences. The course covers foundational concepts, selection criteria, and implementation strategies for using LMS platforms such as Moodle, Google Classroom, and Canvas. It also explores integration of e-learning tools for content creation, collaboration, assessment, and analytics. Emphasis is placed on pedagogical use, technical functionality, accessibility, and evaluating the effectiveness of LMS-supported instruction.

Course Objectives

The course will enable learners to:

1. Describe Understand the role and structure of Learning Management Systems in education.
2. Explore and evaluate major LMS platforms and their features.
3. Design and deliver online learning experiences using an LMS.
4. Integrate e-learning tools for content creation, collaboration, and assessment.
5. Manage users, resources, and activities within an LMS.
6. Address accessibility, usability, and evaluation in LMS environments.

Course Outline**Unit 1: Introduction to Learning Management Systems (LMS)**

- 1.1. Definition and purpose of LMS
- 1.2. Historical development and evolution
- 1.3. Benefits and limitations of LMS in education
- 1.4. Key components of an LMS

Unit 2: Overview of Major LMS Platforms

- 2.1. Moodle
- 2.2. Google Classroom
- 2.3. Canvas
- 2.4. Blackboard and Edmodo
- 2.5. Open-source vs. commercial LMS

Unit 3: Course Design and Content Delivery in LMS

- 3.1. Creating courses, modules, and learning paths
- 3.2. Uploading resources (documents, videos, links)
- 3.3. Embedding multimedia content
- 3.4. Organizing synchronous and asynchronous learning

Unit 4: User Management and Communication

- 4.1. Creating and managing user roles (students, teachers, admins)
- 4.2. Sending announcements, messages, and notifications
- 4.3. Discussion forums, messaging, and chat features
- 4.4. Managing groups and collaborative activities

Unit 5: Assessment and Feedback Tools in LMS

- 5.1. Creating quizzes, assignments, and surveys
- 5.2. Rubrics and grading systems
- 5.3. Providing feedback and comments
- 5.4. Academic integrity and plagiarism detection tools

Unit 6: E-Learning Tools for Content Creation

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- 6.1. Interactive content with H5P
- 6.2. Screen recording and video tools (Loom, Screencast-O-Matic)
- 6.3. Presentation tools (Prezi, Canva, PowerPoint with narration)
- 6.4. Podcasting and audio resources

Unit 7: Collaboration and Engagement Tools

- 7.1. Google Workspace (Docs, Sheets, Slides)
- 7.2. Padlet, Jamboard, Mentimeter
- 7.3. Gamification tools (Kahoot, Quizizz, Classcraft)
- 7.4. Virtual classrooms (Zoom, Microsoft Teams, Google Meet)

Unit 8: Analytics and Monitoring in LMS

- 8.1. Tracking learner progress and engagement
- 8.2. Using built-in analytics tools
- 8.3. Exporting and interpreting data
- 8.4. Making data-informed instructional decisions

Unit 9: Accessibility, Usability, and Support

- 9.1. Principles of accessible e-learning design
- 9.2. Tools and practices to support learners with special needs
- 9.3. Mobile access and responsive design
- 9.4. Technical and user support in LMS

Unit 10: Evaluation and Future Trends in LMS and E-Learning


- 10.1. Evaluating effectiveness of LMS-based learning
- 10.2. LMS interoperability and standards (SCORM, LTI, xAPI)
- 10.3. Integration of AI and adaptive learning
- 10.4. Future directions in LMS and e-learning tools

Recommended Texts

1. Pappas, C. (2022). *eLearning 101: The ultimate guide for beginners*. eLearning Industry
2. Al-Azawei, A., Sorenelli, F., & Lundqvist, K. (2020). *Universal design for learning (UDI): A content analysis of peer-reviewed journal papers from 2012 to 2015*. *Journal of the Scholarship of Teaching and Learning*, 17(3), 1–16.
3. Martin, F., & Sunley, R. (2019). *Teaching with Technology: Integrating Learning Management Systems in Higher Education*. Routledge.
4. Bates, A. W. (2019). *Teaching in a digital age: Guidelines for designing teaching and learning* (2nd ed.). Tony Bates Associates.
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6. Bates, A. T. (2019). *Teaching in a Digital Age: Guidelines for Designing Teaching and Learning*. <https://pressbooks.bccampus.ca/teachinginadigitalagev2>

Suggested Readings

1. Watson, W. R., & Watson, S. L. (2007). *An Argument for Clarity: What Are Learning Management Systems, What Are They Not, and What Should They Become?* *TechTrends*, 51(2), 28–34.

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 University of Saskatchewan

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2. Canvas by Instructure. (n.d.). *Higher education LMS solutions*. Retrieved July 2, 2025, from <https://www.instructure.com/canvas/>
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4. Blackboard. (n.d.). *Blackboard Learn LMS*. Retrieved July 2, 2025, from <https://www.blackboard.com/>
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6. Schoology. (n.d.). *Learning management system for K-12*. Retrieved July 2, 2025, from <https://www.powerschool.com/classroom/schoology-learning/>
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8. The eLearning Coach. (n.d.). *Tips, resources, and guides for online course designers*. Retrieved July 2, 2025, from <https://theelearningcoach.com/>
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EDUC- 6267

Digital Teaching and Learning

3(3-0)

Course Description

This course explores the transformative impact of digital technologies on teaching and learning practices in contemporary educational environments. It equips learners with theoretical insights and practical skills to effectively integrate digital tools into pedagogical planning, instructional delivery, student engagement, assessment, and collaboration. The course addresses emerging trends, digital pedagogy, instructional strategies for online and hybrid environments, and ethical considerations related to digital teaching and learning. It emphasizes digital fluency, learner-centered design, and innovation to improve teaching effectiveness and student outcomes.

Course Objectives

The course will enable learners to:

7. Describe the principles and foundations of digital teaching and learning.
8. Analyze and apply digital pedagogies in varied instructional contexts.
9. Integrate appropriate digital tools to enhance learner engagement and achievement.
10. Design and implement effective digital lesson plans and instructional materials.
11. Assess learners through digital methods and tools.
12. Identify challenges and ethical issues in digital education.

Course Outline**Unit 1: Foundations of Digital Teaching and Learning**

- 1.1. Concept and scope of digital education
- 1.2. Differences between traditional, online, blended, and hybrid learning
- 1.3. Benefits and limitations of digital teaching
- 1.4. Digital transformation in education

Unit 2: Theoretical Perspectives and Digital Pedagogies

- 2.1. Constructivist and connectivist learning theories
- 2.2. SAMR, TPACK, and Bloom's Digital Taxonomy
- 2.3. Active learning and personalized learning
- 2.4. Pedagogical shift in the digital age

Unit 3: Digital Instructional Design and Planning

- 3.1. Designing digital lesson plans
- 3.2. Multimedia and interactive content creation
- 3.3. Digital storytelling and microlearning
- 3.4. Flipped classroom model

Unit 4: Digital Tools and Platforms for Teaching

- 4.1. Learning Management Systems (LMS)
- 4.2. Video conferencing tools (Zoom, MS Teams, Google Meet)
- 4.3. Authoring tools (H5P, Canva, Edpuzzle, Prezi)
- 4.4. Collaborative tools (Google Workspace, Padlet, Jamboard)

Unit 5: Student Engagement in Digital Environments

- 5.1. Strategies for motivation and participation
- 5.2. Gamification and game-based learning
- 5.3. Online discussion and peer interaction
- 5.4. Digital feedback and communication

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Unit 6: Digital Assessment and Evaluation

- 6.1. Formative and summative assessment methods
- 6.2. E-portfolios and performance tasks
- 6.3. Online quizzes, rubrics, and feedback tools
- 6.4. Plagiarism detection and academic integrity

Unit 7: Inclusivity, Accessibility, and Digital Equity

- 7.1. Universal Design for Learning (UDL)
- 7.2. Accessibility guidelines (WCAG)
- 7.3. Addressing the digital divide
- 7.4. Culturally responsive digital teaching

Unit 8: Ethics, Privacy, and Digital Citizenship

- 8.1. Data privacy and security
- 8.2. Cyber safety and responsible behavior
- 8.3. Digital literacy and media literacy
- 8.4. Ethical use of digital content

Unit 9: Evaluating the Impact of Digital Learning

- 9.1. Learner analytics and tracking progress
- 9.2. Reflective teaching practices
- 9.3. Gathering student feedback for improvement
- 9.4. Measuring effectiveness of digital teaching strategies

Unit 10: Emerging Trends in Digital Education

- 10.1. Artificial Intelligence and adaptive learning
- 10.2. Augmented and Virtual Reality in education
- 10.3. Learning experience platforms (LxP)
- 10.4. Mobile learning and app-based education

Recommended Texts

1. Bates, A. W. (2019). *Teaching in a Digital Age: Guidelines for Designing Teaching and Learning*. BCcampus. <https://pressbooks.bccampus.ca/teachinginadigitalagev2>
2. Bates, A. W. (2019). *Teaching in a digital age: Guidelines for designing teaching and learning*. Tony Bates Associates. <https://pressbooks.bccampus.ca/teachinginadigitalagev2/>
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4. Veletsianos, G. (2016). *Emerging Technologies in Distance Education*. AU Press.
5. Selwyn, N. (2016). *Education and technology: Key issues and debates* (2nd ed.). Bloomsbury Academic.
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Suggested Readings

1. Palloff, R. M., & Pratt, K. (2013). *Lessons from the virtual classroom: The realities of online teaching* (2nd ed.). Jossey-Bass.

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2. Laurillard, D. (2013). *Teaching as a Design Science: Building Pedagogical Patterns for Learning and Technology*. Routledge.
3. Salmon, G. (2013). *E-tivities: The key to active online learning* (2nd ed.). Routledge.
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1. Edutopia. (n.d.). *Technology integration*. Retrieved July 2, 2025, from <https://www.edutopia.org/technology-integration>
2. International Society for Technology in Education (ISTE). (n.d.). *Digital teaching resources and standards*. Retrieved July 2, 2025, from <https://www.iste.org/standards>
3. TeachThought. (2023). *The best digital learning tools for teachers and students*. Retrieved from <https://www.teachthought.com/technology/>
4. UNESCO. (2022). *Digital learning and transformation*. Retrieved from <https://www.unesco.org/en/digital-education>
5. Common Sense Education. (n.d.). *EdTech ratings and reviews for teachers*. Retrieved July 2, 2025, from <https://www.commonsense.org/education>
6. The Learning Accelerator. (n.d.). *Blended and personalized learning practices*. Retrieved July 2, 2025, from <https://learningaccelerator.org/>
7. EdTech Magazine. (2023). *Digital transformation in education*. Retrieved from <https://edtechmagazine.com/k12/>
8. E-Learning Industry. (2024). *Strategies for effective online teaching*. Retrieved from <https://elearningindustry.com/>
9. FutureLearn. (n.d.). *Online teaching and learning short courses*. Retrieved July 2, 2025, from <https://www.futurelearn.com/>
10. The Chronicle of Higher Education. (2023). *Trends in online and digital education*. Retrieved from <https://www.chronicle.com/section/Teaching/66>

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EDUC-6268

Gamification and Interactive Learning

3(3-0)

Course Description

This course explores the principles and practices of gamification and interactive learning in educational settings. It aims to equip learners with the knowledge and skills to design, implement, and evaluate game-based and interactive strategies to enhance student motivation, engagement, and achievement. Emphasis is placed on applying game mechanics, digital tools, and learner-centered approaches to create immersive and active learning environments. The course also examines cognitive, social, and emotional impacts of gamified learning and the ethical considerations involved.

Course Objectives

The course will enable learners to:

1. Describe the concepts of gamification, game-based learning, and interactive learning.
2. Differentiate between game-based learning and gamification.
3. Apply game elements to instructional design and classroom practice.
4. Integrate interactive technologies and tools to enhance learning experiences.
5. Evaluate the effectiveness of gamified and interactive learning environments.
6. Address challenges and ethical issues in gamified instruction.

Course Outline

Unit 1: Introduction to Gamification and Interactive Learning

- 1.1. Definitions and key concepts
- 1.2. Historical background and evolution
- 1.3. Difference between gamification, serious games, and game-based learning
- 1.4. Benefits and challenges

Unit 2: Theoretical Foundations

- 2.1. Motivation theories (Self-Determination Theory, Flow Theory, Behaviorism)
- 2.2. Constructivism and experiential learning
- 2.3. Cognitive load theory and engagement principles
- 2.4. Learning psychology and game dynamics

Unit 3: Game Elements and Mechanics

- 3.1. Points, badges, levels, and leaderboards
- 3.2. Quests, challenges, and storytelling
- 3.3. Rewards, feedback loops, and progression
- 3.4. Avatars, roles, and customization

Unit 4: Designing Gamified Learning Experiences

- 4.1. Instructional design for gamification
- 4.2. Aligning game mechanics with learning objectives
- 4.3. Balancing fun and academic rigor
- 4.4. Creating learner personas and player types

Unit 5: Tools and Platforms for Gamification

- 5.1. Kahoot, Quizizz, and Classcraft
- 5.2. Socrative, Nearpod, and Edmodo
- 5.3. Game-making tools (Scratch, Genially, Minecraft: Edu)
- 5.4. Mobile apps and AR/VR in gamified learning

Unit 6: Interactive Learning Strategies

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- 6.1. Simulations and educational games
- 6.2. Interactive storytelling and scenario-based learning
- 6.3. Collaborative learning through interactive platforms
- 6.4. Polling, live quizzes, and immediate feedback tools

Unit 7: Implementing Gamification in the Classroom

- 7.1. Classroom management and motivation
- 7.2. Setting goals and tracking progress
- 7.3. Student roles, autonomy, and decision-making
- 7.4. Inclusivity and differentiation through gamification

Unit 8: Assessment in Gamified and Interactive Learning

- 8.1. Formative and summative assessment
- 8.2. Self-assessment and peer assessment
- 8.3. Using analytics and performance data
- 8.4. Feedback mechanisms in gamified environments

Unit 9: Evaluating Gamified Learning Environments

- 9.1. Evaluation models and frameworks
- 9.2. Measuring engagement and learning outcomes
- 9.3. Reflective practice and iteration
- 9.4. Learner feedback and experience

Unit 10: Ethical Considerations and Future Trends

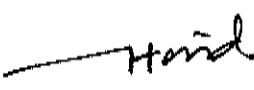
- 10.1. Ethical issues in gamification (privacy, addiction, manipulation)
- 10.2. Accessibility and equity in game-based learning
- 10.3. Trends: AI in gamification, immersive learning environments
- 10.4. Future directions in gamification and interactive learning

Recommended Texts

1. Hsin-Yi, C., & Yu-Tzu, C. (2020). *Gamification in education: Breakthrough in motivation and engagement*. IGI Global.
2. Anderson, C. A., & Davidson, S. (2019). *Game-based learning: How to delight and instruct in the 21st century*. Rowman & Littlefield.
3. Deterding, S., & Walz, S. P. (Eds.). (2015). *The gameful world: Approaches, issues, applications*. MIT Press.
4. Nicholson, S. (2015). *Exploring gamification techniques for classroom engagement*. *EDUCAUSE Review*, 50(2), 52-62.
5. Kapp, K. M. (2012). *The Gamification of Learning and Instruction: Game-Based Methods and Strategies for Training and Education*. Wiley.
6. Gee, J. P. (2007). *What Video Games Have to Teach Us About Learning and Literacy*. Palgrave Macmillan.

