COURSE OUTLINE BRIEFS

DEPARTMENT OF ECONOMICS

SARGODHA UNIVERSITY
Pathway to Progress

FACULTY OF SOCIAL SCIENCES

OVERVIEW

Nation's economic interests, fiscal management, productivity led by innovation, complexities of trade relations and sustainable development as a cure for deprivation and exclusion are some of the leading issues needed to be deciphered for the pursuance of well-being in the wake of scarce resources and incentives.

Our Department – having six PhDs and successor to the Post-Graduate Department of Economics established in 1985 in the erstwhile Government College Sargodha – is working to contemplate over such thoughts with innovative inquiry having foothold in empirical data and sophisticated methodologies. We believe to unleash an intellect which implants dynamic optimization for government, business and people. We steer our departmental research to create new knowledge for an ever-changing world whose linchpin is Economics being social science.

Our faculty is an all-inclusive one having research proficiency which equip scholars to unfold the transitional process from resource-driven economy to innovation-driven one after crossing over the intermediate efficiency-driven stage. The Department is aiming to substantially contribute towards the realization of Sustainable Development Goals (SDGs) with whatever possible supportive tools of policy making like offering of research-based programs, conducting knowledge-sharing activities i.e. training/dissemination workshops and conferences, collaborating with local stakeholders, donor agencies, and foreign universities for evidence-based research.

Academic Programs Offered

1. BS Economics
2. MSc Economics
3. MPhil Economics
4. PhD Economics

BS Economics

Eligibility: At least 45% marks in intermediate or equivalent.
Duration: 04 Year Program (08 Semesters)
Degree Requirements: 130 Credit Hours

Semester-1

Course Code	Course Title	Credit Hours
URCE-5101	Grammar	3(3+0)
ECON-5101	Principles of Micro Economics	3(3+0)
URCI-5105	Islamic Studies (Compulsory)	2(2+0)
URCM-5101	Introduction to Mathematics	3(3+0)
ICTC-5201	Introduction to Information & Communication Technologies	3(2+1)
BUSB-6124	Entrepreneurship and SME Management	3(3+0)

Semester-2

URCE-5102	Language Comprehension & presentation Skills	3(3+0)
URCP-5106	Pakistan Studies	2(2+0)
ECON-5102	Principles of Macro Economics	3(3+0)
MATH-6161	Calculus – I	3(3+0)
ECON 5103	Principles of accounting	3(3+0)
NTR -5101	Introduction to International Relations	3(3+0)

Semester-3

URCE-5103	Academic Writing	3(3+0)
ECON-5104	Intermediate Micro Economics	3(3+0)
ECON-5105	Development Economics	3(3+0)
STAT-5122	Statistics for Economics-I	3(3+0)
ECON-5106	Principles of Marketing	3(3+0)
ECON-5107	Financial Management	3(3+0)

Semester-4

URCE-5104	Introduction to English Literature	3(3+0)
ECON-5108	Intermediate Macro Economics	3(3+0)
STAT-5123	Statistics for Economics-II	3(3+0)
ECON-5109	Agriculture Economics	3(3+0)

ECON-5110	Political Economy	3(3+0)
ECON-5111	Managerial Economics	3(3+0)

Semester-5

ECON-6112	Micro Economics	3(3+0)
ECON-6113	Econometrics I	3(3+0)
ECON-6114	Mathematical Economics I	3(3+0)
ECON-6115	Environmental economics	3(3+0)
ECON-6116	Energy Economics	3(3+0)
ECON-6117	Poverty and Income Distribution	3(3+0)

Semester-6

ECON-6118	Macro Economics	3(3+0)
ECON-6119	Econometrics II	3(3+0)
ECON-6120	Mathematical Economics II	3(3+0)
ECON-6121	General equilibrium and Welfare Economics	3(3+0)
ECON-6122	Monetary Economics	3(3+0)

Semester-7

ECON-6123	International Trade Theory	3(3+0)
ECON-6124	Research Methodology	3(3+0)
ECON-6125	Public Finance	3(3+0)
ECON-6126	History of Economics Thoughts	3(3+0)
ECON-6127	Project Appraisal and Investment Analysis	3(3+0)

Semester-8

ECON-6128	Applied Economics	3(3+0)
ECON-6129	Islamic Economics	3(3+0)
ECON-6130	Issues of Pakistan Economy	3(3+0)
ECON-6131	Economics of Education	3(3+0)

MSc Economics

Eligibility: At least 45% marks in BA with Economics compulsory of 200 marks or Equivalent.
Duration: 02 Year Program (04 Semesters)
Degree Requirements: 66 Credit Hours

Semester-1

ECON-6201	Micro Economics I	3(3+0)
ECON-6202	Macro Economics I	3(3+0)
ECON-6203	Mathematical Economics I	3(3+0)
ECON-6204	Islamic Economics	3(3+0)
ECON-6205	Public Sector Economics	3(3+0)

Semester-2

ECON-6206	Micro Economics II	3(3+0)
ECON-6207	Macro Economics II	3(3+0)
ECON-6208	Statistics for Economists	3(3+0)
ECON-6209	Managerial Economics	3(3+0)
ECON-6210	Development Economics, Theory and Policy	3(3+0)
ECON-6211	Political Economy and Global Order	3(3+0)

Semester-3

ECON-6212	Econometrics I	3(3+0)
ECON-6213	Mathematical Economics II	3(3+0)
ECON-6214	Financial Management for Business Firm	3(3+0)
ECON-6215	Agriculture Economics	3(3+0)
ECON-6216	Monetary Theory and Policy	3(3+0)

Semester-4

ECON-6217	Econometrics II	3(3+0)
ECON-6218	Research Methodology	3(3+0)
ECON-6219	Human Resource Development and Management	3(3+0)
ECON-6220	International Trade Theory & Finance	3(3+0)
ECON-6221	Investment and Project Appraisal	3(3+0)
ECON-6222	Economic Principles, Strategies & Techniques of Marketing	3(3+0)

Thesis (6 Credit hours) in place of ECON-6218 and ECON-6222. However, this option will be available to only 5 top students.

MPhil Economics

Eligibility: MA/MSc/BS 4-Year or equivalent (16 years of Education) in the relevant field or equivalent degree from HEC recognized institution with at least second Division or CGPA 2.00 out of 4.00.
Duration: 02 Year Program (04 Semesters)
Degree Requirements: 30 Credit Hours

Core Courses in Semester-1

Econ- 7101	Micro Economics	3(3+0)
Econ- 7102	Macro Economics	3(3+0)
Econ- 7103	Mathematical Economics	3(3+0)
Econ- 7104	Applied Econometrics	3(3+0)

Optional Courses in Semester-2

Econ- 7106	Economics of Development Planning and Growth	3(3+0)
Econ- 7108	Public Finance	3(3+0)
Econ- 7111	Agricultural Growth and Poverty	3(3+0)
Econ- 7118	Research Methodology	3(3+0)

Semester 3-4

	Dissertation	6(0+6)

PhD Economics

Eligibility: MPhil/MS Economics in the relevant field from HEC recognized institution with at least CGPA 3.00 out of 4.00.
Duration: 03 Year Program (06 Semesters)
Degree Requirements: 18 Credit Hours Course Work + Dissertation

Semester-1

Econ- 8101	Advanced Micro Economics	3(3+0)
Econ- 8102	Advanced Macro Economics	3(3+0)
Econ- 8103	Advanced Applied Econometrics	3(3+0)

Semester-2

Econ- 8104	General Equilibrium and Welfare Economics	3(3+0)
Econ- 8131	Development Economics	3(3+0)
Econ-8144	Mathematical Economics II	3(3+0)

Semester 3 & onward

	Comprehensive Examination Synopsis Defense Dissertation	

ECONOMICS

URCE-5101 **Grammar** **3(3+0)**

The course introduces the students to the underlying rules to acquire and use language in academic context. The course aims at developing grammatical competence of the learners to use grammatical structures in context in order to make the experience of learning English more meaningful enabling the students to meet their real-life communication needs. The objectives of the course are to, reinforce the basics of grammar, understand the basic meaningful units of language, and introduce the functional aspects of grammatical categories and to comprehend language use by practically working on the grammatical aspects of language in academic settings. After studying the course, students would be able to use the language efficiently in academic and real-life situations and integrate the basic language skills in speaking and writing. The students would be able to work in a competitive environment at higher education level to cater with the long-term learners' needs.

Contents

1. Parts of speech
2. Noun and its types
3. Pronoun and its types
4. Adjective and its types
5. Verb and its types
6. Adverb and its types
7. Prepositions and its types
8. Conjunction and its types
9. Phrases and its different types
10. Clauses and its different types
11. Sentence, parts of sentence and types of sentence
12. Synthesis of sentence
13. Conditional sentences
14. Voices
15. Narration
16. Punctuation
17. Common grammatical errors and their corrections

Recommended Texts

1. Eastwood, J. (2011). *A basic english grammar*. Oxford: Oxford University Press.
2. Swan, M. (2018). *Practical english usage* (8th ed.). Oxford: Oxford University Press.

Suggested Readings

1. Thomson, A. J. & Martinet, A. V. (1986). *A practical english grammar*. Oxford: Oxford University Press
2. Biber, D., Johansson, S., Leech, G., Conrad, S., Finegan, E. & Quirk, R. (1999). *Longman grammar of spoken and written english*. Harlow Essex: MIT Press.
3. Hunston, S. & Francis, G. (2000). *Pattern grammar: A corpus-driven approach to the lexical grammar of english*. Amsterdam: John Benjamins.

ECON-5101 **Principles of Micro Economics** **3(3+0)**

The course is designed for the beginners with either no formal background or very little acquaintance with economics. The objective is to give the students with a clear understanding of the basic concepts, tools of analysis and terminologies used in microeconomics. Emphasis will be on the use of graphs, diagrams and numerical tables/schedules for exposition. Moreover, this course will discuss how and why we make economic decisions, and how our choices affect the economy. By the end of this course, you will have a strong grasp on the major issues microeconomists face, including: consumer and producer behavior, the nature of supply and demand, the different kinds of markets and how they function, and the welfare outcomes of consumers and producers. We also explore how these formal principles and concepts apply to real-world issues. The scope and emphasis of this course goes beyond a general understanding of microeconomics to incorporate the core concepts of the overall field of economics.

Contents

1. An overview of the social system, Economy as integral part of the social system
2. Economic agents and economic problem
3. Classification of economics, Importance and scope of micro-economics, Basic concepts
4. The Price Mechanism
5. The concept of a market economy, Laws of demand and supply
6. Market equilibrium and determination of price
7. Laws of diminishing marginal utility and equi-marginal utilities
8. Classification of the firms, Production and supply of commodities Objectives of the firm
9. Output maximization and cost minimization, Industrial structure & market supply
10. Production and Cost Functions: factors of production, Secondary/intermediate inputs
11. The laws of returns, Revenues of the firm
12. Cost function Short-run and Long-run costs, Equilibrium of the firm.
13. Market Structure
14. Classification of markets i.e. Perfect competition, Imperfect competition: Monopoly and Monoposony, Monopolistic competition
15. Price determination

Recommended Texts

1. Koutsoyiannis, A. (1975). *Modern microeconomics* (2nd ed.). London, Macmillan.
2. Nicholson, W. (2002). *Microeconomic theory: Basic principles and extensions* (11th ed.). Cengage Learning.

Suggested Readings

1. Silberberg, E. (2000). *The structure of economics: A mathematical analysis* (3rd ed.). McGraw Hill.
2. Henderson, J. M. & Quandt, R. E. (1990). *Microeconomic theory* (3rd ed.). N.Y. Melliwra H. A. Book Co.

URCI-5105 **Islamic Studies** **2(2+0)**

Islamic Studies engages in the study of Islam as a textual tradition inscribed in the fundamental sources of Islam; Qur'an and Hadith, history and particular cultural contexts. The area seeks to provide an introduction to and a specialization in Islam through a large variety of expressions (literary, poetic, social, and political) and through a variety of methods (literary criticism, hermeneutics, history, sociology, and anthropology). It offers opportunities to get fully introductory foundational bases of Islam in fields that include Qur'anic studies, Hadith and Seerah of Prophet Muhammad (PBUH), Islamic philosophy, and Islamic law, culture and theology through the textual study of Qur'an and Sunnah.

Islamic Studies is the academic study of Islam and Islamic culture. It majorly comprises of the importance of life and that after death. It is one of the best systems of education, which makes an ethical groomed person with the qualities which he/she should have as a human being. The basic sources of the Islamic Studies are the Holy Qur'an and Sunnah or Hadith of the Holy Prophet Muhammadﷺ. The learning of the Qur'an and Sunnah guides the Muslims to live peacefully.