Suggested Readings

1. Nicholson, S. (2015). *A RECIPE for Meaningful Gamification*. In *Gamification in Education and Business*. Springer.
2. Kapp, K. M. (2016). *The gamification of learning and instruction fieldbook: Ideas into practice*. Wiley.


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3. Gee, J. P. (2013). *Good video games + good learning: Collected essays on video games, learning, and literacy* (2nd ed.). Peter Lang.
4. Caponetto, I., Earp, J., & Ott, M. (2014). *Gamification and education: A literature review*. Proceedings of the European Conference on Games Based Learning, 1, 50–57.
5. Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). *From Game Design Elements to Gamefulness: Defining Gamification*. Proceedings of the MindTrek Conference.
6. McGonigal, J. (2011). *Reality is broken: Why games make us better and how they can change the world*. Penguin Press.
- Anderson, C. (2011). *Free: The Future of a Radical Price*. Hyperion (for understanding digital economics and rewards in education).

Web Resources

1. Edutopia. (n.d.). *Using gamification to engage students*. Retrieved July 2, 2025, from <https://www.edutopia.org/article/using-gamification-engage-students>
2. ISTE. (2023). *Game-based learning: What it is, why it works, and how to use it in the classroom*. Retrieved from <https://www.iste.org/explore/Toolbox/game-based-learning>
3. TeachThought. (2023). *The ultimate guide to gamification in education*. Retrieved from <https://www.teachthought.com/learning/gamification-in-education/>
4. Classcraft. (n.d.). *Resources for gamifying your classroom*. Retrieved July 2, 2025, from <https://www.classcraft.com/resources/>
5. EdSurge. (n.d.). *Gamification in education*. Retrieved July 2, 2025, from <https://www.edsurge.com/news/gamification>
6. Game-Based Learning Alliance. (2024). *Gamification resources and best practices*. Retrieved from <https://www.gblalliance.org/>
7. Kahoot! (n.d.). *Education resources*. Retrieved July 2, 2025, from <https://kahoot.com/schools/resources/>
8. The Learning Counsel. (2023). *Interactive learning technologies and strategies*. Retrieved from <https://thelearningcounsel.com/>
9. eLearning Industry. (2023). *Gamification in learning: Benefits and implementation tips*. Retrieved from <https://elearningindustry.com/gamification>
10. EdTech Magazine. (2024). *How gamification supports personalized learning*. Retrieved from <https://edtechmagazine.com/k12/article/2024/03/how-gamification-supports-personalized-learning>

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 Department of Education
 Office of the Superintendent

Specialization 8: Artificial Intelligence in Education

Specialization 8: Artificial Intelligence in Education (Select any Six Courses)				
1.	EDUC-6269	Introduction to Artificial Intelligence in Education	3(3-0)	<i>Nil</i>
2.	EDUC-6270	Artificial Intelligence in Schools	3(3-0)	<i>Nil</i>
3.	EDUC-6271	Artificial Intelligence for Teachers and Education Leaders	3(3-0)	<i>Nil</i>
4.	EDUC-6272	Artificial Intelligence Supported Educational Technologies	3(3-0)	<i>Nil</i>
5.	EDUC-6273	Artificial Intelligence in Education: Ethics and Impacts	3(3-0)	<i>Nil</i>
6.	EDUC-6274	Future Trends and Innovations in AI for Education	3(3-0)	<i>Nil</i>
7.	EDUC-6275	Artificial Intelligence Powered Learning Tools and Platforms	3(3-0)	<i>Nil</i>

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 Graduate Program
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EDUC-6269 Introduction to Artificial Intelligence in Education 3(3-0)**Course Description**

This course provides an introduction to the principles and applications of Artificial Intelligence (AI) in educational settings. It explores how AI technologies can transform teaching, learning, assessment, and administration. Students will examine the ethical, pedagogical, and practical implications of AI in education. Key concepts such as intelligent tutoring systems, adaptive learning platforms, learning analytics, and generative AI will be explored. The course also emphasizes the role of AI in personalized learning, data-driven decision-making, and the future of education. Through case studies and hands-on tools, students will learn to critically evaluate and meaningfully integrate AI into educational contexts.

Course Objectives

The course will enable learners to:

1. Understand basic concepts and evolution of Artificial Intelligence and its relevance to education.
2. Explore key AI applications and tools in teaching, learning, and assessment.
3. Analyze the pedagogical implications of AI integration in classrooms.
4. Investigate ethical considerations and data privacy issues related to AI in education.
5. Evaluate AI-based educational tools using evidence-based practices.
6. Design lesson plans or learning activities incorporating AI technologies.
7. Reflect on the future roles of teachers and learners in AI-enabled educational environments.

Course Outline**Unit 1: Introduction to Artificial Intelligence in Education**

- 1.1 Defining Artificial Intelligence (AI)
- 1.2 History and evolution of AI
- 1.3 Overview of AI in different industries
- 1.4 Importance of AI in education
- 1.5 Current trends and future directions of AI in education

Unit 2: Foundations of AI Technologies

- 2.1 Core components of AI (Machine Learning, Natural Language Processing, Computer Vision)
- 2.2 Algorithms and data in AI systems
- 2.3 Introduction to Chatbots, Virtual Assistants, and Language Models
- 2.4 Tools and platforms (ChatGPT, IBM Watson, Google AI, etc.)
- 2.5 Limitations and challenges of current AI systems

Unit 3: Applications of AI in Teaching and Learning

- 3.1 Intelligent Tutoring Systems (ITS)
- 3.2 Adaptive and personalized learning platforms
- 3.3 AI for student engagement and motivation
- 3.4 AI in curriculum and content generation
- 3.5 Virtual teaching assistants and classroom automation

Unit 4: AI in Assessment and Evaluation

- 4.1 Automated grading and feedback systems
- 4.2 Learning analytics and data dashboards
- 4.3 AI-based formative and summative assessments

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- 4.4 Predictive analytics for student performance
- 4.5 Fairness and bias in AI assessments

Unit 5: Designing AI-Enhanced Learning Experiences

- 5.1 Aligning AI tools with learning outcomes
- 5.2 Creating lesson plans with AI-based personalization
- 5.3 Blended and hybrid models using AI
- 5.4 Scaffolding and differentiation through AI
- 5.5 Use of AI for inclusive and accessible education

Unit 6: Ethical, Legal, and Social Implications

- 6.1 Ethical principles in AI (transparency, fairness, accountability)
- 6.2 Student data privacy and protection (FERPA, GDPR)
- 6.3 Risks of AI surveillance and dependency in classrooms
- 6.4 Equity, inclusion, and the digital divide
- 6.5 AI literacy for teachers and students

Unit 7: Evaluating and Implementing AI Tools

- 7.1 Criteria for selecting AI tools for education
- 7.2 Usability and pedagogical alignment
- 7.3 Challenges in AI implementation in schools
- 7.4 Teacher readiness and professional development
- 7.5 Institutional strategies for adopting AI technologies

Unit 8: Future of Education in the Age of AI

- 8.1 Shifting teacher and student roles
- 8.2 AI's role in lifelong and workplace learning
- 8.3 Human-AI collaboration in education
- 8.4 Trends: Generative AI, Metaverse, Blockchain, and beyond
- 8.5 Preparing students for an AI-driven world

Recommended Texts

1. Khosravi, H., Sadiq, S., & Gasevic, D. (2022). *Explainable Artificial Intelligence in Education. Computers & Education: Artificial Intelligence*, 3, 100074.
2. Cope, B., Kalantzis, M., Sears-Smith, D., & Bagley, B. (2021). *AI for Education: Learning Futures, Literacy and AI*. Cambridge University Press.
3. Dede, C., & Richards, J. (Eds.). (2020). *The 60-year curriculum: New models for lifelong learning in the digital economy*. Routledge.
4. Holmes, W., Bialik, M., & Fadel, C. (2019). *Artificial Intelligence in Education: Promises and Implications for Teaching and Learning*. Center for Curriculum Redesign.
5. Luckin, R. (2018). *Machine Learning and Human Intelligence: The Future of Education for the 21st Century*. UCL IOE Press.
6. Luckin, R. (2018). *Machine learning and human intelligence: The future of education for the 21st century*. UCL Institute of Education Press.
7. Holmes, W., Bialik, M., & Fadel, C. (2019). *Artificial intelligence in education: Promises and implications for teaching and learning*. Center for Curriculum Redesign.
8. Woolf, B. P. (2010). *Building intelligent interactive tutors: Student-centered strategies for revolutionizing e-learning*. Morgan Kaufmann.

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 Assistant Professor
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Suggested Readings

1. Liu, M., & Lin, T.-B. (Eds.). (2021). *Artificial intelligence and education: A critical perspective*. Routledge.
2. Castañeda, L., & Williamson, B. (2021). *The Automated EdTech Imaginary: Neoliberalism, Technology and the Regulation of Education*. *Learning, Media and Technology*, 46(1), 1–14.
3. Selwyn, N. (2019). *Should robots replace teachers? AI and the future of education*. Polity Press.
4. Baker, R. S., & Inventado, P. S. (2014). Educational data mining and learning analytics. In *Learning Analytics* (pp. 61-75). Springer.
5. UNESCO. (2021). *AI and Education: Guidance for Policymakers*. <https://unesdoc.unesco.org/ark:/48223/pf0000376709>

🌐 Web Resources

1. **EDUCAUSE – Artificial Intelligence in Higher Ed**
<https://www.educause.edu/focus-areas-and-initiatives/teaching-and-learning/artificial-intelligence>
Resources and case studies on AI adoption in education.
2. **UNESCO – AI and Education**
<https://en.unesco.org/artificial-intelligence/education>
UNESCO's policy guidance and ethical considerations of AI in education.
3. **OECD – AI and the Future of Skills**
<https://www.oecd.org/education/ai-in-education.htm>
Reports and insights on AI's impact on skills and learning.
4. **World Economic Forum – AI in Education**
<https://www.weforum.org/agenda/archive/artificial-intelligence-education/>
Articles and discussions on global trends in AI and education.
5. **EdSurge – AI in the Classroom**
<https://www.edsurge.com/research/guides/artificial-intelligence-in-education>
News, case studies, and practical uses of AI in teaching.
6. **ISTE – Artificial Intelligence in Education**
<https://www.iste.org/explore/topic/artificial-intelligence>
Resources for educators to implement AI tools in classrooms.
7. **Center for Curriculum Redesign**
<https://curriculumredesign.org>
Publications and white papers related to AI and future-ready education.
8. **Brookings Institution – AI and Education**
<https://www.brookings.edu/topic/artificial-intelligence/>
Research-based insights into the societal impacts of AI, including education.

Arvid

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EDUC-6270

Artificial Intelligence in Schools

Credit Hours: 3(3-0)

Course Description

This course introduces pre-service and in-service educators to the foundations, tools, applications, and implications of Artificial Intelligence (AI) in K-12 school education. It explores how AI can be integrated into classroom instruction, school management, student support services, and curriculum enhancement. Participants will examine real-world use cases, develop basic literacy in AI concepts, and critically engage with ethical, pedagogical, and equity-related issues in AI implementation. Emphasis is placed on equipping educators with the skills and mindset needed to prepare students for an AI-driven future and foster responsible use of AI technologies in schools.

Course Objectives

The course will enable learners to:

1. Understand the basic principles and types of Artificial Intelligence relevant to school settings.
2. Explore practical applications of AI tools in teaching, learning, and school management.
3. Identify ethical, legal, and social concerns related to AI use in K-12 education.
4. Evaluate the readiness of schools, teachers, and students for AI integration.
5. Design lesson activities or school initiatives incorporating AI-based solutions.
6. Promote AI literacy among students and educators.
7. Reflect on future trends in education driven by AI and emerging technologies.

Course Outline

Unit 1: Introduction to Artificial Intelligence in Schools

- 1.1 What is AI? Key concepts simplified for school contexts
- 1.2 History and evolution of AI in education
- 1.3 The importance of AI awareness in K-12 settings
- 1.4 AI in everyday life and learning

Unit 2: Types and Functions of AI in Education

- 2.1 Machine learning, natural language processing, and expert systems
- 2.2 AI-powered tools for content generation and assessment
- 2.3 AI for language learning, STEM instruction, and learning disabilities support
- 2.4 AI in classroom management and communication

Unit 3: AI Tools and Applications in Schools

- 3.1 Intelligent tutoring systems (e.g., Squirrel AI, Century Tech)
- 3.2 AI-powered chatbots and digital assistants for student support
- 3.3 AI-based assessment tools (auto-grading, learning analytics dashboards)
- 3.4 Educational apps using AI (Khanmigo, Duolingo, Grammarly)
- 3.5 Classroom case studies and practical demonstrations

Unit 4: AI for School Leadership and Administration

- 4.1 AI in data-driven decision-making
- 4.2 Predictive analytics for attendance, performance, and interventions
- 4.3 Automation of routine administrative tasks
- 4.4 Risks of over-reliance on AI in school systems

Unit 5: Teaching AI Literacy in Schools

- 5.1 What is AI literacy and why does it matter?
- 5.2 Frameworks for teaching AI concepts to students

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 Associate Professor
 Department of Education
 University of Pangasinana

- 5.3 AI across the curriculum (cross-disciplinary approaches)
- 5.4 Coding, robotics, and problem-solving with AI
- 5.5 Recommended resources and curricula (e.g., AI4K12, Google AI for Education)

Unit 6: Designing AI-Enhanced Learning Activities

- 6.1 Creating lesson plans using AI tools
- 6.2 Differentiation and personalized learning with AI
- 6.3 Integrating generative AI (e.g., ChatGPT, Canva Magic Write)
- 6.4 Digital storytelling, simulations, and role-playing using AI

Unit 7: Ethics, Equity, and Responsibility in AI Use

- 7.1 Privacy and data protection (GDPR, FERPA basics)
- 7.2 AI bias and fairness in student outcomes
- 7.3 Inclusion and accessibility in AI systems
- 7.4 Teaching responsible and ethical use of AI tools
- 7.5 Preventing misuse and dependency on AI in classrooms

Unit 8: Preparing Schools and Educators for AI Integration

- 8.1 Teacher readiness and professional development
- 8.2 Infrastructure and policy requirements for AI in schools
- 8.3 Role of school leadership in managing AI change
- 8.4 Collaborating with parents and the community

Unit 9: Future of Education with AI

- 9.1 Trends in AI and educational transformation
- 9.2 Human-AI collaboration in the classroom
- 9.3 AI and the future teacher-student relationship
- 9.4 The role of schools in shaping AI citizens

Recommended Texts

1. Holmes, W., & Tuomi, I. (2022). *AI and education: Guidance for policy makers*. OECD Publishing.
2. Cukurova, M., Luckin, R., & Kent, C. (2021). *Artificial intelligence and education: A critical view through the lens of human intelligence*. *Frontiers in Education*, 6, 685024.
3. Zhai, X. (2021). *Artificial intelligence in STEM education: Emerging technologies and pedagogical innovations*. IGI Global.
4. Coeckelbergh, M. (2020). *AI Ethics*. MIT Press.
5. Holmes, W., Bialik, M., & Fadel, C. (2019). *Artificial intelligence in education: Promises and implications for teaching and learning*. Center for Curriculum Redesign.
6. Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (Eds.). (2019). *Systematic review of research on artificial intelligence applications in higher education – where are the educators?* *International Journal of Educational Technology in Higher Education*, 16(1), 39.