Contents

1. Study of the Qur'an (Introduction to the Qur'an, Selected verses from *Surah Al-Baqarah, Al-Furqan, Al-Ahzab, Al-Mu'minoon, Al-An'am, Al-Hujurat, Al-Saff*)
2. Study of the Hadith (Introduction to Hadith literature, Selected Ahadith (Text and Translation)
3. Introduction to Qur'anic Studies
4. Basic Concepts of Qur'an
5. History of Quran
6. Basic Concepts of Hadith
7. History of Hadith
8. Kinds of Hadith
9. Uloom –ul-Hadith
10. Sunnah & Hadith
11. Seerat ul-Nabi (PBUH), necessity and importance of Seerat, role of Seerah in the development of personality, Pact of Madinah, Khutbah Hajjat al-Wada' and ethical teachings of Prophet (PBUH).
12. Legal Position of Sunnah
13. Islamic Culture & Civilization
14. Characteristics of Islamic Culture & Civilization
15. Historical Development of Islamic Culture & Civilization
16. Comparative Religions and Contemporary Issues
17. Impact of Islamic civilization

Recommended Books

1. Hassan, A. (1990). *Principles of islamic jurisprudence*. New Dehli: Adam Publishers.
2. Zia-ul-Haq, M. (2001). *Introduction to al-Sharia al-islamia*. Lahore: Aziz Publication.

Suggested Readings

1. Hameedullah, M. (1957). *Introduction to islam*. Lahore: Sh M Ashraf Publisher.
2. Hameedullah, M. (1980). *Emergence of islam*. New Dehli: Adam Publishers.
3. Hameedullah, M. (1942). *Muslim conduct of state*. Lahore: Sh M Ashraf Publisher.

URCM-5101 **Introduction to Mathematics** **3 (3+0)**

This course is built upon the mathematical concepts, principles and techniques that are useful in almost all undergraduate programs. The main objectives of the course are to enhance student's competency in application of mathematical concepts in solving problems and to improve their level of quantitative approach. Upon the successful completion of this course students would be able to develop understanding: Mathematical functions, Building and solving linear and quadratic equations, Matrices and Determinants with application, sequences and series, and basic Financial Mathematics. To prepare the students, not majoring in mathematics, with the essential tools of financial, algebra and geometry to apply the concepts and the techniques in their respective disciplines.

Contents

1. Linear Equations and Quadratic Equations: Formation of Linear equation
2. Solving Linear equation involving one variable
3. Solution of Quadratic equation by factorization method
4. Solution of quadratic equation by square completion methods
5. Solution of quadratic equation by quadratic formula
6. Application of quadratic equation
7. Sequences and Series
8. Matrices and Determinants: Introduction of matrices
9. Types of matrices
10. Matrix operations
11. Inverse of matrix
12. The determinants and its properties
13. Solution of system of linear equations by determinants: Cramer's rule, Inverse Matrices Method
14. Mathematics of Finance: Simple interest
15. Compound interest
16. Annuities
17. Sets and Sets Operations
18. Permutation and combinations
19. Introduction to mathematical induction and binomial theorem
20. Basic Concepts of Trigonometry
21. Fundamental Identities of Trigonometry

Recommended Texts

1. Frank, S. B. (1993). *Applied mathematics for business, economics, and the social sciences* (4th ed.). New York: McGraw-Hill publisher.
2. Nauman, K. (2019). *Basic mathematics-I: algebra and trigonometry* (2nd ed.). Lahore: Al-Hassan Pub.

Suggested Readings

1. Kaufmann, J. E. (1994). *College algebra and trigonometry* (3th ed.). Boston: PWS-Kent Pub. Co.
2. Swokowski, E. W. (1993). *Fundamentals of algebra and trigonometry* (8th ed.). Boston: PWS-Kent Pub. Co.

ICTC-5201 Introduction to Information & Communication Technologies 3(3+0)

The goal of this course is to provide students with no previous computer experience the opportunity to become computer literate. Understanding of basics of computer is necessary for efficient usage of computer system in real environment. The course consists of basic concepts of computer to detail usage of software in different fields. The course introduces students to information and communication technologies and their application in the workplace. Objectives include basic understanding of computer software, system software, application software, hardware, and associated technologies. At end of course students will be able to understand how computers can be used in the workplace, how communications systems can help to boost productivity, and how the Internet technologies can influence the workplace. Also students will be able to differentiate which tool is more suitable for a given problem using optimal resources to achieve better productivity and performance.

Contents

1. Introduction to Computers
2. Computer Software and Hardware
3. System Software
4. Evolution of the Internet, Browsers and Search Engines
5. Application Software and their usage in workplace
6. Input Devices
7. Output Devices
8. Storage
9. Network and Communications
10. Communication media's
11. Email Collaborative Computing and Social Networking
12. Databases and file system
13. Computer Security and privacy
14. E-Commerce
15. Use of Microsoft Office tools (Word, Power Point, Excel) or other similar tools depending on the operating system.
16. Other IT tools/software specific to field of study of the students

Recommended Texts

1. Vermaat, M. E., & Sebok, S. L. (2018). *Discovering computers.* Boston: Cengage Learning.
2. Floyed, F., & Brian, L. (2015). *Computers by understanding technology.* Minnesota: Emc Pub.

Suggested Readings

1. Shelly, G. B., & Vermaat, M. E. (2012). *Discovering computers 2012* (1st ed.). London Course Technology
2. O'Leary, T. J., & O'Leary L. I. (2017). *Computing essentials. New York.* McGraw Hill Higher Education

BUSB-6124 Entrepreneurship and SME Management 3(3+0)

This course introduces students to the theory of entrepreneurship and its practical implementation. It focuses on different stages related to the entrepreneurial process, including business model innovation, monetization, small business management as well as strategies that improve performance of new business ventures. Centered on a mixture of theoretical exploration as well as case studies of real-world examples and guest lectures, students will develop an understanding of successes, opportunities and risks of entrepreneurship. Students will also develop skills in written business communication and oral presentations that allow students to integrate entrepreneurship concepts and interact with business experts. At the end of this course students should be able to explore and experience the joy of creating unique solutions to market opportunities, create and exploit innovative business ideas and market opportunities, turn market opportunities into a business plan, demonstrate and present successful work, collaboration and division of tasks in a multidisciplinary and multicultural team and demonstrate understanding and application of the tools necessary to create sustainable and viable businesses.

Contents

1. Introduction: entrepreneurial perspective
2. Economics and entrepreneurship
3. Process, ventures, practices and characteristics
4. Entrepreneurship and new free enterprise: venture opportunities, innovations, change, environment of small business
5. Corporate entrepreneurship, new venture unit of planning and concepts of planning
6. Stages of growth model, responsibility of feasibility plan
7. Product and services concepts and commercial opportunities (macro over view)
8. Products and technology, identification opportunities
9. Product development life cycle, product protection
10. Trademark and patents, process of patents
11. Validity of property rights and accessing government information
12. Human resources side of enterprise
13. Infrastructure of services, types of service venture, success factors.
14. Marketing and new venture development, Marketing research for new ventures,
15. Marketing concepts, startup of marketing research, Market focused on organization, sources of market intelligence
16. Competitive analysis and implications of market research
17. Marketing strategies and functions, Product concepts-4 Ps
18. Entrepreneurial team and business formation
19. Organization cycle and growth of organization

Recommended Texts

1. Holt, D. H. (2016). *Entrepreneurship: New venture creation*. New York: Prentice Hall
2. Bolton & Thompson, J. (2004). *Entrepreneurs: Talent, temperament and techniques*. Butterworth: Heinemann

Suggested Readings

1. Robinson, A. G. & Stern, S. (1998). *Corporate creativity*. USA: Berrett-Koehler Publishers
2. Neck, H. M., Neck, C. P. & Murray, E. L. (2017). *Entrepreneurship: The practice and mindse*. Boston: SAGE Publisher

URCE-5102 Language Comprehension & Presentation Skills 3(3+0)

The course aims at developing linguistic competence by focusing on basic language skills in integration to make the use of language in context. It also aims at developing students' skills in reading and reading comprehension of written texts in various contexts. The course also provides assistance in developing students' vocabulary building skills as well as their critical thinking skills. The contents of the course are designed on the basis of these language skills: listening skills, pronunciation skills, comprehension skills and presentation skills. The course provides practice in accurate pronunciation, stress and intonation patterns and critical listening skills for different contexts. The students require a grasp of English language to comprehend texts as organic whole, to interact with reasonable ease in structured situations, and to comprehend and construct academic discourse. The course objectives are to enhance students' language skill management capacity, to comprehend text(s) in context, to respond to language in context, and to write structured response(s).

Contents

1. Listening skills
2. Listening to isolated sentences and speech extracts
3. Managing listening and overcoming barriers to listening
4. Expressing opinions (debating current events) and oral synthesis of thoughts and ideas
5. Pronunciation skills
6. Recognizing phonemes, phonemic symbols and syllables, pronouncing words correctly
7. Understanding and practicing stress patterns and intonation patterns in simple sentences
8. Comprehension skills
9. Reading strategies, summarizing, sequencing, inferencing, comparing and contrasting
10. Drawing conclusions, self-questioning, problem-solving, relating background knowledge
11. Distinguishing between fact and opinion, finding the main idea, and supporting details
12. Text organizational patterns, investigating implied ideas, purpose and tone of the text
13. Critical reading, SQ3R method
14. Presentation skills, features of good presentations, different types of presentations
15. Different patterns of introducing a presentation, organizing arguments in a presentation
16. Tactics of maintaining interest of the audience, dealing with the questions of audience
17. Concluding a presentation, giving suggestions and recommendations

Recommended Texts

1. Mikulecky, B. S. & Jeffries, L. (2007). *Advanced reading power: Extensive reading, vocabulary building, comprehension skills, reading faster*. New York: Pearson.
2. Helgesen, M. & Brown, S. (2004). *Active listening: Building skills for understanding*. Cambridge: Cambridge University Press.

Suggested Readings

1. Roach, C. A. & Wyatt, N. (1988). *Successful listening*. New York: Harper & Row.
2. Horowitz, R. & Samuels, S. J. (1987). *Comprehending oral and written language*. San Diego: Academic Press.

URCP-5106 **Pakistan Studies** **2(2+0)**

The course is designed to acquaint the students of BS Programs with the rationale of the creation of Pakistan. The students would be apprised of the emergence, growth and development of Muslim nationalism in South Asia and the struggle for freedom, which eventually led to the establishment of Pakistan. While highlighting the main objectives of national life, the course explains further the socio-economic, political and cultural aspects of Pakistan's endeavours to develop and progress in the contemporary world. For this purpose, the foreign policy objectives and Pakistan's foreign relations with neighbouring and other countries are also included. This curriculum has been developed to help students analyse the socio-political problems of Pakistan while highlighting various phases of its history before and after the partition and to develop a vision in them to become knowledgeable citizens of their homeland.

Contents

1. Contextualizing Pakistan Studies
2. Geography of Pakistan: Geo-Strategic Importance of Pakistan
3. Freedom Movement (1857-1947)
4. Pakistan Movement (1940-47)
5. Muslim Nationalism in South Asia
6. Two Nations Theory
7. Ideology of Pakistan
8. Initial Problems of Pakistan
9. Political and Constitutional Developments in Pakistan
10. Economy of Pakistan: Problems and Prospects
11. Society and Culture of Pakistan
12. Foreign Policy Objectives of Pakistan and Diplomatic Relations
13. Current and Contemporary Issues of Pakistan
14. Human Rights: Issues of Human Rights in Pakistan

Recommended Texts

1. Kazimi, M. R. (2007). *Pakistan studies.* Karachi: Oxford University Press.
2. Sheikh, J. A. (2004). *Pakistan's political economic and diplomatic dynamics.* Lahore: Kitabistan Paper Products.

Suggested Readings

1. Hayat, S. (2016). *Aspects of pakistan movement.* Islamabad: National Institute of Historical and Cultural Research.
2. Kazimi, M. R (2009). *A concise history of pakistan.* Karachi: Oxford University Press.
3. Talbot, I. (1998). *Pakistan: A modern history*. London: Hurst and Company.

ECON-5102 **Principles of Macro Economics** **3(3+0)**

The course is designed for the beginners with no formal background or little acquaintance with economics. The objective is to give the students with a clear understanding of the basic concepts, tools of analysis and terminologies used in macroeconomics. Emphasis will be on the use of graphs, diagrams and numerical tables/schedules for exposition. The students will have understanding of major problems of any economy, important macroeconomic concepts, and principles. They will come to know measurement of the efficiencies of any economy. They will learn about working of the commercial banks as well as central banks. Further, they will know about the major policies of the central banks and government to bring stability in the economy. They will learn about different theories of international trade and be able apply this knowledge for uplifting the economy. They will also learn about balance of payment. The teacher is expected to draw examples from the surrounding world to clarify the concepts.