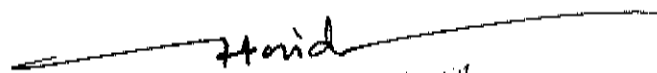
Suggested Readings

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1. Holmes, W., Bialik, M., & Fadel, C. (2019). *Artificial Intelligence in Education: Promises and Implications for Teaching and Learning*. Center for Curriculum Redesign.
2. Luckin, R. (2018). *Machine Learning and Human Intelligence: The Future of Education for the 21st Century*. UCL IOE Press.
3. Luckin, R. (2018). *Machine learning and human intelligence: The future of education for the 21st century*. UCL Institute of Education Press.
4. Woolf, B. P. (2010). *Building intelligent interactive tutors: Student-centered strategies for revolutionizing e-learning*. Morgan Kaufmann.
5. Cope, B., Kalantzis, M., & Scarsmith, D. (2021). *AI and education: The importance of teacher and student agency in the age of artificial intelligence*. Cambridge University Press.
6. Selwyn, N. (2019). *Should robots replace teachers? AI and the future of education*. Polity Press.

Web Resources

1. **UNESCO – AI in Education Hub**
<https://www.unesco.org/en/artificial-intelligence/education>
A central resource for policies, ethics, and innovation around AI in education.
2. **EdSurge – Artificial Intelligence in Education**
<https://www.edsurge.com/research/topics/artificial-intelligence>
News and insights on AI applications in K-12 and higher education.
3. **OECD – AI in Education and Skills**
<https://www.oecd.org/education/ai/>
Research and global reports on the use of AI in education and workforce training.
4. **ISTE – AI and Education**
<https://www.iste.org/learn/AI>
Professional development, standards, and classroom-ready AI tools.
5. **TeachAI by Code.org**
<https://www.teachai.org/>
Collaborative initiative to support safe and effective use of AI in schools.
6. **AI4K12 Initiative**
<https://ai4k12.org/>
National guidelines and frameworks for integrating AI literacy into school curricula.
7. **EDUCAUSE – AI in Higher Education**
<https://www.educause.edu/ai>
Strategic reports on AI adoption, infrastructure, and learning technology.
8. **OpenAI – Education Resources**
<https://openai.com/education>
Tips and guidance on using tools like ChatGPT in learning and instruction.
9. **The Learning Agency Lab – AI in Learning**
<https://www.the-learning-agency.com/>
Research on the effectiveness and challenges of AI in classrooms.


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EDUC- 6271 Artificial Intelligence for Teachers and Education Leaders 3(3-0)**Course Description**

This course is designed to empower teachers and educational leaders with foundational knowledge, practical skills, and strategic insights for leveraging Artificial Intelligence (AI) in their professional roles. It covers the fundamentals of AI, its applications in teaching, learning, assessment, and institutional leadership, as well as ethical and policy considerations. Through hands-on activities, case studies, and tool explorations, educators will learn how to evaluate and implement AI technologies for improved pedagogy, school management, and decision-making. The course also emphasizes preparing educational systems and personnel for the challenges and opportunities posed by AI-driven transformation.

Course Objectives

By the end of this course, learners will be able to:

1. Understand key concepts and mechanisms of Artificial Intelligence and their relevance to education.
2. Identify AI tools that support instruction, learning personalization, and student assessment.
3. Analyze the impact of AI on curriculum design, pedagogy, and learning environments.
4. Apply AI tools to enhance instructional planning and delivery.
5. Evaluate the role of AI in school leadership, strategic planning, and resource management.
6. Explore ethical, legal, and social implications of AI integration in educational settings.
7. Develop an AI integration plan suitable for their school or educational institution.

Course Outline**Unit 1: Foundations of Artificial Intelligence for Educators**

- 1.1 Defining AI: Concepts and terminology
- 1.2 Evolution of AI and relevance to education
- 1.3 Types of AI (narrow AI, machine learning, generative AI)
- 1.4 Misconceptions and realities of AI in schools

Unit 2: AI in Teaching and Learning

- 2.1 Personalized learning with AI
- 2.2 AI-assisted instructional design and lesson planning
- 2.3 Intelligent tutoring systems (ITS)
- 2.4 Chatbots and virtual assistants in classrooms
- 2.5 AI-driven content generation and feedback tools

Unit 3: AI for Assessment and Learning Analytics

- 3.1 Automated grading and formative feedback
- 3.2 Predictive analytics and early intervention strategies
- 3.3 Adaptive testing systems
- 3.4 Data dashboards for tracking student progress
- 3.5 Validity and fairness in AI-based assessment

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University of Sagay

Unit 4: AI Tools for Teachers and Classrooms

- 4.1 Classroom applications: ChatGPT, Khanmigo, Google Bard, etc.
- 4.2 Content creation tools: Canva AI, MagicSchool AI, Eduaide.ai
- 4.3 Collaborative tools and intelligent platforms (Moodle, MS Teams, Google Classroom with AI)
- 4.4 Virtual Reality (VR) and Augmented Reality (AR) in teaching

Unit 5: Strategic Use of AI in School Leadership

- 5.1 School data management and AI
- 5.2 AI for strategic planning and institutional decision-making
- 5.3 Enhancing administrative efficiency with AI (scheduling, admissions, communication)
- 5.4 Staff development and performance analytics using AI

Unit 6: Policy, Ethics, and Equity in AI Implementation

- 6.1 Ethical principles: fairness, transparency, accountability
- 6.2 Data privacy laws (FERPA, GDPR, local regulations)
- 6.3 Bias and discrimination in AI systems
- 6.4 Inclusion and digital equity in AI adoption
- 6.5 Policy frameworks and institutional readiness

Unit 7: Preparing Students and Staff for an AI Future

- 7.1 Building AI literacy among teachers and students
- 7.2 Cross-curricular integration of AI concepts
- 7.3 Professional development for AI integration
- 7.4 The evolving roles of teachers and leaders in the AI age

Unit 8: Designing an AI Integration Plan

- 8.1 Assessing school readiness
- 8.2 Vision and goal setting for AI integration
- 8.3 Resource planning and infrastructure needs
- 8.4 Piloting AI solutions and collecting feedback
- 8.5 Developing a sustainable AI strategy for your institution

Recommended Texts

1. Choudhury, M. D., & Bhatia, R. (2023). *Teaching in the age of AI: A practical guide for educators*. Springer.
2. Zawacki-Richter, O., & Jung, I. (Eds.). (2023). *Handbook of artificial intelligence in education*. Springer.
3. EdTech Hub. (2023). *AI Tools for Education: Practical Guide for School Leaders*.
4. Mayer-Schönberger, V., & Cukier, K. (2021). *Big data: A revolution that will transform how we live, work, and think*. Eamon Dolan/Houghton Mifflin Harcourt.
5. Coeckelbergh, M. (2020). *AI Ethics*. MIT Press.
6. Holmes, W., Bialik, M., & Fadel, C. (2019). *Artificial Intelligence in Education: Promises and Implications for Teaching and Learning*. Center for Curriculum Redesign.
7. Holmes, W., Bialik, M., & Fadel, C. (2019). *Artificial intelligence in education: Promises and implications for teaching and learning*. Center for Curriculum Redesign.
8. Chassignol, M., Khoroshavin, A., Klimova, A., & Bilyatdinova, A. (2018). Artificial intelligence trends in education: A narrative overview. *Procedia Computer Science*, 136, 16-24. <https://doi.org/10.1016/j.procs.2018.08.233>

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Suggested Readings

1. Luckin, R. (2018). *Machine Learning and Human Intelligence: The Future of Education for the 21st Century*. UCL IOE Press.
2. Luckin, R. (2018). *Machine learning and human intelligence: The future of education for the 21st century*. UCL IOE Press.
3. Rose Luckin, R., Holmes, W., Griffiths, M., & Forcier, L. B. (2016). *Intelligence unleashed: An argument for AI in education*. Pearson.
4. Holmes, W., Porayska-Pomsta, K., & Holstein, K. (2022). *Artificial intelligence in education: Promise and implications for teaching and learning* (2nd ed.). Routledge.
5. Luckin, R. (2022). *AI for school teachers: A guide to understanding and using artificial intelligence in the classroom*. Routledge.
6. Selwyn, N. (2021). *Should robots replace teachers? AI and the future of education*. Polity Press.
7. Holmes, W., Porayska-Pomsta, K., Holstein, K., Sutherland, E., & Baker, T. (2021). Ethics of AI in education: Towards a community-wide framework. *International Journal of Artificial Intelligence in Education*, 31, 585- 620. <https://doi.org/10.1007/s40593-021-00239-1>

🌐 Web Resources

1. UNESCO -- Artificial Intelligence in Education
<https://en.unesco.org/artificial-intelligence/education>
 - Guidelines, ethical frameworks, and global policy recommendations on AI for educators.
2. OECD -- AI and the Future of Skills (AIFS)
<https://www.oecd.org/education/ai/>
 - Reports on how AI is reshaping education systems, teaching, and leadership roles.
3. AI4K12 Initiative (USA)
<https://ai4k12.org>
 - AI curriculum guidelines for school teachers, focusing on the "Five Big Ideas in AI."
4. EdSurge -- AI in Education Articles
<https://www.edsurge.com>
 - News, case studies, and innovations related to AI tools in classrooms.
5. Common Sense Education -- AI and EdTech Reviews
<https://www.common sense.org/education>
 - Reviews of AI-powered apps and platforms for teachers and school leaders.

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Course Description

This course explores the integration of Artificial Intelligence (AI) in educational technologies and its impact on teaching, learning, and institutional processes. It provides an in-depth examination of AI-supported tools and platforms used in K-12 and higher education contexts. Learners will engage with intelligent systems such as adaptive learning platforms, virtual assistants, automated grading, and AI-driven learning analytics. The course emphasizes the pedagogical, ethical, and practical considerations of adopting these technologies and aims to equip educators and technologists with the knowledge and skills to critically evaluate and apply AI in education effectively.

Course Objectives

By the end of this course, students will be able to:

1. Understand the principles and functions of AI-supported educational technologies.
2. Identify and evaluate current AI tools used in instructional, assessment, and administrative processes.
3. Analyze the pedagogical benefits and limitations of AI integration in classrooms.
4. Apply AI-based technologies in instructional design and content delivery.
5. Examine ethical, equity, and data privacy issues related to AI-supported tools.
6. Design a technology-supported learning activity using AI tools.
7. Explore trends shaping the future of AI in educational technology.

Course Outline

Unit 1: Introduction to AI in Educational Technology

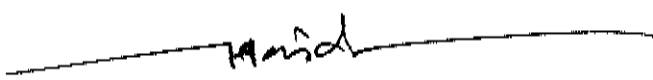
- 1.1 Overview of AI and Educational Technologies
- 1.2 Types of AI applications in education
- 1.3 Distinction between traditional and AI-based EdTech
- 1.4 Role of data and algorithms in AI-supported tools
- 1.5 Historical evolution of AI in education

Unit 2: Intelligent Instructional Systems

- 2.1 Intelligent Tutoring Systems (ITS)
- 2.2 Adaptive learning platforms (Knewton, Squirrel AI, DreamBox)
- 2.3 Personalized learning environments
- 2.4 Gamified AI learning tools
- 2.5 AI in virtual and augmented learning environments

Unit 3: AI for Assessment and Feedback

- 3.1 Automated essay scoring and grading systems
- 3.2 AI for formative and summative assessment
- 3.3 Real-time feedback and intervention systems
- 3.4 Predictive analytics for student outcomes
- 3.5 Validity, reliability, and fairness in AI assessment tools


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Unit 4: Virtual Assistants and Communication Tools

- 4.1 AI-powered chatbots in student support (e.g., IBM Watson Tutor, AdmitHub)
- 4.2 Virtual assistants for academic advising and scheduling
- 4.3 Multilingual support and speech recognition technologies
- 4.4 Smart content delivery via recommender systems
- 4.5 AI in collaborative platforms (MS Teams, Zoom, Google Classroom with AI)

Unit 5: AI and Learning Analytics

- 5.1 Introduction to learning analytics and educational data mining
- 5.2 Data dashboards and visualization tools
- 5.3 Early alert systems and student retention
- 5.4 Personalized recommendations using AI
- 5.5 Ethical implications of student data use

Unit 6: Designing Learning with AI-Supported Technologies

- 6.1 Aligning learning objectives with AI tools
- 6.2 Creating technology-enhanced learning environments
- 6.3 AI-supported content creation tools (e.g., ChatGPT, MagicSchool, Eduaide.ai)
- 6.4 Digital storytelling, simulations, and problem-solving with AI
- 6.5 Evaluating the effectiveness of AI-supported instruction

Unit 7: Ethical, Legal, and Social Considerations

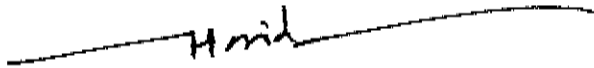
- 7.1 AI bias and algorithmic discrimination
- 7.2 Student data privacy and consent (FERPA, GDPR)
- 7.3 Equity and inclusion in access to AI EdTech
- 7.4 Legal regulations and policy frameworks
- 7.5 Promoting responsible use of AI in education

Unit 8: Trends and Future Directions

- 8.1 Generative AI and its educational applications
- 8.2 Integration of AI with VR/AR, IoT, and blockchain in education
- 8.3 Future role of educators in AI-enhanced systems
- 8.4 Preparing institutions for AI adoption
- 8.5 Research and innovation in AI-supported education

Recommended Texts

1. **Zeide, E.** (2022). *The automated classroom: Artificial intelligence in education*. MIT Press.
2. **Williamson, B., & Eynon, R.** (2020). *Education and technology: Key issues and debates*. Bloomsbury Academic.
3. **Crawford, K.** (2021). *Atlas of AI: Power, politics, and the planetary costs of artificial intelligence*. Yale University Press.
4. **Selwyn, N.** (2019). *Should robots replace teachers? AI and the future of education*. Polity Press.
5. **Dignum, V.** (2019). *Responsible artificial intelligence: How to develop and use AI in a responsible way*. Springer Nature.
6. Holmes, W., Bialik, M., & Fadel, C. (2019). *Artificial Intelligence in Education: Promises and Implications for Teaching and Learning*. Center for Curriculum Redesign.


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Suggested Readings

1. Luckin, R. (2018). *Machine Learning and Human Intelligence: The Future of Education for the 21st Century*. UCL IOE Press.
2. Baker, R., & Inventado, P. (2014). *Educational Data Mining and Learning Analytics*. Springer.
3. **Luckin, R.** (2018). *Machine learning and human intelligence: The future of education for the 21st century*. UCL Institute of Education Press.
4. **O'Neil, C.** (2016). *Weapons of math destruction: How big data increases inequality and threatens democracy*. Crown Publishing.
5. **Boddington, P.** (2017). *Towards a code of ethics for artificial intelligence*. Springer.
6. **Calo, R., Fromkin, A. M., & Kerr, I.** (2016). *Robot law*. Edward Elgar Publishing.

🌐 *Web Resources*

1. **UNESCO – Ethics of Artificial Intelligence in Education**
<https://www.unesco.org/en/artificial-intelligence/education>
 – Frameworks and policy recommendations for ethical AI use in education.
2. **OECD – AI in Education and Skills**
<https://www.oecd.org/education/ai/>
 – Ethical considerations and policy briefings for education systems.
3. **AI4People – Ethical Framework for a Good AI Society**
<https://www.eismd.eu/ai4people/>
 – Philosophical and practical approaches to AI ethics.
4. **EDUCAUSE – Artificial Intelligence and Ethics**
<https://www.educause.edu/ai>
 – Reports and toolkits for higher education leaders on ethical AI integration.
5. **TeachAI – Responsible AI Education**
<https://teachai.org/>
 – Tools and frameworks for ethically teaching AI in schools.
6. **Future of Life Institute -- AI Ethics and Policy**
<https://futureoflife.org/>
 – Research and resources on AI safety, ethics, and impact.
7. **The Alan Turing Institute – AI Ethics and Education**
<https://www.turing.ac.uk/>
 – Leading UK research on responsible AI in public sectors, including education.
8. **Brookings Institution – Algorithmic Bias in Education**
<https://www.brookings.edu/>
 – Articles analyzing how AI might reinforce inequality in education.