Contents

1. The economy in aggregate, Complexities of the world of business, Scope of macroeconomics
2. Brief account of the development of macroeconomics after the World War-II
3. Concept of business cycles, Concepts of Inflation and Unemployment
4. Macroeconomic variables and their mutual relationship, Macro-models
5. Definition and various concept of national income, Measures of national income
6. Computation of national income: Product, Income and Expenditure approaches
7. Circular flow of income, Nominal versus Real income, Per capita income and the standard of living
8. Components of Aggregate Demand
9. The Concept of Open and closed economy models
10. Concept of aggregate markets: Product, Money, Labor and Capital markets
11. Components of aggregate demand: Consumption, Investment and Government spending
12. Money and Banking
13. Money: definition, forms and functions
14. Central Bank and its functions with reference to the State Bank of Pakistan, Commercial banking
15. The Quantity Theory of money, Inflation: measurement and impacts, causes of inflation and remedies
16. Monetary policy: brief introduction
17. Public Finance and Taxation
18. Sources of public revenue, Various forms of taxes
19. Major heads of public expenditure, Revenue and Capital account, Concept of budget deficits
20. Sources of filling the gaps, Deficit financing, Fiscal policy: meaning and objectives.
21. International Trade, Global distribution of resources, Concept of imports and exports,
22. Theory of absolute and comparative advantage, Currency exchange rates,
23. Balance of Payments: causes of deficits in BOP of Pakistan and remedial measures,
24. Custom Unions, The problem of external debt, Commercial Policy: objectives and scope

Recommended Texts

1. Mankiw, G. (2017). *Principles of macroeconomics* (8th ed.) New York: Cengage.
2. Samulson, P. & Nordrons, W. (2004). *Economics* (18th ed.). Sydney: McGraw Hill.

Suggested Readings

1. Parkin, M. (2004). *Macroeconomics* (7th ed.). London: Prentice Hall.
2. Miller, R. L. (2005). *Economics today* (14th ed.). Chicago: Addison Wesley.

MATH-6161 Calculus-I 3 (3+0)

The purpose of this course is to provide students the necessary mathematical skills to pursue more advanced courses in Economics. The course focuses on techniques of derivation, integration and their applications in different fields. The course aims at familiarizing the students with basic concepts of real numbers, limits, continuity and functions. Calculus-I is devised to enhance the technical skills in the area of Calculus, which are used in almost all subdisciplines of Economics. The course aims to provide both the analytical and computational skills that are required for the analysis of Economics problems. The students will be able to develop necessary mathematical skills in solving problems with persistence. The course will develop mathematical curiosity and use inductive and deductive reasoning when solving problems. The course aims to provide both the analytical and computational skills that are required for the analysis of Economics problems. The students shall be able to comprehend, analyze, evaluate and make generalizations so as to solve mathematical problems.

Contents

1. Real number line.
2. Functions and their graphs.
3. Solution of equations involving absolute values, inequalities.
4. Limit of a function, left hand and right hand limits.
5. Continuity.
6. Derivatives, techniques of differentiation, differentiation of polynomials, rational, exponential, logarithmic, trigonometric and inverse trigonometric functions.
7. The chain rule and higher order derivatives.
8. Applications of derivatives, increasing and decreasing functions.
9. Relative extrema and optimization.
10. Curve sketching, Rolle's theorem, The Mean value theorem.
11. Indeterminate forms and L' Hospitals rule.
12. Integration and definite integrals.
13. Techniques of evaluating indefinite integrals and integration by substitution.
14. Integration by parts and change of variables in indefinite integrals.
15. Area between the curves.
16. Applications of integrals.

Recommended Texts

1. Thomas, G. B., Weir, M. D. & Hass, J. R. (2009). *Calculus* (12th ed.). London: Pearson.
2. Anton, H., Bevens, I. & Davis, H. (2010). *Calculus* (9th ed.). Oxford: John Wiley and Sons.

Suggested Readings

1. Liebeck, M. (2010). *A concise introduction to pure mathematics* (3rd ed.). London: Chapman and Hall CRC Press.
2. Kaseberg. (2007). *Intermediate algebra* (4th ed.). New York: Houghton Mifflin College

ECON-5103 **Principles of Accounting** **3 (3+0)**

Accounting is the system of recording financial transactions with both numbers and text in the form of financial statements. It provides an essential tool for billing customers, keeping track of assets and liabilities (debts), determining profitability, and tracking the flow of cash principles of accounting refers to the broad underlying concepts which guide accountants when preparing financial statements. Principles of accounting can also mean generally accepted accounting principles (GAAP). To create an understanding of basic accounting terms and concepts, to familiarize with the accounting process of determination of income / loss for a certain period and financial position at a certain date, to develop an understanding of the accounting cycle. The main objectives of accounting are maintaining a complete and systematic record of all transactions and analyzing the financial position of a business. Every individual or a business concern is interested to know the results of financial transactions and their results are ascertained through the accounting process.

Contents

1. Introduction Need and important Accounting a business language Book keeping vs.Accounting
2. Introduction Accounting vs. accountancy Branches of Accounting Objects of accounting Importance of accounting convention
3. Forms of Business organization Sole proprietor Partnership Joint stock company Goods and merchandise Purchases Sales Discount Debtors Creditors Owner equity Accounting concepts
4. Transaction and accounting equation. What is an event? Features Classification Rules for cash and credit Accounting equation
5. Journal Definition Characteristics Narration Advantages of journal Simple entry and compound entry Illustrations + problems
6. Ledger Features Forms of ledger accounts Posting procedures Balancing an account Normal balance Trial balance Method of preparing trial balance
7. Journal, ledger & trial balance Problems & solution
8. Final account Revenue Expenses Trading account Closing stock
9. Final Account Profit and loss Balance sheet
10. Financial statement Different kind of financial ratio
11. Financial analysis and decision making limitation
12. Capital kinds of capital kinds of loan
13. Depreciation types of depreciation
14. Income statement
15. Balance sheet
16. Case studies different financial case studies
17. Preparation Revision of Course

Recommended Texts

1. Van Horne, J. C. & Wachowicz, J. M. (2005). *Fundamentals of financial management* (12th ed.). New York: Pearson Education
2. Gitman, L. J., Juchau, R. & Flanagan, J. (2015). *Principles of managerial finance* (10th ed.). London: Pearson Higher Education

Suggested Readings

1. Block, S. B., Hirt, G. A. & Short, J. D. (2015). *Foundations of financial management* (10th ed.). Toronto: McGraw-Hill
2. Brigham, E. F. & Houston, J. F. (2012). *Fundamentals of financial management* (12th ed.). London: Cengage Learning.

INTR-5101 Introduction to International Relations 3(3+0)

The study and practice of international relations is interdisciplinary in nature, blending the fields of economics, history, and political science to examine topics such as human rights, global poverty, the environment, economics, globalization, security, global ethics, and the political environment. Historically, the establishment of treaties between nations served as the earliest form of international relations. International relations allows nations to cooperate with one another, pool resources, and share information as a way to face global issues that go beyond any particular country or region.This course provides a comprehensive introduction to international relations, focusing in particular on its origins and historical evolution, its key concepts, major theoretical frameworks, main actors and institutions, the global architecture of power, and its dynamic nature in the process of globalization. More specifically, this course introduces concepts of power, statecraft, diplomacy, foreign policy, political economy and international security, and examines the evolution of international relations as a subject.

Contents

1. IR as an academic Field
2. Realism, Liberalism, Marxism, Social Constructivism
3. Relevance to Current Issues
4. US, Russia and Rise of China
5. Development of the International System
6. History of state development (City State to Empires)
7. Westphalia and Emergence of State system
8. Industrial revolution and French Revolution
9. World War I & World War II
10. Cold War and Post-Cold War
11. States and Other Actors
12. Sovereignty and Nationalism
13. States, IGOs, TNAs
14. Globalization
15. Foreign Policy
16. Diplomacy
17. Domestic politics and the outside world, public opinion
18. International Institutions, United Nations, Security Council, General Assembly
19. UN Agencies, World Bank / IMF
20. Regional organizations: NATO, ASEAN and SAARC etc.

Recommended Texts

1. Devetak, R., George, J. & Percy, S. (2017). *An introduction to international relations*. Cambridge: Cambridge University Press.
2. Baylis, J., Smith, S. & Owens, P. (2004). *The globalization of world politics*. Oxford: Oxford University Press.

Suggested Readings

1. Jackson, R. & Sorensen, G. (2016). *Introduction to international relations* (6th ed.). Oxford: Oxford University Press.
2. Carlsnaes, W., Carlsnaes, W., Risse-Kappen, T. & Simmons, B. (2013). *Handbook of international relations*. London: SAGE Publications.

URCE-5103 **Academic Writing** **3(3+0)**

Academic writing is a formal, structured and sophisticated writing to fulfill the requirements for a particular field of study. The course aims at providing understanding of writer's goal of writing (i.e. clear, organized and effective content)and to use that understanding and awareness for academic reading and writing. The objectives of the course are to make the students acquire and master the academic writing skills. The course would enable the students to develop argumentative writing techniques. The students would be able to the content logically to add specific details on the topics such as facts, examples and statistical or numerical values. The course will also provide insight to convey the knowledge and ideas in objective and persuasive manner. Furthermore, the course will also enhance the students' understanding of ethical considerations in writing academic assignments and topics including citation, plagiarism, formatting and referencing the sources as well as the technical aspects involved in referencing.

Contents

1. Academic vocabulary
2. Quoting, summarizing and paraphrasing texts
3. Process of academic writing
4. Developing argument
5. Rhetoric: persuasion and identification
6. Elements of rhetoric: Text, author, audience, purposes, setting
7. Sentence structure: Accuracy, variation, appropriateness, and conciseness
8. Appropriate use of active and passive voice
9. Paragraph and essay writing
10. Organization and structure of paragraph and essay
11. Logical reasoning
12. Transitional devices (word, phrase and expressions)
13. Development of ideas in writing
14. Styles of documentation (MLA and APA)
15. In-text citations
16. Plagiarism and strategies for avoiding it

Recommended Texts

1. Swales, J. M. & Feak, C. B. (2012). *Academic writing for graduate students: Essential tasks and skills* (3rd ed.). Ann Arbor: The University of Michigan Press.
2. Bailey, S. (2011). *Academic writing: A handbook for international students* (3rd ed.). New York: Routledge.

Suggested Readings

1. Craswell, G. (2004). *Writing for academic success*. London: SAGE.
2. Johnson-Sheehan, R. (2019). *Writing today*. Don Mills: Pearson.
3. Silvia, P. J. (2019). *How to write a lot: A practical guide to productive academic writing*. Washington: American Psychological Association.

ECON-5104 Intermediate Micro Economics 3(3+0)

The objective of the course is to clarify and extend further the microeconomic concepts and to develop analytical skills and solving petty problems. In addition to diagrammatic approach the course intend to get accustomed the students to simple mathematics and numerical tools. The teacher is expected to draw examples from surroundings for exposition. The students may be given assignments to collect information from the markets and to analyze the data. They may have tours to the industrial units and to observe the process of production and problems in supply and demand. The objective is to confront them to advanced theoretical concepts and rigorous analysis with mathematical tools at hand. They have to develop analytical skills and to enhance the capabilities to solve somewhat complicated problems. Moreover, this course examines how economic decisions are made by households and firms, and how they interact to determine the quantities and prices of goods and the allocation of resources under different market structures. It also studies the equilibrium in presence of externalities/public goods and information asymmetry. The course examines microeconomic policy and the role of government in allocating resources. It will develop students' ability to apply the knowledge acquired to the analysis of specific economic cases, recognizing proper framework of analysis and constructing and analyzing adequate economic model within this framework.

Contents

1. Scope of Microeconomics and areas of its concern
2. Theory of Consumer Behavior, Cardinal and ordinal approach to utility
3. The indirect utility function
4. Homothetic and Non-homothetic Preferences, Introduction to the Revealed Preference Theory.
5. Demand & Elasticity: Derivation of demand functions using indifference curves,
6. Elasticity of demand, its Importance and different types
7. Production Functions, Different production functions: Cobb Douglas and CES etc.
8. Iso-quant maps, the cost line and equilibrium of the firm
9. Cost of Production, Different types of costs
10. Cost minimization subject to given/pre-determined level of output.
11. Monopoly and Monopsony, bilateral monopoly, price discrimination.
12. Monopolistic Competition and Oligopoly, Pricing of the Factors of Production.

Recommended Texts

1. Koutsoyiannis, A. (1975). *Modern microeconomics* (2nd ed.). London, Macmillan.
2. Nicholson, W. (2002). *Microeconomic theory: Basic principles and extensions* (11th ed.). Cengage Learning.

Suggested Readings

1. Silberberg, E. (2000). *The structure of economics: A mathematical analysis* (3rd ed.). New York: McGraw Hill.
2. Henderson, J. M. & Quandt, R. E. (1990). *Microeconomic theory* (3rd ed.). NY: McGraw-Hill

ECON-5105 Development Economics 3(3+0)

This course provides an understanding the evolution and relevance of Development Economics concepts and its policy suggestions in addressing the widespread issues like inequality, unemployment, poverty, gender disparities, labor productivity etc. The course would explain the humanistic perspective of economics and explicitly involves the explanation of multi-dimensional nature of Development Economics. The course would explain the humanistic perspective of economics and explicitly involves the explanation of multi-dimensional nature of Development Economics. Furthermore, this course provides an in-depth discussion of different economic explanations of underdevelopment, and modern strategies for fostering development. We will investigate the role of institutions, institutional change, and markets as they relate to economic development, and discuss related domestic and international economic policy questions. Special emphasis is put on the interplay and synergy between economic theory (attempting to explain underdevelopment) and empirical data (providing both motivating facts and specific testing grounds for theory).

Contents

1. Economic Development
2. Economic Development and Growth
3. Measurement of Economic Development and Growth
4. Characteristics of Least Developing Countries (LDCs)
5. Classical and Contemporary Theories
6. Agriculture and Industry
7. Green Revolution and Industrialization
8. Policies to combat debt problem
9. WTO, Liberalization and International Trade
10. Poverty and Income Distribution
11. Poverty concepts
12. Income inequality
13. Economic Growth and Environment
14. Sustainable Development

Recommended Texts

1. Todaro, M. & Smith, S. (2015). *Economic development* (11th ed.). New York : Pearson.
2. Meier, G. M. & Rauch, J. E. (2000). *The globalization of world politics: An introduction to international relations* (4th ed.). Oxford: Oxford University Press.

Suggested Readings

1. Cypher, J. M. & Dietz, J. L. (2004). *The process of economic development* (2nd ed.). New York: Routledge.
2. Jhingan, M. L. (1990). *The economics of development and planning* (2nd ed.). New Delhi: Vrinda Publications Ltd.

STAT-5122 **Statistics for Economics-I** **3 (3+0)**

The aims of statistics are to provide knowledge of probability and the standard statistical distributions. In this subject the student is able to create, read, and interpret graphs, charts, histograms, and diagrams. The student is able to collect, organize, and represent data, and be able to recognize and describe relationships. The student is able to understand and use the basic measure of central tendency. The student is able to understand and use the language of probability. The student is able to compute the probabilities of composite events using the basic rules of probability. The student is able to understand the significance of statistics and probability in the real world. The student is able to understand the concept of approximation, quantities, estimation, error, precision, and accuracy in interpreting the results of such measurements. Majors should understand the fundamentals of probability theory, statistical reasoning and inferential methods, statistical computing, statistical modeling and its limitations, and have skill in description, interpretation and exploratory analysis of data by graphical and other means; graduates are also expected to learn to communicate effectively.

Contents

1. The basic concepts of statistics
2. Type of measurement scale
3. Types of data, errors, data collection
4. Significant digits, Rounding of a Number
5. The frequency distribution and its types
6. Graphic and diagrammatic representation
7. Types of Averages,
8. Quantiles
9. Relative Merits and Demerits of various Averages
10. Box and Whisker Plot, Stem and Leaf Display and Outliers
11. Absolute and relative measures,
12. Properties of variance and standard Deviation, Standardized variables,
13. Moments and Moments ratios.
14. Basics of Probability
15. Discrete distributions
16. Continuous distributions
17. Index Numbers
18. Time series analysis

Recommended Texts

1. Lind, D. A., Marshal, W. G. & Mason, R. D. (2015). *Statistical techniques in business and economics* (15th ed.). Boston: McGraw Hill
2. Chaudhry, S. M. & Kamal, S. (2010). *Introduction to statistical theory* (7th ed.). Lahore: Ilmi Kitab Khana, Pakistan

Suggested Readings

1. Siegel, A. F. (2012). *Practical business statistics* (7th Ed.) Sydney: McGraw Hill
2. Newbold, P., Carlson, W. L. & Thorne, B. M. (2002). *Statistics for business and economics* (5th ed.). Prentice-Hall

ECON-5106 **Principles of Marketing** **3 (3+0)**

This course is aimed at increasing an awareness of relevance of modern marketing thought for students as consumers and as marketing practitioners. This basic course of marketing forms the foundation for advanced course work and practice in business. Marketing is important for everyone. It is obviously important for a marketing or business major, and that may be why you are here. Whether you are applying for a job with a consumer goods firm, or you are seeking a better way to market your company's product, you will do a better job if you understand what marketing is and how it works. You should finish this course with a strong sense of how to market yourself, your skills, and your ideas as well as more traditional products such as toothpaste or soap, and with a solid understanding of why thinking like a marketer is crucial to the survival of any organization today.

Contents

1. Introduction to marketing
2. Strategic planning
3. The marketing environment
4. Consumers
5. Segmentation
6. Products
7. Pricing
8. Channels
9. Promotion

Recommended Texts

1. Kotler, P. & Armstrong, G. (2008). *Principal of marketing* (12th ed.). Cambridge: Prentice-Hall International, Inc.
2. Etzel, W. & Stanton. (2009). *The fundamentals of marketing* (11th ed.). Oxford: McGraw Hill.

Suggested Readings

1. Jerome, M. (2000). *Basic marketing,* (8th ed.). London: Prentice Hall.
2. Boyd, H. W. (2001). *Marketing management: strategic approach with a global orientation* (3rd ed.). Moscow: McGraw Hill.

ECON-5107 **Financial Management** **3(3+0)**

Financial Management discusses the role that financial manager play in businesses and the financial market environment in which firms operate. It argues that the goal of managers should be to maximize the value of the firm and by doing so maximize the wealth of its owners. The main objective of this course is to give student an understanding of financial environment and financial instruments and basis of evaluation of business entity. This course focuses on the application of modern financial techniques to operating and investing decisions. It comprehensively analyzes working capital management and capital budgeting decisions within the context of the firm's business strategy. The course is designed for managers in non-financial functions and financial analysts and managers in financial lending organizations who make working capital loan decisions and it ensures students reach a proficient level of professional applicability. After qualifying this course student will be able to understand the nature and structure of business organization and shall be able to address basic issues related with financial statement, instruments and business operations.

Contents

1. Introduction to Financial Management
2. Financial Statement Analysis, Cash-Flow Analysis and Financial Planning
3. Accounting Statement of Cash Flows, Cash-flow Forecasting
4. The Time Value of Money
5. Valuation of Long Term Securities
6. Risk and Return
7. Cost of Capital
8. Working Capital Management: Overview of Working Capital Management, Cash and Marketable Securities Management, Accounts Receivable and Inventory Management, Inventory management and control, Short-term Financing
9. Investment in Capital Assets, Capital budgeting process, Estimating project "After-Tex incremental operating cash flows", Capital Budgeting Techniques, Project evaluation and selection: Alternative Methods, Risk and Managerial Options in Capital Budgeting
10. Long-term Financing: Long-Term Debt, Preferred Stock and Common Stock, Loans and Leases

Recommended Texts

1. Van Horne, J. C. & Wachowicz, J. M. (2005). *Fundamentals of financial management* (12th ed.). New York: Pearson Education
2. Gitman, L. J., Juchau, R. & Flanagan, J. (2015). *Principles of managerial finance* (10th ed.). Moscow: Pearson Higher Education

Suggested Readings

1. Block, S. B., Hirt, G. A. & Short, J. D. (2015). *Foundations of financial management* (10th ed.). Sydney: McGraw-Hill
2. Brigham, E. F. & Houston, J. F. (2012). *Fundamentals of financial management* (12th ed.). Toronto: Cengage Learning.

URCE-5104 Introduction to English Literature 3(3+0)

The course is designed to provide the familiarity and comprehension of English literary pieces. The students may not be familiar or well-versed in the various genres of literature prior to taking this course. The course provides training and skills necessary to engage, understand, critically analyze, and enjoy the literary genres of literature: short story, poetry, novel and drama. The students will explore the basic concepts of literary technique, narrative, poetic, and dramatic structures and innovations to engage with the more advanced cognitive aspects of literature. In addition to these theoretical skills, students will also read below the surface of the texts for their historical, ethical, psychological, social, and philosophical value by developing insights in how literature gives us a window into both the experiences of others and wider appreciation for the human condition. The course explores literary production in English against local context in particular, by emphasizing shifts in thought as well as genre innovation, i.e. medieval to modern. It provides an introduction to key texts, authors and literary periods, exploring the relationship of texts to their contexts and considering multiple perspectives in the different literary genres.

Contents

1. Poems, Milton: *Book IX*, lines 897–959.
2. Shakespeare: All the World is a Stage.
3. Browning: My Last Duchess
4. Wordsworth: The Leech Gatherer
5. Keats: Ode to Autumn
6. Walter De La Mare: Tartary
7. Short Stories, *The Necklace*
8. The Woman Who had Imagination
9. Shadow in the Rose Garden
10. Essays, *My Tailor*
11. Whistling of the Birds
12. One Act Play, *Riders to the Sea*
13. Novel, *Animal Farm*

Recommended Texts

1. Kennedy, X. J. & Gioia, D. (2014). *Literature: An introduction to fiction, poetry, drama, and writing*. Boston: Pearson.
2. Mays, K. J. (2014). *The norton introduction to literature*. New York: Norton.

Suggested Readings

1. Bausch, R. & Cassill, R. V. (2006). *The norton anthology of short fiction*. New York: Norton & Company.
2. Gardner, J. E., Lawn, B., Ridl, J. & Schakel, P. (2016). *Literature: A portable anthology*. Boston: Bedford St. Martins.

ECON-5108 Intermediate Macro Economics 3(3+0)

This course offers the student a comprehensive introduction of macroeconomics so as they develop the capacity to understand the issues and problems of the economy in a global scenario. In particular, they have to capture the nature and scope of various public policies. In addition to diagrammatic approach, the students are confronted to simple mathematical analysis. We will attempt to explain why government intervention is needed, how it influences the behaviour of the private sector and what the welfare effects of such influences are. We will also survey political economy, which regards actions of the public sector as determined by political processes. Topics covered may include welfare economics, market failures, and political economy. At the end student will be familiar with the main policy instruments used to mitigate market failures and the principles that guide their optimal use, but also understand the limitations of government intervention - for instance, understand how the presence of information problems both explains the forms that policy intervention take and imposes limits on what can be achieved by it.

Contents

1. The introduction of Keynesian revolution and growth of Macroeconomics
2. Okun's Law and unemployment, Price Indices and Inflation
3. Exogenous and Endogenous variables and their functional relationships
4. Introduction to the Classical and Keynesian Schools of Thought
5. Measurement of National Income
6. Injections into and Leakages from the economy: Saving and Investment
7. The closed and open economy models
8. Real and Financial investment, Autonomous and Induced investment
9. Lags in Investment Demand, Volatility of Investment, Equilibrium in the goods market
10. The demand for money, The Quantity Theory of Money, The Liquidity Preference
11. The supply of money: M1, M2, M3 concepts
12. Derivation of LM Curve (graphic)
13. Aggregate Supply and the Labour Market
14. Inflation and Unemployment

Recommended Texts

1. Mankiw, G. N. (2018). *Macroeconomics* (4th ed.). New York: Worth Publishers
2. Branson, W. H. & Litvack, J. M. (2005). *Macroeconomics: Theory and policy* (3rd ed.). Boston: Princeton University.

Suggested Readings

1. Glahe, F. R. (1973). *Macroeconomics*: *Theory and policy* (1st ed.). London: Harcourt Brace Jovanovich Inc.
2. Froyen, R. T. (2000). *Macroeconomics: Theories and policies* (10th ed.). London: Pearson New York.