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EDUC-6273 Artificial Intelligence in Education: Ethics and Impacts 3(3-0)**Course Description**

This course examines the ethical, social, and educational implications of Artificial Intelligence (AI) in learning environments. As AI becomes increasingly integrated into education systems, it raises critical questions about fairness, transparency, privacy, accountability, and the changing roles of teachers and students. The course explores global frameworks and case studies to help learners understand how to navigate the ethical complexities and long-term impacts of AI in education. Participants will evaluate real-world scenarios, policy debates, and current research to develop ethically responsible approaches to the adoption and governance of AI in schools and higher education.

Course Objectives

By the end of this course, learners will be able to:

1. Understand the ethical principles relevant to the use of AI in educational contexts.
2. Identify the risks and benefits of AI implementation in teaching, learning, and administration.
3. Evaluate issues related to data privacy, algorithmic bias, and surveillance in AI systems.
4. Analyze the social and psychological impacts of AI on learners, educators, and institutions.
5. Interpret local and global policy frameworks guiding ethical AI use in education.
6. Formulate ethically responsible strategies for the implementation of AI in education.
7. Engage in critical dialogue on the future of education in an AI-driven world.

Course Outline**Unit 1: Introduction to AI and Ethics in Education**

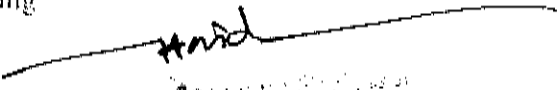
- 1.1 Overview of AI in education
- 1.2 Key ethical questions raised by AI adoption
- 1.3 Importance of ethics in educational technology
- 1.4 Ethical frameworks: consequentialism, deontology, virtue ethics
- 1.5 Human rights and AI in education

Unit 2: Core Ethical Principles in AI Use

- 2.1 Fairness and equity in AI-supported learning systems
- 2.2 Transparency and explainability of AI algorithms
- 2.3 Accountability and responsibility of educational institutions
- 2.4 Safety, security, and reliability in AI tools
- 2.5 Consent and autonomy of learners and educators

Unit 3: Privacy, Data Protection, and Surveillance

- 3.1 Student data collection and consent
- 3.2 Anonymity and pseudonymity in educational data systems
- 3.3 Data protection laws (FERPA, GDPR, national policies)
- 3.4 Surveillance concerns and classroom monitoring
- 3.5 Balancing innovation and privacy rights


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Unit 4: Algorithmic Bias and Inequality

- 4.1 Understanding bias in AI datasets and algorithms
- 4.2 Disproportionate impacts on marginalized learners
- 4.3 Socioeconomic and digital divide implications
- 4.4 Case studies on biased educational AI systems
- 4.5 Strategies for auditing and mitigating bias

Unit 5: Psychological and Social Impacts

- 5.1 Human-AI interaction in learning environments
- 5.2 Dependence on AI and impact on critical thinking
- 5.3 Student motivation, agency, and identity in AI-mediated learning
- 5.4 Changing teacher-student relationships
- 5.5 AI's influence on mental health and well-being

Unit 6: Ethical Design and Deployment of AI Tools

- 6.1 Principles of responsible AI design
- 6.2 Inclusive and user-centered development
- 6.3 Accessibility and Universal Design for Learning (UDI) in AI systems
- 6.4 AI evaluation and testing for ethical compliance
- 6.5 Stakeholder involvement in ethical AI development

Unit 7: Policy and Governance of AI in Education

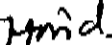
- 7.1 UNESCO and OECD guidelines on AI in education
- 7.2 Institutional and national policies for AI governance
- 7.3 Role of educational leaders and policymakers
- 7.4 Ethical review boards and oversight mechanisms
- 7.5 Developing institutional AI ethics policies

Unit 8: Future Scenarios and Critical Reflections

- 8.1 Ethical dilemmas in emerging AI trends (e.g., generative AI, surveillance tech)
- 8.2 Speculative futures: automation of education and teacher displacement
- 8.3 Designing ethically sound AI strategies for schools and universities
- 8.4 Building AI literacy and ethical awareness in students
- 8.5 Global collaboration for AI ethics in education

Recommended Texts

1. OECD. (2021). *AI and the future of skills, volume 1: Capabilities and assessments*. OECD Publishing. <https://doi.org/10.1787/3bfdd3d0-en>
2. UNESCO. (2021). *Reimagining our futures together: A new social contract for education*. UNESCO Publishing. <https://unesdoc.unesco.org/ark:/48223/pf0000379707>
3. Coeckelbergh, M. (2020). *AI Ethics*. MIT Press.
4. Cowen, T., & Tabarrok, A. (2020). *Ethics and AI: How should humans live with intelligent machines?* Marginal Revolution University. <https://mru.org>
5. Holmes, W., Bialik, M., & Fadel, C. (2019). *Artificial intelligence in education: Promises and implications for teaching and learning*. Center for Curriculum Redesign. <https://curriculumredesign.org>
6. Selwyn, N. (2019). *Should robots replace teachers? AI and the future of education*. Polity Press.

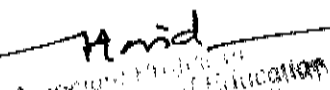

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Suggested Readings

1. Luckin, R. (2018). *Machine learning and human intelligence: The future of education for the 21st century*. UCL IOE Press.
2. Seldon, A., & Abidoye, O. (2018). *The fourth education revolution: Will artificial intelligence liberate or infantilise humanity?* University of Buckingham Press.
3. Floridi, I. (2019). *The Ethics of Artificial Intelligence*. Oxford University Press.
4. Holmes, W., Bialik, M., & Fadel, C. (2019). *Artificial Intelligence in Education: Promises and Implications for Teaching and Learning*. Center for Curriculum Redesign.
5. Holmes, W., Porayska-Pomsta, K., & Holstein, K. (2022). *Ethics of AI in education: Towards a community-wide framework*. *British Journal of Educational Technology*, 53(4), 645–672. <https://doi.org/10.1111/bjjet.13220>
6. Cukurova, M., & Luckin, R. (2023). *Artificial intelligence and ethics in education: Can we trust intelligent machines with our children?* *AI & Society*, 38, 117–131. <https://doi.org/10.1007/s00146-022-01420-4>
7. Williamson, B., & Eynon, R. (2020). *Historical threads, missing links, and future directions in AI in education*. *Learning, Media and Technology*, 45(3), 223–235. <https://doi.org/10.1080/17439884.2020.1798995>

🌐 Web Resources

1. **UNESCO – Artificial Intelligence in Education**
<https://www.unesco.org/en/artificial-intelligence/education>
 - Offers global policy recommendations, ethical guidelines, and research reports on AI in education.
 - Includes the 2021 report "*AI and Education: Guidance for Policymakers*."
2. **OECD – AI and the Future of Education**
<https://www.oecd.org/education/artificial-intelligence.htm>
 - Research briefs, policy outlooks, and case studies on AI's role in teaching and learning.
3. **AI4K12 Initiative**
<https://ai4k12.org>
 - Aims to develop national guidelines for teaching AI in K–12 settings.
 - Includes lesson plans, curriculum guides, and ethical use resources.
4. **Council of Europe – Digital Citizenship and AI Ethics**
<https://www.coe.int/en/web/digital-citizenship-education>
 - Provides educational materials and ethical considerations for AI and digital technologies in schools.
5. **Center for Humane Technology**
<https://www.humanetech.com>
 - Explores ethical concerns in tech use, including AI's psychological and social impacts on learners.
6. **EDUCAUSE – AI in Higher Education**
<https://www.educause.edu/focus-areas-and-initiatives/policy-and-security/artificial-intelligence>
 - Focuses on responsible AI use in higher education and includes policy frameworks, case studies, and campus practices.
7. **Common Sense Education – AI and Ethics Curriculum**
<https://www.commonsense.org/education/digital-citizenship>


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- o Offers classroom-ready materials and videos on AI, data privacy, and digital well-being.
8. **The Alan Turing Institute -- Data Ethics and AI**
<https://www.turing.ac.uk/research/research-programmes/ai-and-data-science>
- o Explores data ethics, machine learning, and bias in AI systems including tools for educators and policymakers.
9. **Edutopia – Artificial Intelligence in the Classroom**
<https://www.edutopia.org/topic/artificial-intelligence>
- o Articles, real-world examples, and strategies for AI integration in K-12 learning with ethical awareness.
10. **World Economic Forum – Education 4.0 & AI**
<https://www.weforum.org/focus/future-of-education>
- o Covers innovation, AI integration, and future skills, with ethical implications discussed in global

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EDUC-6274 Future Trends and Innovations in AI for Education 3(3-0)

Course Description

This course explores the cutting-edge developments and emerging trends in Artificial Intelligence (AI) and their transformative potential in education. It introduces learners to future-oriented innovations such as generative AI, intelligent learning environments, learning analytics, immersive technologies (VR/AR), brain-computer interfaces, and AI-driven curriculum design. Emphasis is placed on forecasting how these advancements will reshape pedagogy, assessment, educational leadership, and equity. The course also promotes critical engagement with speculative futures, innovation ethics, and the role of educators in an AI-enhanced educational ecosystem.

Course Objectives

By the end of this course, learners will be able to:

1. Identify and describe emerging trends in AI applications relevant to education.
2. Analyze how technological innovations may influence teaching, learning, and school systems.
3. Explore and experiment with next-generation AI tools and platforms.
4. Examine the ethical and societal implications of futuristic AI developments in education.
5. Predict the long-term impact of AI innovations on educational policy and practice.
6. Design forward-thinking educational models or strategies incorporating AI advancements.
7. Critically reflect on the evolving roles of teachers and students in AI-enhanced learning environments.

Course Outline

Unit 1: Foundations of Educational Innovation and Foresight

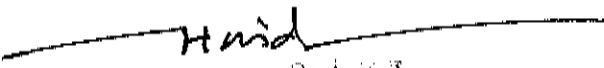
- 1.1 What is educational foresight?
- 1.2 Innovation cycles and technology adoption in education
- 1.3 Drivers of AI innovation in education
- 1.4 Futures thinking and scenario planning in EdTech

Unit 2: Generative AI in Education

- 2.1 Overview of generative AI (ChatGPT, DALL-E, Gemini, etc.)
- 2.2 Applications in content creation, language learning, and creativity
- 2.3 Implications for curriculum design and student assessment
- 2.4 Designing responsible use cases for generative AI
- 2.5 Limitations and risks of generative AI

Unit 3: Intelligent Learning Environments and Adaptive Systems

- 3.1 Smart classrooms and context-aware learning systems
- 3.2 Emotion AI and affective computing
- 3.3 Adaptive learning technologies and personalized pathways
- 3.4 Use of facial recognition and sensor data for engagement tracking
- 3.5 Integration with Internet of Things (IoT) in education


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Unit 4: Immersive AI Technologies: AR, VR, and XR

- 4.1 Role of AI in powering immersive simulations
- 4.2 Virtual labs, AI avatars, and digital twins in education
- 4.3 Learning through virtual and augmented environments
- 4.4 Use cases in STEM, arts, and professional education
- 4.5 Challenges: accessibility, cost, and cognitive load

Unit 5: Learning Analytics and Predictive Insights

- 5.1 AI in tracking and predicting student performance
- 5.2 Real-time dashboards and decision support tools
- 5.3 Learning behavior pattern analysis and interventions
- 5.4 The rise of microlearning and just-in-time learning
- 5.5 Ethics of data use and learning surveillance

Unit 6: AI for Inclusive and Equitable Education

- 6.1 Universal Design for Learning (UDL) and AI
- 6.2 AI for accessibility: speech-to-text, sign language interpreters, translation
- 6.3 AI support for neurodiverse and differently-abled learners
- 6.4 Innovations for underserved and remote communities
- 6.5 Bridging the digital divide with intelligent solutions

Unit 7: Future Roles of Educators and Institutions


- 7.1 Teacher-AI collaboration and augmentation
- 7.2 Rethinking teacher training for AI fluency
- 7.3 Human-AI co-teaching models
- 7.4 School leadership in an AI-augmented environment
- 7.5 Institutional change and AI readiness

Unit 8: Speculative Futures and Strategic Innovation

- 8.1 Brain-computer interfaces and neuro-education
- 8.2 Blockchain and credentialing innovations
- 8.3 AI governance and algorithmic accountability
- 8.4 Designing future-ready education systems
- 8.5 Building ethical innovation cultures in schools and universities

Recommended Texts

1. Holmes, W., Bialik, M., & Fadel, C. (2019). *Artificial intelligence in education: Promises and implications for teaching and learning*. Center for Curriculum Redesign.
2. Cope, B., & Kalantzis, M. (2021). *AI for educators: Learning analytics, predictive modeling, and smart content*. Cambridge University Press.
3. Williamson, B., & Eynon, R. (2020). *Education and technology: Key issues and debates*. Bloomsbury Academic.
4. Luckin, R. (2018). *Machine Learning and Human Intelligence: The Future of Education for the 21st Century*. UCL IOE Press.
5. Holmes, W., Bialik, M., & Fadel, C. (2019). *Artificial Intelligence in Education: Promises and Implications for Teaching and Learning*. Center for Curriculum Redesign.
6. Cope, B., Kalantzis, M., Searsmith, D., & Bagley, B. (2021). *AI for Education: Learning Futures, Literacy, and Artificial Intelligence*. Cambridge University Press.

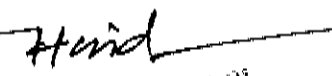

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Suggested Readings and Online Resources

1. Luckin, R. (2018). *Machine learning and human intelligence: The future of education for the 21st century*. UCL Institute of Education Press.
2. Roll, L., & Wylie, R. (Eds.). (2016). *Intelligent tutoring systems: Structure, design, and applications*. Springer.
3. Popenici, S. A. D., & Kerr, S. (2017). *Exploring the impact of artificial intelligence on teaching and learning in higher education*. In *Research and Practice in Technology Enhanced Learning*, 12(1), 1–13.
4. Selwyn, N. (2019). *Should robots replace teachers? AI and the future of education*. Polity Press.
5. Kaplan, J. (2016). *Artificial intelligence: What everyone needs to know*. Oxford University Press.
6. Baker, R. S., & Inventado, P. S. (2014). *Educational data mining and learning analytics*. In J. M. Spector et al. (Eds.), *Handbook of research on educational communications and technology* (pp. 61–75). Springer.