STAT-5123 **Statistics for Economics-II** **3(3+0)**

The aims of statistics are to provide methods of drawing valid inferences from samples. A major preoccupation of modern statistics is deciding what degree of reliance can reasonably be placed on particular samples. This course introduces these basic concepts. The foundational role of sampling, regression and hypothesis testing in the mid-eighteenth-century statistics was the study of States - their populations, industries, natural advantages, and so forth. The course aims at familiarizing the students that Statistics is the science of learning from data to make an inference about a population of interest. Understand the concept of the sampling distribution of a statistic, and in particular describe the behavior of the sample mean. Understand the logic and application of hypothesis testing and interpret a set of descriptive statistics and understand the limitations of each measure. To apply the appropriate inferential statistical technique to situations of questions, interpret the results of an inferential test and understand the limitations of each procedure, and compute descriptive and inferential statistics using a calculator and computer.

Contents

1. Sampling
2. Regression
3. Standard deviation of regression or standard error of estimate.
4. Coefficient of determination
5. Correlation
6. Multiple Regression
7. Standard error of estimate of multiple regression.
8. Coefficient of multiple determination and multiple correlation
9. Hypothesis testing
10. Probability and non probability sampling.
11. Probability and random samples.
12. Sampling distribution of a sample proportion.
13. Sampling distribution of a variance
14. Sampling distribution of differences between proportion.
15. The one way analysis of variance.
16. The Anova approach detailed.
17. Chi square test, z-test, t-test

Recommended Texts

1. Aczel, A. D. (1995). *Statistics: Concepts and applications*. Chicago: Richard D. Irwin. *Inc*.
2. Chaudhry, S. M. (2011). *Introduction to statistical theory*. Lahore: Ilmi Kithab Khana.

Suggested Readings

1. Peck, R., Olsen, C. & Devore, J. L. (2015). *Introduction to statistics and data analysis*. NY: Cengage Learning.
2. Bruce, B. & O'Connell R. T. (1997). *Applied statistics improving business processes*. NY: Library of Congress Publication.

ECON-5109 Agriculture Economics 3(3+0)

The objective of the course is to clarify and extend further the concepts of agricultural economics so that the students may develop the capacity to understand the issues and problems of the agri - economy in a global scenario. There has been focused on the issues of modern contemporary economy, while the topics will also be discussed in their historical perspective keeping their importance in future. In particular, they have to capture the nature and scope of various public policies and their consequences regarding agri-sector. In addition to diagrammatic approach, the students are advised to use/apply simple mathematical and numerical analysis where need arise. The examples will be drawn from agri-sector of Pakistan economy as well as from the surrounding world for exposition. The students may be given assignments to collect information about various aspects of the agrian economy. They have to read various issues of Pakistan Economic Surveys and Annual Reports of the ministry of agriculture and food of Pakistan to develop their understanding regarding collection of data/statistics for different analysis. At the end of semester, the students would be able to get command on different concepts of agriculture economics and its various allied /sub sectors.

Contents

1. Introduction, Importance, Structure and Role of Agriculture
2. Current State of Agricultural Development
3. Traditional Agriculture and Productivity
4. Farm Size in Pakistan and Productivity
5. Theory of Rent and Agriculture in Dualistic Development Models
6. Characteristics of Landownership in Underdeveloped Agriculture and Pakistan
7. The Lewis, Ranis-Fei (FR), Jorgenson and Kelley, Williamson, Cheetham Models
8. Dual Economy Models. Agricultural Adequacy; Mellor's Model
9. Resource Use Efficiency, Technical Change and Supply Response
10. Technical Change in LDCs: with Special Reference to Pakistan
11. Response in the Underdeveloped Agricultural labour Market, Specifically in Pakistan
12. Green Revolution in Pakistan and Responses
13. Population and Food Supplies
14. Synthesis of Population and Food Supply Theories
15. Malnutrition in Developing Countries like Pakistan and Remedial Measures
16. Choice of Planning Strategy for Agriculture Development

Recommended Texts

1. Ghatak S. & Ingersent K. (1984). *Agriculture and economic development*. New York: Harvester Press
2. Khan, M. H. (1975). *The economics of green revolution in Pakistan*. Connecticut: Praeger Publishers.

Suggested Readings

1. Karamat, A. (1981). *Political economy of rural development in Pakistan*. Lahore: Vanguard Book House
2. Nabi, I., Naveed, H. & Zahid, S. N. (1986). *The agrarian economy of Pakistan: Issues and policies*. Oxford: Oxford University Press

ECON-5110 **Political Economy** **3(3+0)**

Political Economy is branch of Economics dealing with political policies and economic processes, their interrelations, and their influence on social institutions. It is similar to modern economics but dealing chiefly with governmental policies. It mainly study the role of public policy in influencing the economic and social welfare of a political unit. This course is designed to provide students with an introduction to the field of political economy. Political economy seeks to understand and explain policy outcomes and political behavior. The approach taken is an interdisciplinary one that utilizes tools and concepts from economics to study politics and political behavior. Political outcomes are then explained by the interaction between these actors within the (institutional) constraints of their environment. This course aims to enable students to apply economic theories and concepts to the study of political action and the formation of policy. Furthermore, this course will enable students to recognize the role of institutions in shaping both political action and policy outcomes.

Contents

1. Course Introduction, Overview, Approaches to the Study of Political Economy
2. Analyzing Group Choice , Spatial Models of Majority Rule
3. Strategic Behavior and Majority Rule, Voting and Elections
4. Cooperation, Collective Action, Market Failures and Collective Action
5. Institutions and Their Impact, Legislatures
6. Bureaucracy, Delegation, and Principal Agent Theory
7. Courts and Judges
8. The Economics of Patronage, Seven Pillars of Good Governance
9. The Political Economy of Reforms, Pakistan - Dynamics of Elitist Model
10. Strategies for Self-preservation, A military Theocracy, Different Regimes
11. Economic Development, Ethnic conflict
12. The Role of State, Emerging Economic
13. Political Issues and their Linkages
14. Regionalism, Poverty
15. Governance

Recommended Texts

1. Shepsle, K.A. (2010). *Analyzing politics: Rationality, behavior, and institutions* (2nd ed.). New York: W. W. Norton & Company
2. Kardar, S. (1987). *The political economy of Pakistan*. London: Progressive Publishers

Suggested Readings

1. Nadeem, A. H. (2002). *Pakistan: The political economy of lawlessness*. Oxford: Oxford University Press
2. Hussain, I. (1999). *Pakistan: The economy of an elitist state.* Oxford: Oxford University Press

ECON-5111 **Managerial Economics** **3(3+0)**

Managerial Economics is a core course of BS Economics aimed at presenting and developing a microeconomic approach to business decisions. The concepts and problems are analyzed from the perspective of the firm and the managers' decisions. Emphasis is thus placed on the study of the production process and the analysis of interactions in markets, both with the customers and the rival firms. Economics is not a collection of facts to be written down and memorized. Economics is a way of thinking about the world and the world is always changing. Economists have developed a set of simple but widely applicable concepts and principles that are useful for understanding economic situations ranging from decisions that individuals make every day to decisions made by firms and governments in complex markets. The objective of this course is to help students learn and understand these concepts and principles and to apply them to a variety of economic situations. At the end of the course the students will be able to understand what is going on globally. This course, along with Entrepreneurship course, shall help students to establish their own business.

Contents

1. The Nature and Scope of Managerial Economics:
2. The Managerial decision making process, Theory of the firm. Profit maximization
3. Cost Minimization. Economic optimization. Economic relations of variables
4. The Incremental, concept in Economic Analysis. Demand. Supply and Equilibrium
5. Demand Analysis: Estimation and Forecasting, Demand. The Market Demand function
6. Elasticity, Price and income Elasticity of Demand with Managerial applications
7. Application of Regression Analysis: Demand estimation. Demand forecasting
8. Production function and Cost in Production: Production function estimation
9. Homogenous and Homothetic Production Function. Short run and long run cost curves
10. Learning curves and application. Cost-value-profit analysis. Cost estimation
11. Risk Analysis: The Expected Value, The S.D, The CV and C. E Criterion
12. The Maxima and Maximax Criterion. The Decision Tree and Joint Probabilities
13. Optimal decision Strategy. Limit Pricing and Preventing entry
14. Pricing Analysis and Decisions: Market Structures and Models. Perfect Competition
15. Monopoly. Monopolistic Competition. Oligopoly, Mark up pricing, Oligopoly Model
16. Monopolistic Competition. Price Discrimination, Monopsony and Price Product
17. Managerial Theories and Models of the Firm: Baumol's Theory of Sales Maximization
18. Marris's Model, Williamson's Model, and Behavioral Model by Cyert and March
19. Public Sector Production and Pricing of Goods: Public and Private Goods
20. Decreasing cost Industry, Externalities and Market Pricing issues, Rent seeking
21. Government Policy and International Trade, tariff and International pricing Techniques
22. Capital Budgeting and Investment: Pre-requisites of Capital Budgeting
23. Investment Criteria and Decisions. Cash flow, IRR, PI criterion. Optimal Capital Budget

Recommended Texts

1. Salvatore, D. (2015). *Managerial economics in a global economy* (8th ed.). Sydney: McGraw Hill.
2. Hirschey, M. (2016). *Managerial economics* (14th ed.). New York: Thomson South-Western

Suggested Readings

1. Koutsoyiannis, A. (1979). *Modern microeconomics* (2nd Ed), London: MacMillan.
2. Douglas, E. J. & Callan, S. (1992). *Managerial economics analysis and strategy* (4th ed.). Prentice Hall.

ECON-6112 **Micro Economics** **3(3+0)**

The course is designed for senior undergraduates. The objective is to confront them to advanced theoretical concepts and rigorous analysis with mathematical tools at hand. The students will understand the different types of demands and supply functions. Further, they will be able to understand different types of production functions. They will be able to understand different market structures. They will be able not only to learn about partial equilibrium models, but general equilibrium models also. They will also learn about game theory. They have to develop the analytical skills and to enhance the capabilities to solve somewhat complicated problems. As usual, the teacher is expected to draw examples from the surrounding world for exposition. The students may be given frequent assignments and exercises from the texts, which may be discussed by the teacher in the class after submission. The students should be motivated to use computer for solving the assignments.

Contents

1. The Theory of Consumption and Demand
2. Utility maximization and ordinary (Marshallian & Hicksian) demand functions.
3. The inter-relationship between ordinary and compensated demands,
4. Homogeneity of demand functions, Euler's relation and demand elasticities,
5. The Slutsky Equation: derivation and interpretation, Gross and net substitutes.
6. The Theory of Production and Supply
7. Different production functions, Properties of Cobb-Douglas and CES production functions,
8. Equilibrium of the firm in the short and long run, Demand for variable factors,
9. Elasticity of substitution, the role of technical progress.
10. Market Structures and Price Determination
11. Perfect competition, price and output determination,
12. The imperfect competition: Monopoly and Monopsony, Duopololy
13. Price Discrimination
14. Oligopoly, Monopolistic Competition,
15. Natural monopolies and the global markets, The multinational corporations,
16. Introduction to Game theory and strategic behaviour,
17. Market with uncertainty and imperfect information.
18. General Equilibrium and Welfare Economics
19. The concept of efficiency and welfare, Conditions of allocative efficiency.
20. Theorems of optimality/welfare.
21. Introduction to computation of general equilibrium in a 2x2x2 (two consumers, two sectors/ commodities, two factors) economy.

Recommended Texts

1. Walter, N. (2002). *Microeconomic theory: Basic principles and extensions* (8th ed.). Toronto: Thomson & Learning
2. Henderson, J. M. & Quandt, R. E. (1980). *Microeconomic theory: A mathematical approach* (3rd ed.). Sydney: McGraw Hill

Suggested Readings

1. Silberberg, E. & Suen, W. (2001). *The structure of economics: A mathematical analysis* (3rd ed.). London: McGraw Hill

2. Layard & Walters (1978). *Microeconomic theory*. Oxford: McGraw Hill

ECON-6113 Econometrics-I 3(3+0)

Econometrics is the application of statistical and mathematical theories to economics for the purpose of testing hypotheses and forecasting future trends. Econometrics takes economic models and tests them through statistical trials. The results are then compared and contrasted against real-life examples. Econometrics is interesting because it provides the tools to enable us to extract useful information about important economic policy issues from the available data. Econometrics is the use of statistical techniques to understand economic issues and test theories. Students who successfully complete Econometrics-II should be comfortable with basic statistics and probability. They should be able to use a statistical/econometric computer package to estimate an econometric model and be able to report the results of their work in a non-technical and literate manner. In particular a student who successfully completes this course will be able to estimate and interpret linear/ non-linear regression models and be able to distinguish between economic and statistical importance. They should be able to critique reported regression results in applied academic papers and interpret the results for someone who is not trained as an economist.

Contents

1. Introduction; Definition and scope
2. The Classical Linear Regression Model (CLRM)
3. Economic theory as the basis for empirical analysis
4. Application of Statistical techniques to Economic data
5. Ingredients of Econometric modeling: Specification, Estimation, Evaluation and Forecasting
6. Explaining Variables and parameters, Regressors and Regressand
7. Structure of the linear econometric model with two or more variables
8. Deviation from the Classical Assumptions
9. Multicollinearity
10. Heteroscedasticity
11. Autocorrelation
12. The Simultaneous Equations Models
13. Identification problems
14. Indirect Least Squares (ILS) method
15. Two Stages Least Squares (2SLS) methods

Recommended Texts

1. Koutsoyiannis, A. (2001). *Theory of econometrics* (2nd ed.). London: Palgrave Macmillan.
2. Gujrati, D. N. (2017). *Basic econometrics* (5th ed.) Moscow: McGraw Hill Company.

Suggested Readings

1. Dougherty, C. (2016). *Introduction to econometrics* (4th ed.). Oxford: Oxford University Press.
2. Kmenta, J. (1997). *Elements of econometrics* (2nd ed.). Oxford: University of Michigan Press.

ECON-6114 Mathematical Economics-I 3 (3+0)

The course is designed to enable the students to use mathematical tools in clarifying their economic concepts and solving problems. This is because economic analysis requires extensive use of mathematics in the present-day world of complexity. Mere logical reasoning and diagrammatic approach are perhaps not sufficient. This is true for positive economics in particular. As such, the students of economics have to learn and apply mathematics alongside their theoretical underpinnings. It gives students skills for implementation of the mathematical knowledge and expertise to the problems of economics. Its prerequisites are both the knowledge of the single variable calculus and the foundations of linear algebra including operations on matrices and the general theory of systems of simultaneous equations. The course covers several variable calculus, both constrained and unconstrained optimization. The course is aimed at teaching students to master comparative statics problems, optimization problems using the acquired mathematical tools. The deep knowledge of math concepts helps to understand real-life situations.

Contents

1. The nature of mathematical economics
2. The use of mathematical tools in social sciences
3. Types of graphs of functions and importance and limitations of mathematical models
4. Equation of a straight line
5. Partial and general equilibrium analysis
6. Calculation of elasticity's at equilibrium
7. The effect of an excise tax on market equilibrium
8. National income determination via matrix approach
9. Types of matrices and determinant & its properties
10. Gaussian method, cramer's rule and inverse method
11. Differentiation, rules of differentiation and their economic application
12. Partial differentiation & its rules and total differentials & total derivatives
13. Hessian and jacobian determinants and free and constrained optimization
14. Comparative static analysis
15. Homogenous, cobb douglas and ces production function
16. Linear programming
17. Graphical and simplex method
18. Duality theorems

Recommended Texts

1. Chiang, A. C. & Wainwright, K. (2005). *Fundamental methods of mathematical economics* (4th ed.). New York: McGraw Hill.
2. Dowling, E. (2011). *Schaum's outline of introduction to mathematical economics* (3rd ed.). New York: McGraw-Hill Education.

Suggested Readings

1. Alvey, G. C. & Nelson, M. J. (2007). *Essentials of mathematics with business applications* (6th ed.). New York: McGraw-Hill Education.
2. Budnick, F. S. (1993). *Applied mathematics for business, economics and social sciences* (4th ed.). New York: McGraw-Hill Book Company.

ECON-6115 Environmental Economics 3(3+0)

The main aims of this course are to identify and analyze the key issues confronting economies and economists in attempting to reconcile economic growth with environmental and ecological constraints. The aim also includes demonstration of the use of economic theory in analyzing contemporary environmental issues and in the formulation of policy. The course covers market failure, the economics of pollution control, market-based instruments, environmental cost-benefit analysis, environmental valuation, the environment and the economy, global environmental problems, and other topics. Students will apply economic approaches to analyze policy options to better manage the environment at both the local and global levels. This field of economics helps users design appropriate environmental policies and analyze the effects and merits of existing or proposed policies. The main objective of environmental economics is to maintain a balance between economic development and environmental quality. In order to achieve it, environmental economists have to explore the various socio-economic possibilities to reduce pollution and uplift the standard of living of the people.

Contents

1. Introduction and Awareness
2. Analytical Tools: An Environment
3. The Economics of Environmental Quality
4. General Models of Pollution Control. Emission Reduction and Equi. Marginal Principle.
5. Valuing the Environment and Benefit Cost Analysis
6. Benefit Cost analysis: Costs: The value of life, health, safety and risk.
7. Pigovian Analysis, the Coase Theorem.
8. Economic Development and the Environment
9. General considerations, Environmental degradation in developing economies.
10. Economy and Environment. The Pollution Haven hypothesis. The role of developed countries.
11. Emergence of Environment Issue in Pakistan, Industrial Waste, Urban Waste and Agricultural Issues.
12. Air pollution in Pakistan. Public Policies and Awareness to Control Pollution.
13. Environmental Policy and Strategy in Pakistan.\
14. Ozone Depletion, the Economics of Global Warming. Keyoto – Protocol and Issues.
15. International Environmental Agreements. UN and Environmental Cooperation.
16. International trade and the Environment. Impacts of Awareness Policy.

Recommended Texts

1. Field, B. C. & Field, M. K. (2016). *Environmental economics: An introduction* (7th ed.). London: McGraw Hill
2. Hussen, A. (2003). *Principles of environmental economics and sustainability* (4th ed.). Moscow: Routledge Publishers

Suggested Readings

1. Baker, S. (2003). *Environmental economics*. New Dehli: Dominant Publisher and Distributors, India
2. Tientenberg, T. (2012). *Environmental & natural resource economics.* Toronto: Pearson Education Edition

ECON-6116 **Energy Economics** **3(3+0)**

This course is based on the study of relationship between economics and core concepts of energy sector (production, consumption, demand, and supply of energy). It also focuses on dealing with the pricing, conversion, and development of sustainable renewable and non-renewable energy sources. With the passage of time, the increase in usage of energy sources is causing threat to availability of these resources to future generations which is widely ignored by policy makers. Moreover, the concept of energy has developed far beyond the sustainability idea in recent years as the global environmental quality has been adversely affected due to increase dependence on energy resources. These adverse effects of energy consumption on environment are considered potentially irreversible. Therefore, the purpose of this course is to provide students with an opportunity to study and develop a broader understanding of concepts of sustainability of energy sources and improvement of environmental quality.

Contents

1. Overview and Fundamental Concepts
2. Oil Resources and Economic Issues
3. Overview of Energy Economics and Global Energy Sustainability
4. Clean Energy Supply from Non-Conventional Resources
5. Energy Supply from Non-Renewable Fossil Fuel Resources
6. Energy Conversion Supply by Electric Utility Industries
7. Sustainable Energy Policy

Recommended Texts

1. Bhattacharya, S. C. (2011). *Energy economics concepts, issues, markets and governance*. Sydney: Springer-Verlag London Limited
2. Jaccard, M. (2005). *Sustainable fossil fuels: The unusual suspects in quest for clean and enduring energy*. Cambridge: Cambridge University Press

Suggested Readings

1. Griffin, J. M. & Steel, H. B. (1985). *Energy economics and policy*. Oxford: Academic Press
2. Tientenberg, T. (2012). *Environmental & natural resource economics.* Boston: Pearson Education Edition

ECON-6117 Poverty and Income Distribution 3(3+0)

The aim of this course is to introduce students to the subject of poverty and inequality. The emphasis will be on problems in the modern contemporary economy, but the topic will also be approached from an historical perspective, taking a longer term view of the distribution of income in human societies. In particular, we will examine why some individuals and groups have less access to resources and income than others. Students will learn the fundamental concepts, theories and methodologies that are used by economists to measure and understand questions related to the distribution of income. By the end of the course, students should expect to not only have a greater knowledge of the forces determining the extent of poverty and the distribution of income, but to have also gained some understanding of the methods used by economists and policy-makers to deal with them. They will also come to know the pro-poor growth theories.

Contents

1. Absolute Poverty
2. Relative Poverty
3. Multi-dimensional Poverty
4. Determinants of poverty/ Inequality
5. Some important aspects i.e. Sen's approach, Vulnerability etc.
6. Choice of poverty line
7. Axioms of Poverty
8. Measurement of poverty
9. Headcount Index
10. Poverty Gap Index
11. Squared Poverty Gap
12. Sen.'s Index
13. The Sen-Shorrocks-Thon Index,
14. FGT class of measures, multidimensional poverty index
15. Measurement and decomposition of income inequality
16. Decile Dispersion Ratio
17. Gini Coefficient of Inequality
18. Generalized Entropy Measures,
19. Atkinson's Inequality Measures
20. Comparison of inequality measures
21. Poverty and inequality reduction strategies
22. Pro-poor growth
23. Poverty \Inequality profile of Pakistan

Recommended Texts

1. Jonathan, H. & Shahidur, K. (2009). *Handbook on poverty and inequality*. London: W.B. Training Series
2. Sachs, J. (2005). *End of poverty: Economic possibilities for our time*. New York: Penguin

Suggested Readings

1. Fields, G. S. (2001). *Distribution and development.* Cambridge, MA: MIT Press.
2. Foster, J. E., Greer, J. & Thorbecke, E. (1984). *A class of decomposable poverty measures*. Econometrica. 52(3): 761-66.

ECON-6118 **Macro Economics** **3(3+0)**

This course provides a comprehensive introduction to Macroeconomics; the objective is to enhance their analytical skills and to clarify further their macroeconomic concepts with quantitative tools at hand. They must have a strong theoretical foundation so as to understand the real problems of the economy with particular emphasis on inflation, unemployment, instability, deficit and debt etc. to which the developing countries are confronted at present. This course provides a comprehensive introduction to Open Economy and Macroeconomic Stabilization, IS-LM: Goods and Money Market, Labor Market, Price expectation and Unemployment, Macroeconomic Policy Debate, Government debt and Budget deficit, Economic fluctuation and its sources, Long-Term Growth, and Full Employment. Furthermore, this course presents an in depth analysis of modern macroeconomic theory. The course provides an advanced overview of the field as well as a rigorous analysis of the field's foundations. Students who do not necessarily intend to specialise in macroeconomics are thereby exposed to the most up to date theories, while those students who plan to pursue higher research in macro-economics are well equipped with the latest techniques and know how.

Contents

1. Macroeconomics: The Classical Framework
2. The Quantity theory of money, The Marginal Productivity theory
3. A critical appraisal of the Classical model, Dichotomy in the economy
4. The Keynesian framework, liquidity preference function
5. IS-LM model and its mathematical derivation, interaction of the goods and money markets
6. The multiplier effects of fiscal and monetary actions, derivation of aggregate demand function.
7. The Supply Side Economics, Demand for and Supply of Labour
8. The wage rate determination, Rigidity versus flexibility of nominal wage rate
9. Derivation of Aggregate Supply under the Classical and Keynesian assumptions, the supply side disturbances leading to stagflation.
10. The Open Economy Macroeconomics, Balance of Payments: Current and Capital account
11. The IS-LM-FB model due to Mundell and Fleming, The case of a small open economy
12. The relative effectiveness of Fiscal and Monetary policies under the Fixed and Floating exchange rate
13. Macroeconomic Policy Debate

Recommended Texts

1. Glahe, F. R. (1973). *Macroeconomics*: *Theory and policy* (1st ed.). California: Harcourt Brace Jovanovich Inc.
2. Froyen, R. T. (2000). *Macroeconomics: Theories and policies* (10th ed.). New York: Pearson.

Suggested Readings

1. Mankiw, G. N. (2018). *Macroeconomics* (4th ed.). New York: Worth Publishers
2. Branson, W. H. & Litvack, J. M. (2005). *Macroeconomics: Theory and policy* (3rd ed.). New Jersey: Princeton University.

ECON-6119 Econometrics-II 3(3+0)

The course "Econometrics-II" focuses on the estimation, inference and identification of regression models. Particular attention is paid to the econometric theory, to the application of econometrics to real-world problems, and to the interpretation of the estimation results. The first part of the course (Econometrics-I) includes linear regressions and models with limited dependent data. Topics on Gauss-Markov theorem, endogeneity, instrumental variables, and maximum likelihood estimation will be covered. It also focuses on issues in system of equations; time series models; panel data models; nonparametric and semi-parametric models; Bayesian estimation. The course is designed for senior undergraduates more inclined towards quantitative studies. The objective is to enable the students dive deep into complex problems of the real world economic life. They have to understand data problems, to have good grasp over advanced estimation techniques and to have the capability of inferring results accurately. The students have to learn certain computer packages like SPSS, E-views and Strata besides Excel. The students are required to devote at least one hour per week to computer laboratory. They have to develop the capacity to read and understand research papers to understand estimation techniques and their interpretations.