🌐 Web Resources

1. [AI in Education – UNESCO](#)
Global policy and practice hub for AI integration in education.
2. [EdSurge – AI in Education](#)
Articles, news, and research on emerging AI tools in classrooms.
3. [AI4K12 Initiative](#)
U.S. national initiative to bring AI literacy to K-12 education.
4. [Center for Integrative Research in Computing and Learning Sciences \(CIRCLS\)](#)
Resources and projects exploring AI in STEM and learning technologies.
5. [EDUCAUSE – Artificial Intelligence](#)
Reports, case studies, and webinars for higher education professionals.
6. [TeachAI – Code.org](#)
Global coalition supporting AI literacy and ethical integration in schools.
7. [OpenAI Education Resources](#)
Best practices for using GPT-powered tools in educational settings.
8. [The Learning Agency Lab](#)
Research and insights on AI tools improving learning outcomes.
9. [World Economic Forum – AI in Education](#)
Thought leadership and global trends shaping AI use in classrooms.
10. [ISTE – Artificial Intelligence Explorations and Their Practical Use in Schools](#)
Professional learning and certification program for educators using AI tools.


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EDUC-6275 Artificial Intelligence Powered Learning Tools and Platforms 3(3-0)

Course Description

This course provides an in-depth exploration of Artificial Intelligence (AI)-powered learning tools and platforms that are transforming educational environments. It focuses on understanding, evaluating, and applying intelligent systems that support personalized learning, automated assessment, virtual instruction, and student engagement. Learners will examine a variety of AI tools and platforms—from adaptive learning systems to generative AI applications—and will critically assess their pedagogical utility, technological design, and ethical implications. The course is hands-on, with practical activities using current AI tools in teaching, learning, and course design.

Course Objectives

Upon successful completion of the course, learners will be able to:

1. Understand the functionality and pedagogical foundations of AI-powered learning tools.
2. Explore a range of AI learning platforms and analyze their educational applications.
3. Evaluate the effectiveness of AI tools for instruction, differentiation, and assessment.
4. Design and implement AI-enhanced learning activities.
5. Examine challenges such as bias, equity, data privacy, and over-reliance on automation.
6. Compare features of leading AI-powered platforms and tools used globally.
7. Advocate for the responsible adoption of AI tools in their own institutions.

Course Outline

Unit 1: Introduction to AI-Powered Learning Tools

- 1.1 What makes a learning tool "AI-powered"?
- 1.2 Role of AI in education technology ecosystems
- 1.3 Key features: personalization, automation, feedback, adaptability
- 1.4 Pedagogical principles behind AI tool development

Unit 2: Adaptive Learning Systems

- 2.1 Concept and working of adaptive learning platforms
- 2.2 Examples: Smart Sparrow, DreamBox, Knewton, Carnegie Learning
- 2.3 Personalized learning pathways and student profiles
- 2.4 Teacher dashboards and real-time analytics

Unit 3: Generative AI Tools for Education

- 3.1 Content creation using generative AI (e.g., ChatGPT, Eduaide.ai, MagicSchool.ai)
- 3.2 Lesson planning, activity design, and quiz generation
- 3.3 Text summarization, translation, and paraphrasing tools
- 3.4 Creative AI tools for storytelling, art, and media production

Unit 4: AI-Based Assessment Tools

- 4.1 Automated grading and feedback systems (e.g., Gradescope, Turnitin AI, Google Forms with AI)
- 4.2 Diagnostic and formative assessments using AI

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- 4.3 Predictive analytics for student performance
- 4.4 AI for rubric-based evaluation and peer assessment

Unit 5: Virtual Teaching Assistants and Chatbots

- 5.1 AI chatbots in education (e.g., Jill Watson, Khanmigo, QuizBot)
- 5.2 Conversational agents and student support
- 5.3 AI for academic advising, scheduling, and reminders
- 5.4 Use of natural language processing in learner interaction

Unit 6: AI-Enhanced Learning Management Systems (LMS)

- 6.1 Features of AI-integrated LMS (e.g., Moodle, Canvas, Brightspace)
- 6.2 Intelligent recommendations and personalized content delivery
- 6.3 Embedded analytics and learning behavior tracking
- 6.4 Case studies of LMS systems using AI

Unit 7: Evaluating and Comparing AI Learning Tools

- 7.1 Criteria for evaluating learning technologies (usability, effectiveness, ethics)
- 7.2 Comparative analysis of tools across subjects and levels
- 7.3 Accessibility, equity, and inclusivity in tool design
- 7.4 Security, licensing, and data protection considerations

Unit 8: Designing AI-Enhanced Learning Experiences

- 8.1 Planning technology-integrated lessons with AI tools
- 8.2 Aligning AI tools with learning outcomes and instructional strategies
- 8.3 Teacher role in AI-supported learning
- 8.4 Challenges in classroom integration and institutional adoption

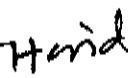
Unit 9: Responsible and Ethical Use of AI Tools

- 9.1 Avoiding over-reliance and promoting critical thinking
- 9.2 Addressing AI bias and misinformation
- 9.3 Promoting digital well-being in AI-rich environments
- 9.4 Educator's responsibility in tool selection and student guidance

Recommended Texts

1. Amershi, S., & Weld, D. S. (2022). *Human-AI interaction in education*. Morgan & Claypool Publishers.
2. Kong, S. C., Yang, M., & Zhao, Y. (Eds.). (2022). *AI in education: The shift toward learner agency*. Springer.
3. Cope, B., Kalantzis, M., Searsmith, D., & Bagley, B. (2021). *AI for Education: Learning Futures, Literacy and Artificial Intelligence*. Cambridge University Press.
4. Holmes, W., Bialik, M., & Fadel, C. (2019). *Artificial Intelligence in Education: Promises and Implications for Teaching and Learning*. Center for Curriculum Redesign.
5. Holmes, W., Bialik, M., & Fadel, C. (2019). *Artificial intelligence in education: Promises and implications for teaching and learning*. Center for Curriculum Redesign.
6. Luckin, R. (2018). *Machine learning and human intelligence: The future of education for the 21st century*. UCL Institute of Education Press.

Suggested Readings


 Associate Professor
 Department of Education
 University of Sargodha

1. Luckin, R. (2018). *Machine Learning and Human Intelligence: The Future of Education for the 21st Century*. UCL IOE Press.
2. Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). *Systematic review of research on artificial intelligence applications in higher education – where are the educators?* International Journal of Educational Technology in Higher Education, 16(1), 39. <https://doi.org/10.1186/s41239-019-0171-0>
3. Williamson, B., & Eynon, R. (2020). *Historical threads, missing links, and future directions in AI in education*. Learning, Media and Technology, 45(3), 223–235.
4. Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). *Systematic review of research on artificial intelligence applications in higher education – where are the educators?* International Journal of Educational Technology in Higher Education, 16(1), 39. <https://doi.org/10.1186/s41239-019-0171-0>
5. Williamson, B., & Eynon, R. (2020). *Historical threads, missing links, and future directions in AI in education*. Learning, Media and Technology, 45(3), 223–235.

🌐 **Web Resources**

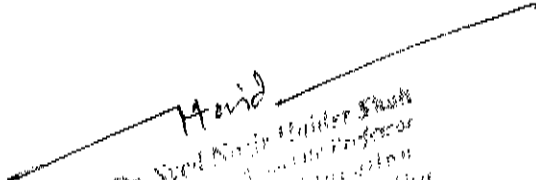
1. **UNESCO – AI in Education**
<https://www.unesco.org/en/artificial-intelligence/education>
 - Offers global policies, strategies, and publications on AI and education.
2. **OECD – Artificial Intelligence in Education**
<https://www.oecd.org/education/artificial-intelligence.htm>
 - Explores the implications of AI for educational policy and practice.
3. **EDUCAUSE – AI in Higher Ed**
<https://www.educause.edu/>
 - Search for white papers and case studies on AI tools in LMS platforms and higher education.
4. **World Economic Forum: Transforming Education with AI**
<https://www.weforum.org/agenda/2022/07/ai-transforming-education/>
 - Articles and insights into how AI is shaping the global learning landscape.
5. **The Brookings Institution – Artificial Intelligence and the Future of Teaching and Learning**
<https://www.brookings.edu/>
 - Research-based policy recommendations related to AI in schools.
6. **AI-powered EdTech Tools Directory**
<https://www.aiedtech.tools>
 - A curated database of tools like MagicSchool.ai, Eduaide.ai, Diffit, and others.

Haid

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Practical Courses

List of Practical Courses				
1.	EDUC-6216	Practice Teaching -- I	5(0-5)	<i>Nil</i>
2.	EDUC-6217	Practice Teaching -- II	6(0-6)	<i>Nil</i>
3.	EDUC-6218	Internship	3(0-3)	<i>Nil</i>
4.	EDUC-6219	Capstone Project	3(0-3)	<i>Nil</i>


 Dr. Syed Naqib Haider Shah
 Associate Professor
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Introduction

The Practicum in this semester is a 6 credit course. As this is a practical course, 1 credit requires additional hours of practice. It is recommended that Student Teachers spend approximately 6 weeks on the school placement in semester VII. Teacher will develop a plan for gradually increasing responsibility in the classroom, working with the Seminar Instructor, the College/University Supervisor (Seminar Instructors will supervise field experiences, but may also work with a team of supervisors) and the Cooperating Teacher.

Student teachers will observe teaching practices of teachers who will work as mentor for the prospective teachers. During teaching practice-I all the prospective teachers will observe classroom teaching of senior teachers, laboratory management and various events and processes happening in educational institutes. Trainee teachers also learn by observing classroom management, laboratory designs, school building and infrastructure, school environment, and lot of co-curricular activities taking place in the school.

This course is basically a supervised experience of working with Senior Teachers working in a real classroom setting. This course is set to develop observational and reflective skills. Prospective teachers are required to observe, think critically and then reflect on the events and situations. Students will be engaged in observing classroom practices, science laboratory practices, and environment of the school, canteens, corridors, playground and library to develop observational skills through reflective writing or journal writings. Each prospective teacher will be evaluated and supervised by senior or mentor teacher in that institution. Prospective teachers are required to do make observations of the events and processes in the organization. Besides this they will do interviews of the students and teachers to have understanding of teaching learning process with its opportunities and problems.

2. COURSE LEARNING OUTCOMES

After completion of the course, the prospective teachers will be able to:

1. Observe the classroom and laboratory practices efficiently
2. Record Observations and Write observational reports
3. Transcribe recorded observations
4. Critically think on the observed experiences
5. Write anecdotal record
6. Prepare observational checklist
7. Prepare and write field notes
8. Teach the class or adopt some strategies in guided situation
9. Follow mentors comments
10. To work with others in schools like students, teachers, mentors
11. Understand Documentation process of official work in Organization

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 University of Sargodha

Course Description

The Practicum consists of two important parts:

- a. A school placement in an elementary school;
 - b. A seminar that meets regularly.
- a. **School Placement:**
During the practicum, student students are expected to critically select and use appropriate materials, resources (including persons in the community) and technology, and to have experiences with classroom management and a variety of evaluation techniques (including authentic assessment). Collaboration with other Student Teachers and professionals in the school setting should be encouraged in order to develop team building skills and utilization of all resources to enhance children's learning.

b. **The Seminar:**

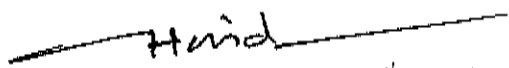
A weekly seminar will accompany the practicum to help student teachers link the content of the pre-service program content to practice. The seminar would provide an opportunity to clarify and revise their teaching goals and their beliefs about a wide range of educational issues. Although the seminar would be related to and build upon classroom observation and teaching experiences, it would focus on inducting student teachers into professional practice. The seminar will also provide a forum for student teachers to share and resolve problems or challenges they are experiencing during their practice.

Student teachers will be asked to complete several types of assignments. Most, but not all, of these assignments will be directly linked in some way to classroom experiences. For example:

- o Present an analysis of own or a peer's teaching
- o Conduct an observation focused on specific classroom practices or an individual child;
- o Try out a particular method and reflect on its success in achieving its purpose
- o An interview with of a teacher and a child.
- o Discuss about suitability of teaching and assessment tools during TP

This course consists of school visit for 6 weeks, where student teachers have to perform following tasks to meet objectives of this practicum course

- | | |
|---|------|
| I. Structured Classroom Observation in School visits | (20) |
| II. Field Notes | (20) |
| III. Observation of class work /homework note books | (20) |
| IV. Interviews with Students | (02) |
| V. Understanding Organizational structure and official correspondence | (01) |


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Department of Education
University of Borgobha

Assessment framework Criteria of Teaching Practice -1

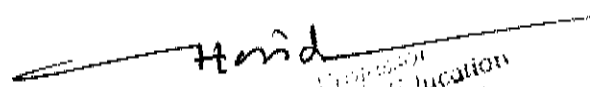
Activity	Max Marks	Attained Marks
Classroom Teaching learning process Observation	(30)	
Field Notes	(20)	
Observation of Homework Note-books	(20)	
Interviews with Students	(10)	
Description of Organizational structure & Communication	(10)	
Attendance	(10)	
Total	100	

Recommended Text

1. Northouse, P. G. (2021). *Leadership: Theory and Practice (9th ed.)*. Sage Publications.
2. Borich, G. D. (2020). *Effective teaching methods: Research-based practice (9th ed.)*. Pearson.
3. Killen, R. (2016). *Effective teaching strategies: Lessons from research and practice (7th ed.)*. Cengage Learning.
4. Kyriacou, C. (2018). *Essential teaching skills (5th ed.)*. Oxford University Press.
5. Glickman, C. D., Gordon, S. P., & Ross-Gordon, J. M. (2018). *Supervision and Instructional Leadership: A Developmental Approach (10th ed.)*. Pearson.
6. Evertson, C. M., & Emmer, E. T. (2016). *Classroom Management for Middle and High School Teachers (10th ed.)*. Pearson.
7. Fullan, M. (2014). *Leading in a Culture of Change (2nd ed.)*. Jossey-Bass.

Suggested Readings

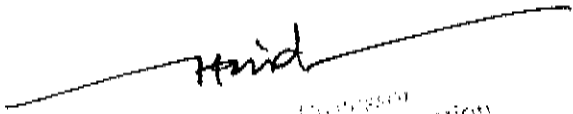
1. Cruickshank, D. R., Metcalf, K. K., & Jenkins, D. B. (2018). *The Act of Teaching (7th ed.)*. McGraw-Hill.
2. Bush, T. (2018). *Theories of Educational Leadership and Management (5th ed.)*. Sage Publications.
3. Stronge, J. II. (2018). *Qualities of Effective Teachers (3rd ed.)*. ASCD.
4. Richards, J. C., & Farrell, T. S. C. (2011). *Practice Teaching: A Reflective Approach*. Cambridge University Press.
5. Dimmock, C. (2012). *Leadership, Capacity Building, and School Improvement: Concepts, Themes, and Impact*. Routledge.
6. Popham, W. J. (2017). *Classroom Assessment: What Teachers Need to Know (8th ed.)*. Pearson.


 Associate Professor
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7. **Marzano, R. J. (2007).** *The Art and Science of Teaching: A Comprehensive Framework for Effective Instruction.* ASCD.
8. **Tomlinson, C. A. (2014).** *The Differentiated Classroom: Responding to the Needs of All Learners (2nd ed.).* ASCD.
9. Day, C., & Sammons, P. (2016). *Successful School Leadership.* Education Development Trust.
10. **Danielson, C. (2007).** *Enhancing Professional Practice: A Framework for Teaching.* ASCD.