Contents

1. Overview of the Classical Regression Model
2. The Least-Squares estimation procedure in matrix notation
3. Hypothesis testing using matrix approach
4. Time as an explanatory variable, Regression on Dummy variables
5. E-Views and Microfit application
6. Estimation with endogenous lagged variables, Restricted Least Squares
7. The Generalized Least-Squares Model
8. The GLS model in matrix format
9. The Maximum Likelihood Estimators
10. Detection of the problem and consistent estimators
11. The Durbin-Watson statistics, Alternative estimation techniques.
12. Time Series Analysis
13. ARMA and ARIMA Models
14. Panel Data Analysis

Recommended Texts

1. Koutsoyiannis, A. (2001). *Theory of econometrics* (2nd ed.). New York: Palgrave Macmillan.
2. Gujrati, D. N. (2017). *Basic econometrics* (5th ed.) London: McGraw Hill Company.

Suggested Readings

1. Dougherty, C. (2016). *Introduction to econometrics* (4th ed.). Oxford: Oxford University Press.
2. Kmenta, J. (1997). *Elements of econometrics* (2nd ed.). Boston: University of Michigan Press.

ECON-6120 Mathematical Economics-II 3(3+0)

To prepare the students, not majoring in mathematics, with the essential tools of calculus to apply the concepts and the techniques in the field of economics. To satisfy the requirements of this course, students will need to acquire a thorough understanding of the mathematical concepts introduced during the semester and will need to demonstrate that they can apply the corresponding tools and ideas to unfamiliar problems. The objective is to confront the students to advanced mathematical techniques to enable them to handle economics models, interpret the results and solve complex problems. The main topics to be covered are difference and differential equations and nonlinear programming. By the end of this course, students will be expected to know the minimal set of mathematical tools which are used in economic models: integration, differential and difference equations, methods of phase diagrams, dynamic optimization in discrete and continuous time and non-linear programming including Kuhn-Tucker conditions.

Contents

1. Complex number and circular functions
2. Integral calculus, rules of integrations and operation
3. Definite integrals and improper integral
4. Economic applications of integrals
5. The Domar growth model
6. First-order linear and non-linear differential equations
7. Types of time paths and the dynamic stability of equilibrium
8. Market models and solow growth model
9. The solution of second-order linear differential equations and its dynamic stability
10. The interaction of inflation and unemployment, convergence and the routh theorem
11. First-order linear and non-linear difference equations its solution and verification of results
12. Conditions for dynamic stability of equilibrium
13. The cobweb model, the market model with inventory and model with the price ceiling
14. the qualitative/graphic approach and phase diagrams
15. Second-order linear difference equations, the convergence and divergence of the time paths
16. The multiplier-acceleration interaction model
17. Inflation-unemployment model in discrete time
18. Convergence and the schur's theorem
19. The solution of simultaneous difference equations
20. Non-linear programming and non-linearity's in economics
21. The kuhn-tucker sufficiency theorem and the arrow-enthoven sufficiency theorem
22. Quasi-concave programming

Recommended Texts

1. Chiang, A. C. & Wainwright, K. (2005). *Fundamental methods of mathematical economics* (4th ed.). New York: McGraw Hill.
2. Dowling, E. (2011). *Schaum's outline of introduction to mathematical economics* (3rd ed.). New York: McGraw-Hill Education.

Suggested Readings

1. Alvey, G. C. & Nelson, M. J. (2007). *Essentials of mathematics with business applications* (6th ed.). New York: McGraw-Hill Education.
2. Budnick , F. S. (1993). *Applied mathematics for business, economics and social sciences* (4th ed.). New York: McGraw-Hill Book Company.

ECON-5110 General Equilibrium and Welfare Economics 3(3+0)

General equilibrium and welfare economics helps to compare the different polices and to choose the most appropriate one applying different kinds of criteria. It also encompasses the analysis of the data and making strategic decisions in-line with the objectives of the govt. These decisions are mainly related to the economic stability, financing and investments. This course helps to learn the tools and techniques which govt. uses while planning for the future. The students would go through in depth practice of issues and discussions and real life examples concerning different economic policies. The students will come to know about measurement techniques of consumer welfare and able to apply in practical life. They also know about the first best and second best states and which should be chosen by applying different criteria. They will learn about not only partial equilibrium, but general equilibrium analysis also. They will also learn about the technical and allocative efficiencies and will be able to apply them in their practical life.

Contents

1. The nature of general equilibrium analysis,
2. General Equilibrium Theory: Multi market equilibrium in a competitive setting;
3. Walras Law; Existence of equilibrium;
4. Stability of equilibrium; Money in a general equilibrium setting.
5. Technical and allocative efficiency and case of exchange economy.
6. Linear programming technique to general equilibrium theory (Activity Analysis).
7. The Von-Neuma Model of a expanding economy,
8. The input-out Model.
9. Pareto principle, optional, production and resource allocation
10. Efficiency of Perfect Competition.
11. Measurement of Changes in Welfare: Consumer Surplus,
12. Compensation Principle.
13. The Theory of Social Choice: Social welfare function,
14. Arrow's Impossibility Theorem, Marginal cost pricing, Joint Products,
15. Externalities, Income distribution and compensation principles.
16. Theory of second best and its application in Public Sector and international trade.

Recommended Texts

1. Mas-Colell, A., Whinston, M. D. & Green, J. R. (1995). *Microeconomics theory*. Oxford University Press.
2. Just, R. E., Hueth, D. L. & Schmitz, A. (2004). *Welfare economics of public policy: A practical approach to project and policy evaluation*. Edward Elgar UK

Suggested Readings

1. Jehle, G.A. & Reny, P. J. (2001). *Advanced microeconomics theory* (2nd ed.). Addison Wesley,
2. Varian, H. (1992). *Microeconomics analysis* (3rd ed.). Norton
3. Arrow, K. J. & Hahn, F. (1971). *General competitive analysis*. Holden-Day, San Francisco,

ECON-6122 **Monetary Economics** **3 (3+0)**

Monetary economics is the branch of economics that studies the different competing theories of money: it provides a framework for analyzing money and considers its functions (such as medium of exchange, store of value and unit of account), and it considers how money, for example fiat currency, can gain acceptance purely because of its convenience as a public good. The discipline has historically prefigured, and remains integrally linked to, macroeconomics. This branch also examines the effects of monetary systems, including regulation of money and associated financial institutions and international aspects. Monetary Economics aim is to gain insight into more recent approaches to monetary policy, and to developments in understanding and applying such policy. It also includes role of monetary policy and central bank in the economy. The main objectives of the course will be to understand the role of money in the economy as well as to understand some models where inflation shows persistence, the theory of monetary policy, monetary policy operating procedures and the central banking mechanisms.

Contents

1. Introduction and Development of Monetary Mechanism: Evolution of Money, Payment System
2. Definition of Money Function of Money & Measurement of Money
3. Demand for Money & Supply of Money. Definitions of Money, M1, M2, M3, L etc.
4. Role of Money in the Economy: Debate on neutrality and non-neutrality of Money
5. Money in Aggregate Demand & Aggregate Supply Analysis. Role of Money in the IS-LM model
6. Monetarist views of Equilibrium Output, Employment and Prices
7. Demand for Money: Quantity Theory of Money, Friedman's Restatement of QTM
8. The Money Supply Process: Determinants of the Money Supply: Exogenous and Endogenous
9. Understanding Movements in the Monetary Base, Money Multiplier, and Velocity of Money
10. The Conduct of Monetary Policy: Central Bank, Structure and Functions of Central Bank
11. Goals, Targets and Tools of Monetary Policy
12. Real & Nominal Interest Rates, Theories of interest rate
13. Money and Inflation: What is Inflation & Causes of Inflation?
14. Demand – pull Inflation, Cost – push Inflation, Stagflation & Hyperinflation
15. Inflation as a Monetary Phenomenon. The Philips Curve and Accelerating Inflation
16. Inflation in Pakistan: Sources and Managing Policies
17. Monetary Policy in International Framework

Recommended Texts

1. Mishkin, F. S. (2001). *The economics of money, banking & financial markets* (1st ed.). New York: Pearson.
2. Miller, R. L. & David, V. H. (2001). *Money, banking & financial markets* (1st ed.). Singapore: South Western.

Suggested Readings

1. Vanish, K. (2001). *Monetary theory* (1st ed.). New Delhi: Vikas Publishing House.
2. Mishkin, F. S. (2000). *Financial markets and money* (1st ed.). London: Harper & Row Publisher.

ECON-6123 International Trade Theory 3(3+0)

This is a one-semester course in international trade theory and trade policy. This course is designed to provide an explanation of the patterns of world production and trade and also to determine whether international trade is beneficial or not. This course will provide a comprehensive introduction to international trade and finance, focusing in particular on trade theories explaining why does trade take place; its history and key concepts, major theoretical frameworks, main factors, and agents. The course will analyze and compare instruments of trade policy and evaluate their impact on domestic and international welfare. Finally, the course will provide *students with a thorough grounding of* the world trading system, including the World Trade Organization (WTO) and international trade agreements. This course thus provides students with the foundation in international trade theory and enables them to apply this theory to the study of issues in trade theory, globalization, economic integration, and trade policy. This course is destined to serve both as a stand-alone course in international trade theory and policy and as a foundation for further studies of advanced international trade theory and international economics.

Contents

1. Introduction to International Trade: Basis, Gains
2. Introduction to International Trade: Pattern of Trade
3. The Law of Comparative Advantage.
4. The Standard Theory of International Trade
5. Demand and Supply, Offer Curves
6. Terms of Trade
7. Factor endowment and Heckscher–Ohlin theory
8. The Heckscher–Ohlin theory and Extensions
9. Economies of Scale and International Trade
10. Imperfect Competition and International Trade
11. Growth and Trade: Growth of Factor of Productions
12. Growth and Trade: Technical Progress
13. Trade Restrictions: Tariffs
14. Trade Restrictions: Nontariff Trade Barriers
15. Trade Restrictions: New Protectionism
16. Economic Integration: Customs Unions
17. Economic Integration: Free Trade Areas
18. Major Contemporary International Economic Issues

Recommended Texts

1. Salvatore, D. (2016). *International economics* (11th ed.). New York: John Wiley & Sons.
2. Krugman, P. R., Obstfeld, M. & Melitz, M. J. (2018). *International trade* (11th ed.). London: Pearson

Suggested Readings

1. Sodersten, B. & Reed, G. (1994). *International economics*. London: Palgrave Macmillan.
2. Pugel, T. A. (2016). *International economics*. Toronto: McGraw-Hill Education

ECON- 6124 Research Methodology 3(3+0)

This course aims to develop students' knowledge and understanding of the role and conduct of quantitative and qualitative research methods in economics. Intellectual and methodological debates will be discussed to assist students to develop informed opinions and a critical appreciation for other's research. The imperative for ethical research practice will be presented. The course equips students with the skills to review and conduct methodologically sound research as a part of their professional work. Students develop the skills to recognise and reflect on the strengths and limitations of different research methodologies, understand the links between theory and practice, critically assess research, and address ethical and practical issues. The course takes a step-by-step approach to the design and implementation of quantitative and qualitative techniques including case study and precedent studies, surveys, interviews, focus groups, participant observation, textual and media analysis. How to manage and analyse data (including computer-assisted), and how to write up and present findings are core components of this course. Students will be equipped with the knowledge and ability to undertake original research projects and develop a set of transferable workplace skills.

Contents

1. Importance of research methodologies
2. Research techniques in social sciences and their limitations.
3. Empirical and theoretical research and stages of the research process.
4. Identification of problem/issue, data, theory and estimation related problems.
5. Thinking, field research designs; the process of field research, exploratory research, casual inference.
6. Methods of communication in survey and vision survey and communication techniques
7. Art of asking questions and getting quality information and preparation of research proposal questionnaire
8. Sample design, nature of sampling, and measurement scales
9. The characteristics and development of measurement tools
10. The nature of scaling, response methods and scale construction.
11. Data collection methods and survey instruments and field procedures
12. The survey situations and the instrument development process
13. Questionnaire development, field procedures, mail, personal, and telephonic interviewing,
14. Observations, experimentation and simulations
15. Choice of research technique and experimental research design
16. The nature and use of secondary data
17. Sources, evaluation and types of secondary data and interpretations
18. Report writing; the questions and analysis of research proposal
19. Organization of research paper
20. the research report format, writing and editing
21. Executive summary and abstract of a report; conclusion and its basis
22. Evaluation of research work

Recommended Texts

1. Johnson, G. (1986). *Research methodology for economists: Philosophy and practice*. Sydney: McMillan.
2. Kumar, R. (2018). *Research methodology: A step-by-step guide for beginner* (5th ed.). Australia: SAGE.