🌐 *Web Resources*

1. **Edutopia – Teaching Strategies** - <https://www.edutopia.org/>
2. **The Teaching Channel** - <https://www.teachingchannel.com/>
3. **Education Week – Teacher Blogs** - <https://www.edweek.org/teaching-learning>
4. **National Board for Professional Teaching Standards** - <https://www.nbpts.org/>
5. **ASCD – Professional Learning** - <https://www.ascd.org/>
6. **The Chronicle of Higher Education – Teaching Resources** - <https://www.chronicle.com/>
7. **Institute for Educational Leadership (IEL)**- <https://iel.org/>
8. **The Association for Supervision and Curriculum Development (ASCD) – School Leadership**
<https://www.ascd.org/>
9. **International School Leadership Development Network (ISLDN)** - <https://www.icsei.net/isldn/>


Associate Professor
Department of Education
University of Sargodha

This course is compulsory for prospective teachers in graduate programs in Education. The development of new teachers is mandatory as they will be replaced by older ones. So novice teachers with best of teaching skills will be able to ensure quality education. Student teachers will observe teaching practices of teachers who will work as mentor for the prospective teachers. During teaching practice all the prospective teachers will observe classroom teaching of senior teachers, laboratory management and various events along with involvement in several academic activities in educational institutes.

This course is basically a supervised experience of working with Senior Teachers working in a real classroom setting. This course is set to develop observational and reflective skills. Prospective teachers are required to observe, think critically and then reflect on the events and situations.

Teaching Practice encompasses the application of effective teaching theories, techniques and skills by trainee teacher in a classroom/school setting. This course provides opportunities to trainee teacher for classroom teaching/school based experiences. Besides classroom teaching, this experience will also assist trainee teacher in learning classroom management skills.

2. COURSE LEARNING OUTCOMES

After completion of the course, the prospective teachers will be able to:

1. Observe and record the classroom and laboratory practices efficiently
2. Critically think on the observed experiences
3. Teach the class or adopt relevant strategies in guided situation
4. Plan a lesson
5. Use lesson plans effectively to deliver the content to students
6. Reflect on teaching practice and gain expertise in teaching.
7. Development relevant and cost effective leaning material and AV aid
8. Preparing, planning and Teaching class using teaching professional skills
9. To work with others in schools like students, teachers, mentors
10. Understand documentation process of official work in Organization

Assessment parameters

Each prospective teacher will be evaluated and supervised by senior/ mentor teacher in that institution and by University TP supervisor. Prospective teachers are required to do make observations of the events and processes in the organization, besides teaching classes assigned to them by mentor/TP supervisor. The course/s consists of school visit, where student teacher's performance will be evaluated on the following Criteria to meet objectives of this practicum course

Ramid
Associate Professor,
Department of Education
University of Sangodha

Model Lessons Evaluation Parameters

Activity	Max Marks	Attained Marks	
		Model Lesson 1	Model Lesson 2
Draft final lesson plan	5		
Development of assessment tools and AV-aids	5		
Classroom Management	5		
Content Clarity / Delivery	10		
Formative and Summative Assessment	5		
Classroom interactions/involvement	5		
	35		

Assessment framework / Criteria of Teaching Practice

Activity	Numbers	Max Marks	Attained Marks
Interviews / Study of organization	02	05	
Lesson Plans	(20+20)	30	
1st Model Lesson	01		
2nd Model Lesson	01	35	
Documentation process of official work in Organization	02	20	
Observation and Record of Inventory of School Resources			
Attendance		10	
Total		100	

Recommended Text

1. Northouse, P. G. (2021). *Leadership: Theory and Practice (9th ed.)*. Sage Publications.
2. Borich, G. D. (2020). *Effective teaching methods: Research-based practice (9th ed.)*. Pearson.
3. Killen, R. (2016). *Effective teaching strategies: Lessons from research and practice (7th ed.)*. Cengage Learning.
4. Kyriacou, C. (2018). *Essential teaching skills (5th ed.)*. Oxford University Press.

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 Associate Professor
 Department of Education
 University of Gargodha

5. Glickman, C. D., Gordon, S. P., & Ross-Gordon, J. M. (2018). *Supervision and Instructional Leadership: A Developmental Approach (10th ed.)*. Pearson.
6. Evertson, C. M., & Emmer, E. T. (2016). *Classroom Management for Middle and High School Teachers (10th ed.)*. Pearson.
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9. Day, C., & Sammons, P. (2016). *Successful School Leadership*. Education Development Trust.
10. Danielson, C. (2007). *Enhancing Professional Practice: A Framework for Teaching*. ASCD.

Web Resources

1. Edutopia – Teaching Strategies - <https://www.edutopia.org/>
2. The Teaching Channel - <https://www.teachingchannel.com/>
3. Education Week – Teacher Blogs - <https://www.edweek.org/teaching-learning>
4. National Board for Professional Teaching Standards - <https://www.nbpts.org/>
5. ASCD – Professional Learning - <https://www.ascd.org/>
6. The Chronicle of Higher Education – Teaching Resources - <https://www.chronicle.com/>
7. Institute for Educational Leadership (IEL)- <https://iel.org/>
8. The Association for Supervision and Curriculum Development (ASCD) – School Leadership <https://www.ascd.org/>
9. International School Leadership Development Network (ISLDN) - <https://www.iesei.net/isldn/>

Hand
 Assistant Professor
 Department of Education
 University of Sarajevo

EDUC-6218

Internship

3(0-3)

Course Description

Internships offer a unique and multifaceted learning experience. They bridge the gap between academic knowledge and practical application, allowing individuals to grow personally and professionally while benefiting organizations by providing a source of fresh talent and new perspectives. During Internship period at schools, all the prospective teachers will observe classroom teaching of senior teachers, laboratory management and various events and processes happening in educational institutes. Trainee teachers also learn by observing classroom management, laboratory designs, school building and infrastructure, school environment, and lot of co-curricular activities taking place in the school.

This course is basically a supervised experience of working with Senior Teachers working in a real classroom setting. This course is set to develop observational and reflective skills. Prospective teachers are required to observe, think critically and then reflect on the events and situations. Each prospective teacher will be evaluated and supervised by senior or mentor teacher in that institution. Prospective teachers are required to do make observations of the events and processes in the organization. Besides this they will do interviews of the students and teachers to have understanding of teaching learning process with its opportunities and problems.

Course Objectives

After completion of the course, the prospective teachers will be able to:

1. Observe the classroom and laboratory practices efficiently
2. Record Observations and Write observational reports
3. Transcribe recorded observations
4. Critically think on the observed experiences
5. Write anecdotal record
6. Prepare observational checklist
7. Prepare and write field notes
8. Understand Documentation process of official work in Organization

Course Outline

This course consists of school visit for 3 weeks, where student teachers have to perform following tasks to meet objectives of this practicum course

- VI. Structured Classroom Observation in School visits
- VII. Field Notes of school events and routines
- VIII. Observation and Record of Inventory of School Resources
- IX. Observe the record keeping process in schools
- X. Help teachers/ administration in Routine functioning
- XI. Developing relevant Learning Material for teaching classes

Recommended Texts

1. Nolan, J., & Hoover, L. A. (2010). *Teacher supervision and evaluation: Theory into practice* (3rd ed.). Wiley.
2. Cohen, L., Manion, L., & Morrison, K. (2018). *Research methods in education* (8th ed.). Routledge.

Haid
Associate Professor
Department of Education
University of Sargodha

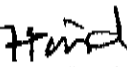
3. Farrell, T. S. C. (2019). *Reflective practice in language teaching: From research to practice*. Bloomsbury Academic.
4. Kyriacou, C. (2009). *Effective teaching in schools: Theory and practice* (3rd ed.). Nelson Thornes.
5. Zeichner, K., & Liston, D. P. (2014). *Reflective teaching: An introduction* (2nd ed.). Routledge.

Suggested Readings

1. Korthagen, F. A. J., Loughran, J., & Russell, T. (2006). *Developing fundamental principles for teacher education programs and practices*. *Teaching and Teacher Education*, 22(8), 1020–1041. <https://doi.org/10.1016/j.tate.2006.04.022>
2. McIntyre, D., & Hagger, H. (1996). *Mentoring in schools: Developing the profession of teaching*. Routledge.
3. Zeichner, K. M. (2010). Rethinking the connections between campus courses and field experiences in college- and university-based teacher education. *Journal of Teacher Education*, 61(1–2), 89–99. <https://doi.org/10.1177/0022487109347671>
4. Loughran, J. (2006). *Developing a pedagogy of teacher education: Understanding teaching and learning about teaching*. Routledge.
5. Cruickshank, D. R., Jenkins, D. B., & Metcalf, K. K. (2011). *The act of teaching* (6th ed.). McGraw-Hill Education.

Web Resources

1. National Council for Teacher Education (NCTE). (n.d.). *School internship framework*. <https://ncte.gov.in>
(*Standards and guidelines for school internships in teacher education.*)
2. UNESCO. (n.d.). *Teaching and learning resources*. <https://www.unesco.org/en/education>
(*International best practices and support tools for pre-service teachers.*)
3. Edutopia. (n.d.). *Classroom management and teaching strategies*. <https://www.edutopia.org>
(*Practical classroom tips and real-life examples for student teachers.*)
4. Teachers College, Columbia University. (n.d.). *Office of Teacher Education – Internship resources*. <https://www.tc.columbia.edu>
(*Resources for preparing and reflecting on field experiences.*)
5. Harvard Graduate School of Education. (n.d.). *Field experiences and teaching practice*. <https://www.gse.harvard.edu>
6. Stanford Center for Opportunity Policy in Education (SCOPE). (n.d.). *Teacher preparation and internship case studies*. <https://edpolicy.stanford.edu>


 Assistant Director of
 Department of Education
 University of Georgia (UG)

COURSE DESCRIPTION

Capstone or research projects in the field of teacher education provide teachers with opportunities for applied learning, professional growth, evidence-based practice, addressing educational challenges, collaboration, contribution to the field, and lifelong learning. These projects support the development of highly skilled and reflective educators who are equipped to make a positive impact on student learning and the field of education as a whole.

Student will complete a Research Project under the supervision of a teacher nominated by the Institute of Education. The theory-oriented approach to the final thesis in higher education is still dominant at the Master as well as Bachelor level. However, that at the Bachelor level a practice-oriented approach would be more appropriate. Bachelor's research work is claimed to be a bridge between education and the job market. The essential objective of the thesis is to contribute to theory building within a specific field of study through scientific research and thus it is predominantly theoretical in nature. The idea is that a qualified student teacher has to be capable of conducting scientific research on a modest scale. This approach aims to prepare students for the 'real world'. A research project is likely to be the longest and most difficult piece of work a student has ever completed. It can, however, also be a very rewarding piece of work since, unlike essays and other assignments. The student is able to pick a topic of special interest and work on their own initiative.

Steps:

1. Students are given choice to opt the research project
2. Students are allocated supervisors
3. Research topic for research project is discussed in research committee
4. Research committee also finalized the evaluators
5. After finalization of research project, students work under the supervisor
6. On completion research project is submitted after the approval of supervisor
7. After evaluation of research project form evaluator, viva is conducted.

A Capstone Project in the field of Teacher Education aims to bridge theory and practice by addressing real-world challenges or exploring emerging trends in education. These projects may focus on classroom-based issues, school improvement, educational policy, or innovations influenced by social and technological change.

Projects can take various forms such as a case study, action research, thesis, or term paper, and may explore themes including (but not limited to):

- I. Impact of Technology Integration on Student Learning
- II. Culturally Responsive Teaching Strategies
- III. Assessment Strategies for Differentiated Instruction
- IV. Teacher Collaboration and Professional Learning Communities (PLCs)
- V. Parent-Teacher Partnerships for Enhanced Student Achievement
- VI. Inquiry-Based Learning in Science Education
- VII. Challenges in implementing authentic assessment

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- VIII. Teacher readiness for technology integration
- IX. Supporting learners with special needs in mainstream schools
- X. Addressing student anxiety and exam stress
- XI. Strategies for promoting language skills
- XII. Social-Emotional Learning (SEL) Integration in Classroom Practices

Recommended Text:

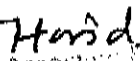
1. H Masanja, N. M. (2019). *Practical handbook to dissertation and thesis writing: An easy-to-use guide to dissertation or thesis writing*. USA: NMM Printers.
2. alyna M., Kornuta, R., & Germaine, W. (2019). *A concise guide to writing a thesis or dissertation: educational research and beyond*. UK: Routledge. <https://doi.org/10.4324/9780429056888>
3. Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.
4. Cohen, L., Manion, L., & Morrison, K. (2018). *Research methods in education* (8th ed.). Routledge.
5. McMillan, J. H. (2016). *Fundamentals of educational research* (7th ed.). Pearson.
6. Bell, J., & Waters, S. (2018). *Doing your research project: A guide for first-time researchers* (7th ed.). McGraw-Hill Education.

Suggested Readings:

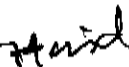
1. Bell, D. J., Foster, S. L., & John D. C. (2019). *Dissertations and theses from start to finish: psychology and related fields*. (3rd ed.). UK: Routledge.
2. Lodico, M. G., Spaulding, D. T., & Voegtle, K. H. (2010). *Methods in educational research: From theory to practice* (2nd ed.). Jossey-Bass.
3. Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2012). *How to design and evaluate research in education* (8th ed.). McGraw-Hill Education.
4. Gay, L. R., Mills, G. E., & Airasian, P. (2011). *Educational research: Competencies for analysis and applications* (10th ed.). Pearson.
5. Punch, K. F. (2014). *Introduction to social research: Quantitative and qualitative approaches* (3rd ed.). SAGE Publications.
6. Neuman, W. L. (2014). *Social research methods: Qualitative and quantitative approaches* (7th ed.). Pearson Education Limited.
7. Kumar, R. (2019). *Research methodology: A step-by-step guide for beginners* (5th ed.). SAGE Publications.

🌐 **Web Resources**

1. SAGE Research Methods. (n.d.). *SAGE Research Methods Online*. <https://methods.sagepub.com>
(Comprehensive collection of books, cases, videos, and datasets for research methods.)
2. ERIC. (n.d.). *Education Resources Information Center*. <https://eric.ed.gov>
(Free database of research articles, reports, and dissertations in education.)


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3. Purdue University. (n.d.). *Purdue Online Writing Lab (OWL) – Research and APA Style*. <https://owl.purdue.edu>
(Detailed guidance on research writing, citations, and academic writing.)
4. Google Scholar. (n.d.). *Google Scholar*. <https://scholar.google.com>
(Search engine for scholarly articles, theses, books, and conference papers.)
5. Harvard University. (n.d.). *Harvard Guide to Using Sources*.
<https://usingsources.fas.harvard.edu>
(Covers citation, source evaluation, plagiarism, and research integrity.)
6. University of Leicester. (n.d.). *Research skills and writing guides*.
<https://www2.le.ac.uk/offices/ld/resources/writing/research>
(University resources for planning and writing research projects.)
7. APA Style. (n.d.). *APA Style Official Site*. <https://apastyle.apa.org>
(Everything related to APA 7 citation style and formatting.)
8. ResearchGate. (n.d.). *ResearchGate*. <https://www.researchgate.net>
(Platform to access research papers, connect with researchers, and ask questions.)
9. Academia.edu. (n.d.). *Academia.edu*. <https://www.academia.edu>
(Repository of academic papers shared by scholars and researchers.)
10. Edutopia. (n.d.). *Edutopia – Research and innovation in education*.
<https://www.edutopia.org>
(Articles and case studies on educational research and classroom innovation.)


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EDUC-5201

Foundations of Education

3(3-0)

Course Description

The major focus will be on developing an understanding of the participants how different philosophical theories affect education. The course will also include historical development of education of the Pakistan. Emphasize will be given on analyzing various sociological, political, economic and ideological forces that influence the process of education in our culture context. This course will also be used to develop the ability in prospective teachers to interpret knowledge within its historical, philosophical, ideological, and social contexts, which will lead to produce critical perspectives on education both within, and outside of, schools. The course will explore general questions such as: What is the ultimate goal of education? How is education different from social indoctrination? Should education limit itself to imparting literacy, numeracy, and various kinds of skill and information, or should teachers also strive to influence the character and values of their students? In addition to these, various specific topics of current interest in the philosophy of education may be explored, such as: academic freedom; access to education; social and moral values, the ethics of education; religious values in individual and social life.

Course Objectives

- The students will be able to:
- Explain the important features of foundation of education
- Specify the role of educational thinkers in education
- Discuss the modes of education
- Discuss historical development of Pakistan
- Evaluate the issues and problems of education.

Course Outline**Unit 1: Introduction to Education**

- 1.1 Meaning and definitions of education
- 1.2 Aims and functions of education
- 1.3 Types of education: formal, non-formal, informal
- 1.4 Relationship between education and society

Unit 2: Ideological Foundations of Education

- 2.1 Islamic foundations
- 2.2 Islamic concept of peace
- 2.3 Other religions and Islam
- 2.4 Ideology and teachers

Unit 3: Philosophical Foundations of Education

- 3.1 Philosophy and education
- 3.2 Main philosophical thoughts
- 3.3 Idealism and realism
- 3.4 Existentialism and pragmatism
- 3.5 Pragmatism and reconstructionism

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Unit 4: Psychological Foundations of Education

- 4.1 Learning and maturation
- 4.2 Self-concept and individual differences
- 4.3 Academic aptitude
- 4.4 Instructional strategies and psychology
- 4.5 Role of teacher in child development

Unit 5: Socio-Economic Foundations of Education

- 5.1 Concept of society and culture
- 5.2 Social change and role of education
- 5.3 Social conditions and education
- 5.4 Economic conditions and education
- 5.5 Politics and education

Unit 6: Historical Foundations of Education in Pakistan

- 6.1 Pre-Pakistan period (712 A.D. onwards)
- 6.2 Period from 1947--1958
- 6.3 Period from 1959--1971
- 6.4 Period from 1972--1979
- 6.5 Period from 1980--1991
- 6.6 Period from 1992 to date

Unit 7: Aims of Education

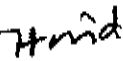
- 7.1 Aims, goals and objectives
- 7.2 Taxonomies of objectives
- 7.3 Aims and objectives of education in Pakistan

Unit 8: Problems and Issues in Education in Pakistan

- 8.1 Universalization of primary education
- 8.2 Literacy
- 8.3 Medium of instruction
- 8.4 Assessment system
- 8.5 Environmental education
- 8.6 Gender and education
- 8.7 Islamization of education
- 8.8 Special education
- 8.9 Skill-based education in globalized economy
- 8.10 Education and media

Recommended Texts

1. Canestrari, A. (2019). *Foundations of education*. New York: Sage Publications.
2. Bartlett, S., & Burton, D. (2020). *Introduction to education studies*. California: SAGE Publications Limited.
3. Eugene, F.P. (2016). *Critical issues in education: Anthology of reading*. New York: Sage Publications.
4. Murphy, D. (2015). *Foundations/Introduction to teaching*. New York: Sage Publications.
5. Ornstein, A. C., Levine, D. U., & Gutek, G. I. (2017). *Foundations of education* (13th ed.). Cengage Learning.
6. Sadker, D. M., & Zittleman, K. R. (2017). *Teachers, schools, and society: A brief introduction to education* (4th ed.). McGraw-Hill Education.


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Suggested Readings

1. Sadovnik, A. R., Cookson Jr, P. W., Semel, S. F., & Coughlan, R. W. (2017). *Exploring education: An introduction to the foundations of education*. New York: Routledge.
2. Ornstein, A. C., Levine, D. U., Gutek, G., & Vocke, D. E. (2016). *Foundations of education*. Nashville: Nelson Education.
3. Ozmon, H., & Craver, S. M. (2011). *Philosophical foundations of education* (9th ed.). Pearson.
4. Gutek, G. L. (2011). *Historical and philosophical foundations of education: A biographical introduction* (5th ed.). Pearson Education.
5. Schiro, M. S. (2012). *Curriculum theory: Conflicting visions and enduring concerns* (2nd ed.). SAGE Publications.
6. Brubacher, J. S. (1969). *Modern philosophies of education*. McGraw-Hill.
7. Noddings, N. (2012). *Philosophy of education* (3rd ed.). Routledge.
8. Parkay, F. W., & Stanford, B. H. (2019). *Becoming a teacher* (11th ed.). Pearson.

🌐 Web Resources

1. UNESCO. (n.d.). *Education transforms lives*. <https://www.unesco.org/en/education>
2. Global Partnership for Education. (n.d.). *What we do*. <https://www.globalpartnership.org>
3. World Bank. (n.d.). *Education overview*. <https://www.worldbank.org/en/topic/education>
4. ERIC (Education Resources Information Center). (n.d.). *Foundations of education resources*. <https://eric.ed.gov/>
5. OECD. (n.d.). *Education at a glance*. <https://www.oecd.org/education/>
6. Khan Academy. (n.d.). *Philosophy and history of education*. <https://www.khanacademy.org>
7. National Center for Education Statistics (NCES). (n.d.). *Publications and data tools*. <https://nces.ed.gov>
8. Stanford Encyclopedia of Philosophy. (n.d.). *Education and philosophy*. <https://plato.stanford.edu/>
9. International Bureau of Education (IBE-UNESCO). (n.d.). *Educational practices series*. <https://www.ibe.unesco.org/>
10. Harvard Graduate School of Education. (n.d.). *Insights on education and learning*. <https://www.gse.harvard.edu/>

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Course Description

The purpose of this course is to develop learner's insight. Its unique approach helps student teachers to understand different psychological concepts by encouraging them to examine their own learning and then showing them how to apply these concepts as teachers. This course concentrates on core concepts and principles. It gives readers an in-depth understanding of the central ideas of educational psychology. The main purpose of the course is to make students aware of how to bridge the gap between theory and practice. In other words, how they can use various concepts of educational psychology to improve their learning and teaching skills. The student teachers will be introduced with major theories of intelligence, personality, motivation, memory, thinking and instruction. They will also be trained in how these theories can be applied in the classroom teaching. Understanding the psychological basis of these theories will help them to manage classroom in a way that promotes learning and minimizes disruptions. It provides the study of learners and learning contexts both within and beyond traditional classrooms and evaluates ways in which factors such as age, culture, gender, and physical and social environments influence human learning.

Course Objectives:

By the end of the course students should be able to:

1. Describe in detail the multidisciplinary nature of educational psychology
2. Familiarize students with basic theories derived from various discipline which are related to education
3. Develop critical thinking about and appreciation of education psychology as multidisciplinary subject
4. Familiarize with the concept of test development

Course Outline

Unit 1: Introduction to Psychology

- 1.1 Nature and scope of educational psychology
- 1.2 Schools of thought: Structuralism, Functionalism, Behaviorism
- 1.3 Methods of study in educational psychology
- 1.4 Role of educational psychology in the classroom

Unit 2: Fundamentals of Human Development

- 2.1 General nature of growth and development
- 2.2 Stages of development (Piaget, Erikson)
- 2.3 Physical, emotional, and social development
- 2.4 Factors influencing child development

Unit 3: Learning Theories

- 3.1 Learning and the learning process
- 3.2 Classical and operant conditioning
- 3.3 Cognitive theories (Piaget, Bruner)
- 3.4 Constructivism (Vygotsky)
- 3.5 Social learning theory (Bandura)

Unit 4: Motivation and Learning

- 4.1 Theories of motivation (Maslow, Herzberg)

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- 4.2 Intrinsic vs. extrinsic motivation
- 4.3 Role of teacher in motivating students
- 4.4 Classroom strategies

Unit 5: Information Processing

- 5.1 Memory and its components (sensory memory, working memory, long-term memory)
- 5.2 Stages of information processing
- 5.3 Types of memory: sensory, short-term, long-term
- 5.4 What is forgetting? Methods to improve memory

Unit 6: Intelligence

- 6.1 Concept of intelligence
- 6.2 Theories of intelligence
- 6.3 Individual differences
- 6.4 Measurement of intelligence (IQ tests)
- 6.5 Multiple intelligences (Gardner)

Unit 7: Personality and Adjustment

- 7.1 Major theories (Freud, Jung, Allport)
- 7.2 Factors affecting personality
- 7.3 Mental health and hygiene
- 7.4 Classroom adjustment problems

Unit 8: Measurement and Evaluation in Educational Psychology

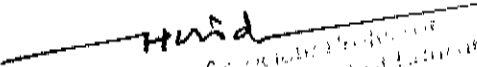
- 8.1 Tests and characteristics of a good test (validity, reliability, usability, objectivity)
- 8.2 Characteristics of tests
- 8.3 Types of tests: achievement, aptitude, intelligence, attitude, personality
- 8.4 Standardized vs. teacher-made tests
- 8.5 Ethical considerations in assessment and reporting

Recommended Texts

1. Ormrod, Jeane, (2019) *Educational psychology: Developing learner*. Upper Saddle River, NJ: Pearson.
2. Santrock, J. W. (2018). *Educational psychology*. Boston: McGraw –Hill.
3. Woolfolk, A. (2022). *Educational Psychology* (14th ed.). Pearson.
4. Santrock, J. W. (2020). *Educational Psychology* (7th ed.). McGraw-Hill.
5. Ormrod, J. E. (2020). *Educational Psychology: Developing Learners* (10th ed.). Pearson.

Suggested Readings

1. Iqbal, M. Z., & Shahid, S. M. (2016). *Educational psychology & guidance*. Islamabad: AIOU.
2. Woolfolk, A. (2015). *Educational psychology, sixth canadian edition*. Upper Saddle River, NJ: Pearson Education.


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3. Rashid, M. (comp.) (2016). *Allied material of educational guidance and counseling*. Islamabad: AIOU.
4. Slavin, R. E. (2018). *Educational Psychology: Theory and Practice* (12th ed.). Pearson.
5. Eggen, P., & Kauchak, D. (2016). *Educational Psychology: Windows on Classrooms* (10th ed.). Pearson.
6. Schunk, D. H. (2016). *Learning Theories: An Educational Perspective* (7th ed.). Pearson.

🌐 Web Resources

1. **American Psychological Association (APA) – Educational Psychology** - <https://www.apa.org/ed>
2. **National Association of School Psychologists (NASP)** - <https://www.nasponline.org/>
3. **Association for Psychological Science (APS) – Learning & Memory** - <https://www.psychologicalscience.org/>
4. **International Journal of Educational Psychology** - <https://journals.sagepub.com/home/edp>
5. **Harvard Center on the Developing Child** - <https://developingchild.harvard.edu/>
6. **Child Mind Institute – Learning & Development Resources** - <https://childmind.org/>
7. **The Learning Scientists – Cognitive Science for Education** - <https://www.learningscientists.org/>
8. **Edutopia – Educational Psychology & Learning Science** - <https://www.edutopia.org/>
9. **Mindset Works – Growth Mindset Resources** - <https://www.mindsetworks.com/>
10. **National Institute of Child Health and Human Development (NICHD)** - <https://www.nichd.nih.gov/>

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Course Description

Professionalism has become a subject of interest to academics, prospective professional groups and the common man. Professionalism in teaching is commonly discussed on ideological, sociological and educational bases. The fundamental purpose of the course is to make students fully comprehend professional code of conduct and enhance their ability to practice professional standards effectively inside and outside the classroom. This course describes changing role of teachers in 21st century scenario and how teachers can utilize technology with pedagogy. In addition, this course will provide a chance to understand the responsibility of a teacher beyond the classroom teaching specifically, in making the nexus between the new technology era and cultural & societal ethics. Moreover, the prospect teachers will be enabled to identify the gap between the theory and practice of professionalism in teaching by studying and analyzing the various professional and ethical issues in teaching. The understanding of the future teachers for their moral applications and implications will be inculcated to make them well prepared for the teaching profession.

Learning outcomes:

After successful completion of the course, the students will be able to:

- i. Explain the term professionalization and its process and highlight
- ii. Discuss teaching as profession.
- iii. Demonstrate professional dispositions as teacher.
- iv. Comprehend theoretical base of professionalism in teaching.
- v. Identify and practice attributes of professional teacher.
- vi. Discuss teaching profession and globalization.
- vii. Explain connection of society and culture with teaching profession.
- viii. Highlight ethical issues in teaching profession.

Course Outline

Unit 1: Introduction to Profession and Concept of Teaching

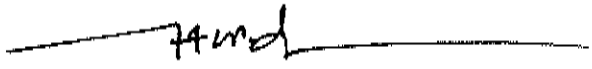
- 1.1 Concept of profession and professionals
- 1.2 Characteristics of a profession
- 1.3 Professionalism
- 1.4 Teaching as a profession
- 1.5 Assumptions about teaching
- 1.6 Characteristics of effective teaching

Unit 2: Professionalization Process and Professionalism

- 2.1 Concept and process of professionalization
- 2.2 Professions, professionalism, and professional ethics
- 2.3 Professionalization of the teaching profession
- 2.4 Professional responsibility
- 2.5 Characteristics of professionalism
- 2.6 Importance of values in teaching
- 2.7 Three tips for educating values while teaching

Unit 3: Professionalism in Teaching - Theory to Practice

- 3.1 Code of professional conduct and values
- 3.2 Commitment to professional renewal
- 3.3 Professional dispositions
- 3.4 Islamic principles of professionalism
- 3.5 Problems faced by beginning teachers


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Unit 4: Attributes of a Teacher

- 4.1 Professional teacher
- 4.2 Reflective practitioner
- 4.3 Inquiring teacher
- 4.4 Committed teacher
- 4.5 Principles of commitment
- 4.6 Moral agent
- 4.7 Role model

Unit 5: Changing Role of the Teacher – Beyond the Classroom

- 5.1 Teacher's professional identity
- 5.2 Career development
- 5.3 Writing reflective journals
- 5.4 National Professional Standards for Teachers in Pakistan
- 5.5 Digital technologies and pedagogy

Unit 6: Ethics, Education, and the Teacher

- 6.1 Education as a human right in international context
- 6.2 Right to education in Pakistan
- 6.3 Schooling
- 6.4 Teaching and teachers as role models

Unit 7: Teaching Profession and Globalization

- 7.1 Teacher professionalism and globalization
- 7.2 Teaching profession and open and distance learning (ODL)
- 7.3 New millennium: pressures and possibilities

Unit 8: Society, Culture, and the Teaching Profession

- 8.1 Social context
- 8.2 Cultural context
- 8.3 Political context
- 8.4 Interplay with value education and the teaching profession

Unit 9: Ethical Issues in the Teaching Profession

- 9.1 Definitions of ethics
- 9.2 Teaching
- 9.3 General principles of ethics in teaching
- 9.4 Ethical issues pertaining to the role of the teacher
- 9.5 Ethical issues pertaining to education
- 9.6 Ethical issues pertaining to schooling

Recommended Texts

1. Corrigan, D., Dillon, J., & Gunstone, R. (2011) *The Professional knowledge base of science teaching*. Springer, Dordrecht
2. AIOU. (2018). *Professionalism in teaching*. Allied Material, Department of Early Childhood Education and Elementary Teacher Education. Islamabad: AIOU.
3. Cruickshank, D. R., Jenkins, D. B., & Metcalf, K. K. (2015). *The act of teaching* (6th ed.). McGraw-Hill Education.

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4. Ryan, K., & Cooper, J. M. (2018). *Those who can, teach* (14th ed.). Cengage Learning.
5. Pollard, A. (2014). *Reflective teaching in schools*. Bloomsbury Publishing.
6. Murray, F. B. (2006). *The teacher educator's handbook: Building a knowledge base for the preparation of teachers*. Jossey-Bass.
7. Darling-Hammond, L., & Bransford, J. (Eds.). (2005). *Preparing teachers for a changing world: What teachers should learn and be able to do*. Jossey-Bass.

Suggested Readings

1. H. Timperley, A. Wilson, H. Barrar & I. Fung (2007). *Teacher Professional Learning and Development: Best Evidence Synthesis Iteration*. Wellington, New Zealand: Ministry of Education. Retrieved from <http://educationcounts.edcentre.govt.nz/goto/BES>
2. UNESCO (2015). *The Right to Education and the Teaching Profession*. Retrieved from <http://unesdoc.unesco.org/images/0023/002348/234820E.pdf>
3. Day, C., & Sachs, J. (2004). *International handbook on the continuing professional development of teachers*. Open University Press.
4. Hansen, D. T. (2001). *Exploring the moral heart of teaching: Toward a teacher's creed*. Teachers College Press.
5. Ornstein, A. C., Levine, D. U., & Gutek, G. L. (2017). *Foundations of education* (13th ed.). Cengage Learning.
6. Ingersoll, R. M., Merrill, E., & May, H. (2014). *What the teaching profession needs: A bold agenda to strengthen the profession and its accountability*. Consortium for Policy Research in Education.
7. Shulman, L. S. (2004). *The wisdom of practice: Essays on teaching, learning, and learning to teach*. Jossey-Bass.

Web Resources

1. UNESCO. (n.d.). *Teaching and learning*. <https://www.unesco.org/en/education/teachers>
2. National Education Association (NEA). (n.d.). *The teaching profession*. <https://www.nea.org/professional-excellence>
3. Teacher Education through School-Based Support in India (TESS-India). (n.d.). *Open University resources*. <https://www.open.edu/openlearncreate/course/index.php?categoryid=172>
4. Edutopia. (n.d.). *Teacher development*. <https://www.edutopia.org/teacher-development>
5. Teaching Tolerance (Learning for Justice). (n.d.). *Classroom resources for professional educators*. <https://www.learningforjustice.org>
6. Association for Supervision and Curriculum Development (ASCD). (n.d.). *Professional learning and growth*. <https://www.ascd.org>
7. American Association of Colleges for Teacher Education (AACTE). (n.d.). *Resources and advocacy for the teaching profession*. <https://aacte.org>
8. Global Partnership for Education. (n.d.). *Teachers and teaching*. <https://www.globalpartnership.org/topics/teachers>
9. Education International. (n.d.). *Supporting the teaching profession worldwide*. <https://www.ei-ie.org>
10. TeachThought. (n.d.). *Teaching strategies and teacher growth*. <https://www.teachthought.com>

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 ASSOCIATION OF PROFESSIONAL
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 HINDUSTAN COLLEGE OF EDUCATION

EDUC-5209

School Management

3(3-0)

Course Description:

Formal education is an organized one and trained teachers to teach in the educational institutions. Further, buildings and many facilities have to be put up in order to have educational institutions function effectively. The students taught in schools, teacher training colleges and universities have to meet the needs of society. Educational planning is 'the process of setting out in advance, strategies, policies, procedures, programs, and standards through which an educational objective (or set of objectives) can be achieved. Educational plans are designed to avoid imbalances and enormous waste and replenish the steadily aggravated shortage of teachers. This course introduces some theoretical perspectives on educational planning and management and examines several key concepts and principles. We believe that a deeper understanding of the nature of educational planning and management will enable the student teachers to improve their practices as a school manager. Produce educational planners, managers and supervisors who are well informed of the national and regional constitutions, thereby assuming leadership positions and responsibilities; they would be able to generate, manage and utilize educational resources effectively and efficiently. They would also be able to initiate educational changes, innovations, and developments by addressing local and regional needs and realities.

Course Objectives:

By the end of the course, prospective teachers will be able to:

1. Explain the concept of school organization, management and discipline and factors affecting school discipline.
2. Organized school activities (curricular and co-curricular) affectively and manage available resources (material, human and time) efficiently.
3. Differentiate between the concept of leadership and management utilizing the major indicator of effective leadership management.
4. Maintain school record and activities according to the school mandate.

Course Outline

Unit 1: Introduction

- 1.1 Meaning of school administration
- 1.2 Difference between administration, supervision, and management
- 1.3 Educational administration and school administration
- 1.4 Nature, aims, objectives, and principles of school administration

Unit 2: Supervision and Inspection

- 2.1 Concept of supervision
- 2.2 Need, importance, and aims of supervision and inspection
- 2.3 Types of supervision
- 2.4 New trends in supervision
- 2.5 Modern vs. old concept of inspection
- 2.6 Techniques of supervision
- 2.7 Factors affecting educational supervision

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Unit 3: Nature and Scope of Educational Management

- 3.1 Concept of management
- 3.2 Historical background of management
- 3.3 Evolution of management thought in education
- 3.4 Need for management

Unit 4: Administrative Functions in Education

- 4.1 The concept of POSDCoRB
- 4.2 Planning: need, process, and types of planning
- 4.3 Organizing: structure, components, classical and modern views
- 4.4 Staffing
- 4.5 Directing
- 4.6 Coordinating: control process, dysfunctional effects, contingency factors
- 4.7 Reporting
- 4.8 Budgeting
- 4.9 Leading
- 4.10 Controlling
- 4.11 Motivating
- 4.12 Decision-making: process and types

Unit 5: The School Discipline

- 5.1 Definition, purpose, and types of school discipline
- 5.2 Three stages of discipline
- 5.3 Old and new concepts of discipline
- 5.4 How to achieve good discipline
- 5.5 Factors affecting school discipline
- 5.6 Characteristics of modern discipline

Unit 6: Organizational Structure of the Education System

- 6.1 Organization of education at the federal level
- 6.2 Organization of education at the provincial level
- 6.3 Organization of education at the district level
- 6.4 Administration of autonomous bodies in education (universities and boards)
- 6.5 Role of the private sector in education

Unit 7: Characteristics of Good Head Teachers and Teachers

- 7.1 Place and importance of head teachers and teachers
- 7.2 Qualities of head teachers and teachers
- 7.3 Duties of head teachers and teachers
- 7.4 Problems of head teachers and teachers
- 7.5 Workload of teachers
- 7.6 Common weaknesses of teachers

Unit 8: Key Issues in Educational Management

- 8.1 Challenges in school administration
- 8.2 Pre-service and in-service training
- 8.3 Punishment and reward system
- 8.4 Management of school timetable
- 8.5 Management of school library
- 8.6 Democracy and administration

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- 8.7 Efficiency and effectiveness
- 8.8 Productivity vs. human relations
- 8.9 Training vs. development

Recommended Texts

1. Lunenburg, F. C., & Ornstein, A. C. (2020). *Educational Administration: Concepts and Practices* (7th ed.). Cengage Learning.
2. Bush, T., & Coleman, M. (Eds.). (2015). *Leadership and strategic management in education* (4th ed.). SAGE Publications.
3. Fullan, M. (2014). *Leading in a culture of change*. Jossey-Bass.
4. Hallinger, P., & Murphy, J. F. (2013). *Routledge international handbook of educational leadership and administration*. Routledge.
5. Owens, R. G., & Valesky, T. C. (2015). *Organizational behavior in education: Adaptive leadership and school reform* (11th ed.). Pearson.
6. Schein, E. H. (2010). *Organizational culture and leadership* (4th ed.). Jossey-Bass.

Suggested Readings

1. Bolman, L. G., & Deal, T. E. (2017). *Reframing organizations: Artistry, choice, and leadership* (6th ed.). Jossey-Bass.
2. Hoy, W. K., & Miskel, C. G. (2018). *Educational administration: Theory, research, and practice* (10th ed.). McGraw-Hill Education.
3. Leithwood, K., Louis, K. S., Anderson, S., & Wahlstrom, K. (Eds.). (2019). *Learning from leadership: Investigating the links to improved student learning*. The Wallace Foundation.
4. Sergiovanni, T. J. (2018). *The principalship: A reflective practice perspective* (8th ed.). Pearson.
5. Spillane, J. P., Diamond, J. B., & Burch, P. (Eds.). (2018). *Distributed leadership in practice*. Teachers College Press.
6. Fullan, M. (2020). *Leading in a Culture of Change*. Jossey-Bass.
7. UNESCO. (2016). *Rethinking Education: Towards a Global Common Good?* UNESCO.
8. Hoy, W. K., & Miskel, C. G. (2012). *Educational Administration: Theory, Research, and Practice*. McGraw-Hill.
9. Glatter, R. (2019). *Educational Leadership and Management: Theory, Policy, and Practice*.
10. Glickman, C. D., Gordon, S. P., & Ross-Gordon, J. M. (2017). *Supervision and Instructional Leadership: A Developmental Approach*.
11. Beare, H., Caldwell, B. J., & Millikan, R. H. (2018). *Creating an Excellent School: Some New Management Techniques*.

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🌐 *Web Resources*

1. UNESCO – Educational Planning and Management - <https://en.unesco.org/themes/planning-management>
2. OECD – Education Policies and Planning - <https://www.oecd.org/education/>
3. World Bank – Education Planning and Management - <https://www.worldbank.org/en/topic/education>
4. Educational Resources Information Center (ERIC) - <https://eric.ed.gov/>
5. International Institute for Educational Planning (IIEP-UNESCO) - <https://www.iiep.unesco.org/>
6. National Center for Education Statistics (NCES) - <https://nces.ed.gov/>
7. Harvard University – Education Policy and Planning - <https://www.gse.harvard.edu/>
8. Edutopia – School Leadership and Management - <https://www.edutopia.org/>
9. Brookings Institution – Education Policy - <https://www.brookings.edu/topic/education/>
10. MIT OpenCourseWare – Educational Planning and Policy - <https://ocw.mit.edu/>

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Course Description

This course is intended to orient the prospective teachers about the principle, process and procedure of curriculum design and development. The participants will be informed about various foundations on which the curriculum is based, defining and delineating the objectives, selection of content, its scope and outcomes, teaching strategies, curriculum evaluation, design of instructional materials. This course will also include various factors that affect the process of curriculum development and implementation. Students will be provided exposure to various curriculum development models and theories to enhance their understanding. The career and technical and technical curriculum focus not only on the educational process but also on the tangible results of that process. This course focuses on curriculum within the context of career and technical education. This course also focuses primarily on content and areas related to it. It encompasses the macro or broadly-based activities that impact on a wide range of programs, courses, and student experiences. This course will be delivered within the context of existing curriculum and the bodies and procedures adopted for curriculum development process in Pakistan

Course Objectives

At the end of the course, the students will be able to:

1. Elaborate the concept of curriculum
2. Explain the Process of curriculum development in Pakistan
3. Examine the components of curriculum development
4. Differentiate between different types of curriculum
5. Write curriculum objectives in behavioral terms
6. State the critical issues, problems and trends in curriculum

Course Outline

Unit 1: Introduction to Curriculum

- 1.1 Definition of curriculum
- 1.2 Types of curriculum
- 1.3 Elements of curriculum
- 1.4 Functions of curriculum
- 1.5 Learning experiences and assessment of students' learning

Unit 2: Foundations of Curriculum

- 2.1 Philosophical foundations
- 2.2 Psychological foundations
- 2.3 Sociological foundations
- 2.4 Political and economic foundations

Unit 3: Curriculum Aims, Goals, and Objectives

- 3.1 Definitions and distinctions among aims, goals, and objectives
- 3.2 Sources and determinants of curriculum aims
- 3.3 Taxonomies of educational objectives:
 - a) Cognitive domain
 - b) Affective domain
 - c) Psychomotor domain
 - d) SOLO taxonomy of educational objectives
- 3.4 Formulation of educational objectives

Unit 4: Models of Curriculum

- 4.1 Tyler model
- 4.2 Taba's model
- 4.3 Wheeler model
- 4.4 Dynamic model
- 4.5 Skilbeck model

Unit 5: Designs of Curriculum

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 Department of Curriculum & Instruction

- 5.1 Definition of curriculum design
- 5.2 Difference between curriculum design and curriculum development
- 5.3 Major types of curriculum design:
 - a) Subject-centered design
 - b) Learner-centered design
 - c) Problem-centered design
 - d) Integrated/interdisciplinary design
- 5.4 Criteria for selecting an appropriate design

Unit 6: Process of Curriculum Development in Pakistan

- 6.1 Role of Ministry of Federal Education and Professional Training
- 6.2 National Curriculum Council (NCC) and provincial textbook boards
- 6.3 Curriculum development at elementary and secondary levels
- 6.4 Involvement of teachers, subject experts, and civil society
- 6.5 Curriculum development process in Pakistan

Unit 7: Curriculum Change

- 7.1 Definition and significance of curriculum change
- 7.2 Difference between curriculum change, curriculum reform, and curriculum innovation
- 7.3 Need and rationale for curriculum change
- 7.4 Process of curriculum change
- 7.5 Factors affecting curriculum change

Recommended Texts

1. Nicholls, A., & Nicholls, S. H. (2018). *Developing a curriculum: A practical guide*. New York: Routledge
2. Oliva, P.F. (2015). *Developing the curriculum. (4th ed.)*. New York: Longman.
3. Ornstein, A. C., & Hunkins, F. P. (2018). *Curriculum: Foundations, Principles, and Issues* (7th ed.). Pearson.
4. Pinar, W. F. (2019). *What is Curriculum Theory?* (3rd ed.). Routledge.
5. Wiles, J., & Bondi, J. (2014). *Curriculum Development: A Guide to Practice* (9th ed.). Pearson.

Suggested Readings

1. Parkay, F. W., Anctil, E. J., & Hass, G. (2014). *Curriculum leadership: Readings for developing quality educational programs*. Upper Saddle River, NJ: Pearson Prentice Hall.
2. Kelley A.V (2014). *The curriculum: theory and practice*. London: Paul Chapman.
3. Tyler, R. W. (1949). *Basic Principles of Curriculum and Instruction*. University of Chicago Press.
4. Marsh, C. J. (2019). *Key Concepts for Understanding Curriculum* (5th ed.). Routledge.
5. Kelly, A. V. (2009). *The Curriculum: Theory and Practice*. SAGE Publications.

Web Resources

1. International Bureau of Education (IBE-UNESCO) - <https://www.ibe.unesco.org/>
2. Curriculum Studies at Stanford University - <https://ed.stanford.edu/>
3. Association for Supervision and Curriculum Development (ASCD) -

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- <https://www.ascd.org/>
4. National Association for the Education of Young Children (NAEYC) - <https://www.naeyc.org/>
 5. OECD Education and Curriculum Policy - <https://www.oecd.org/education/>
 6. Harvard Graduate School of Education -- Curriculum Research - <https://www.gse.harvard.edu/>
 7. Open Educational Resources (OER) on Curriculum Development - <https://www.oercommons.org/>
 8. UNESCO Global Education Monitoring Report - <https://en.unesco.org/gem-report/>
 9. Edutopia -- Curriculum and Instruction - <https://www.edutopia.org/>
 10. National Institute for Curriculum Development - <https://www.nie.edu.sg/>

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