Suggested Readings

1. Sekaran, U. & Bougie, R . (1992). *Research methods for business. A skill building approach* (7th ed.). Hoboken, New Jersey: John Willey & Sons.
2. Judd, C. M., Kidder, L. H. & Smith, E. R. (1991). *Research methods in social relations (*6th ed.). Austin: Holt, Rinehart & Winston.

ECON-6125 **Public Finance** **3(3+0)**

This course investigates the role of the public sector in the economic arena. We will attempt to explain why government intervention is needed, how it influences the behavior of the private sector and what the welfare effects of such influences are. We will also survey political economy, which regards actions of the public sector as determined by political processes. We will attempt to explain why government intervention is needed, how it influences the behaviour of the private sector and what the welfare effects of such influences are. We will also survey political economy, which regards actions of the public sector as determined by political processes. Topics covered may include welfare economics, market failures, and political economy. Moreover, this course will discuss and analyse the role of government and the rationale for and design of taxation and expenditure policy. By the end of the course students should have an appreciation of the principal forms of market failure that provide a justification for government intervention, be familiar with the main policy instruments used to mitigate market failures and the principles that guide their optimal use, but also understand the limitations of government intervention - for instance, understand how the presence of information problems both explains the forms that policy intervention take and imposes limits on what can be achieved by it.

Contents

1. Introduction and Role of Public Sector
2. The Economic Functions and Public Goods: Allocation of Resources,
3. Redistribution of Income and Wealth and Stabilization. Pricing Public Goods.
4. The Theory of Public Goods, Fiscal Principles and Concepts
5. Income Elasticity of Government Expenditures
6. Income Elasticity of a Tax Integral Fiscal Non-Neutrality
7. Tax Efforts and Tax Collection Performance in Pakistan
8. Public Revenue and Taxes, The Ability to pay and Economic benefits
9. Cannons of Taxation: The Optional Income Tax Approach
10. Tax Structure of Pakistan, Tax Reforms in Pakistan and their Impacts.
11. Tax Shifting and Incidence
12. Fiscal Policy: Public Expenditure and Budget
13. Inter - Government Fiscal Relations

Recommended Texts

1. David, N. H. (2016). *Public finance: A contemporary application of theory to policy* (11th ed.). London: Harcount Brace College Publishers.
2. Rosen & Harvey, S. (1999). *Public finance* (9th ed.). New York: Mc-Craw Hill.

Suggested Readings

1. Musgrave, R. A. & Musgravi, B. P. (1989). *Public finance in theory and practice* (5th ed.). London: McGraw Hill.
2. Stiglitz, E. (2000). *Economics of the public sector* (4th ed.). New York: W. W. Norton & Co.

ECON-6126 History of Economics Thoughts 3(3+0)

History of economics thoughts deals with different thinkers and theories in the subject that became political economy and economics, from the ancient world to the present day in the 21st Century. This field encompasses many disparate schools of economic thought. This course aims at introducing students to the understanding of how economic thought has developed over time acknowledging that alternative frameworks offering different conceptualizations of the individual economy society relationship coexist as of today by ways of surveying the major controversies over the definition of the objectives, scopes and methodologies of the discipline. The course intends to provide a systematic introduction into the history of economic thought. The development of economic analysis from its beginning through mercantilism through the classical school of political economy, Marx, Marginalism, institutional economics, and Keynes to modern macroeconomics and microeconomics. The objective of this course is to give an overview of how economic analysis has developed, and an introduction to the varied ways in which some of the great economists of the past have gone about studying how the economy functions.

Contents

1. Introduction, Importance and approaches to study the subject.
2. Ancient and Medevial thoughts.
3. Nature's circular flow and Mercantalism.
4. Classical school of thoughts.
5. Contributions of Ricardo, Benthem and Malthus.
6. Adam smith, Biography, contribution and theories.
7. Labor theory of value, rent and profits.
8. Socialism, English socialists.
9. Socialism before Marx, class struggles, contributions of Marx.
10. Revival of Classical school of thought, Austrian school of thought and Marginal revolution.
11. Overview of Islamic thoughts, Contributions of Muslim scientists.
12. Keynesian and Post Keynesian School.
13. Great depression, Economic policies
14. Emergence of modern economic thoughts and Modern economic thoughts.
15. Comparison of post Keynesian and monetarist schools.
16. Supply side economics, Future of Economics.

Recommended Texts

1. Lekachman, R. (1959). *A history of economic ideas*. Boston: McGraw Hill
2. Blaug, M. (1997). *Economic theory in retrospect* (5th ed.). Cambridge: Cambridge University Press

Suggested Readings

1. Bhatnagar, K. P., Bahadur, S. & Mudgal, B. S. (1974). *A history of economic thought*. Kishore Publishing
2. Lokanathan, V. (2018). *A history of economic thought*. Chand Publishing.
3. Landreth, H. & Colander, D. C. (2002). *History of economic thought*. Houghton Mifflin College Division.

ECON-6127 Project Appraisal and Investment Analysis 3(3+0)

The ultimate outcome of a public or a private investment is determined by the financial, economic, managerial and political parameters associated with the project. The purpose of project appraisal and investment analysis is to assess the viability of project, programme or portfolio decisions and the value they generate. In the context of a business case, the primary objective of investment appraisal is to place a value on benefits so that the costs are justified. A project evaluation that closely links the financial and economic analysis, and in turn identifies the distribution of benefits and costs over the various interest groups, will be far more likely to identify fatal flaws in the design of a project that will an appraisal that segments the analysis and does not address the interdependencies of the components. The course is designed to ex-ante examination of a proposal project to determine whether the same should be implemented or not whereas project evaluation is an ex-post assessment of the impact of accomplished project and it ensures students reach a proficient level of professional applicability.

Contents

1. The role, limitations, aspects of Investment and Project Appraisal
2. Project VS Plans , Project Cycle
3. Cost Benefits Analysis for Project, Categories of Costs and Benefits
4. Methods of Project Appraisal, Market price and financial analysis (Market Value ratios)
5. Concept of Capitalization, Capital Market VS Money Market
6. Types of Securities
7. Non-Banking Financial Institution, Development Financing , Assets Structure
8. Financial Intermediaries, Capital Budgeting Technique
9. Speculation and Inter-relationship of financial and real variables in the economy
10. Measuring Market Value and Market Value Added, The Problems with Finding and Validating Market Problems, Changes in relative price and inflation
11. Shadow Prices: Meaning, Need, Limitations and Uses, Shadow Prices and economic analysis
12. Trade Policies with Market Imperfections and Distortions Market
13. Undiscounted and Discounted measures of project worth
14. Comparative assessment of discounted measures, Investment Ratio
15. Social VS Economic Benefits
16. Sensitivity analysis, the time value of money, Defining risk and return,
17. Methods of analysis, area and elements of analysis, Measuring of Cost Effectiveness

Recommended Texts

1. Soimik, B. (2003). *International investment*. New York: Addison Wesley.
2. Donald, E. & Fischer, J. (1995). *Security analysis and portfolio management* (6th ed.). Prentice Hall, India

Suggested Readings

1. Sharpe , W. F. & Gorden, J. (1999). *Investment* (6th ed.). Prentice Hall, UK
2. Hussain, C. M. (1991). *Project appraisal, monitoring and evaluation process with special reference to pakistan* (2nd ed.). Royal Book Co. Pakistan

ECON-6128 **Applied Economics** **3(3+0)**

It is a special applied course, which covers different aspects of economic theory and its application. The course is offered in the last semester. In this course, estimation of econometric models and applied economic research is taught. For this purpose, students are required to apply the knowledge and theory to produce a research paper. Completion of this course provides confidence among the students to embark upon research on important national and international economic issues. Moreover, objective of this course is to provide the basic knowledge of econometrics that is essential equipment for any serious economist or social scientist, to a level where the participant would be competent to continue with the study of the subject in a graduate programme. While the course is ambitious in terms of its coverage of technical topics, equal importance is attached to the development of an intuitive understanding of the material that will allow these skills to be utilised effectively and creatively, and to give participants the foundation for understanding specialized applications through self-study with confidence when needed.

Contents

1. Introduction to Windows 2000 and Ms-Word
2. Operating System, Performance Management, Desktop Management, Printer Management,
3. Internet Explorer, E-mail. MS-Word, using Advanced Formatting Features,
4. Sharing data with Word, Word Macros, Composing Models and Mathematical Equations.
5. PowerPoint and MS-Access (XP)
6. Database Concepts, File Linkages, Data Retrieval, Data Editing / Updating. Data Transferring.
7. Menu, Tool Bars, File Linkages, Dialog Boxes. Data Analysis, Analysis of Variance. Simple
8. Use of Computer, SPSS, E-View to Estimate Production Functions.
9. Computer Applications: Demand – Supply & Equilibrium
10. Model Building and Estimation
11. Econometric Analysis and Computer Applications
12. Regression Functions. Estimation with Qualitative Variables
13. Confidence Interval and Hypothesis Testing. Estimation and Improving Model Estimates
14. Autocorrelation, Estimation of Simultaneous Equations
15. Estimation of VAR and ARIMA Models.

Recommended Texts

1. Keil, M. W. (2000). *E-view manual*. Princeton: Princeton University Press.
2. Gimi, C., Annette, M. & Karl, B. (2001). *Mastering microsoft office xp premium*. B.P.B., Publishers, New Dehli.

Suggested Readings

1. Robertson, D. F. (2000). *Computer applications and programming*. Har Brace Jovanovich Inc. USA SPSS-Manual.
2. Asteriou, D. (2007). *Applied econometrics: A modern approach using e-views and microfit* (2nd ed.). London: Palgrave Macmillan.

ECON-6129 Islamic Economics 3(3+0)

The course is designed for senior students having gone through some basic courses in economic theory and development economics. The objective is to let them realize that Islam provides full guidance to its followers in all spheres of social life. The students have to understand the Islamic injunctions ordained for economic behaviour, both in the individual as well as collective capacity. They have to compare the prevailing system with that devised by Islam, to capture the socio-economic problems faced by the present day Muslim countries and to find ways and means to reconstruct the system in vogue according to Islamic guidelines so as to achieve greater stability, equity in distribution and reduction in poverty as the primary goals of all developing nations.

Contents

1. Brief Introduction of the Basic Values of Islam; Piety (Taqva), The lawful and unlawful (Halal and Haram), Trusteeship, Accountability, Justice, Benevolence, Equality, Brotherhood and Cooperation.
2. Contribution of prominent scholars towards development of Islamic Economic Thought .
3. Moderation in consumption, restricted set of preferences, altruism and charitable donations.
4. Business Ethics in production and marketing, Permissible and prohibited activities.
5. The concept of fair trade, Resource allocation under Islamic environment.
6. Types of transactions (Bai Fasid, Bai Slalm, Bai Muajjal, Murabaha).
7. Consumption, saving and investment functions, Determinants of consumption and Investment functions in Islamic environment.
8. The concept of Riba (interest): its interpretation and implications, Justification of interest.
9. Sources of revenue and heads of expenditure of an Islamic State, the scope for taxation.
10. Salient features of an Islamic Economic System: Objectives, Economic Freedom, Equity and Efficiency Social and distributive justice.
11. The institution of Zakah and Bait-ul-Mal, Wider circulation of wealth, Fulfillment of basic needs, institution of Interest and its inconsistency, Rationale for prohibition of interest.
12. Role of the State in an Islamic system, Protection of faith and Islamic values, Economic and social welfare, Alleviation of poverty and reducing of inequalities
13. Islamization of the banking and financial system: Reports of the CII and implementation issues.

Recommended Texts

1. Mannan, M. A. (1986). *Islamic economics theory and practice: A comparative study* (1st ed.). Cambridge: Hodder and Stoughton.
2. Askari, H., Iqbal, Z. & Mirakhor, A. (2015). *Introduction to islamic economics: Theory and policy* (1st ed.). Hoboken: Wiley and Sons.

Suggested Readings

1. Khan, F. M. (1984). *Macro consumption function in an islamic economic framework* (1st ed.). Washington DC: ICRIE, KAAU, KSA.
2. Dar, A. H., & Akram, M. (1990). *Islamic economics*, (1st ed.). Lahore: Ilmi kitab Khana.

ECON-6130 Issues of Pakistan Economy 3(3+0)

To introduce students about the key features of macroeconomic management, its process in Pakistan, and also critical issues facing macroeconomic management in Pakistan. The students will become well aware about the major issues of the economy. They will know about different types of the economy. They will be aware of specials problems of agriculture and industrial sectors and they will learn about their solution by applying this knowledge. The students will learn about different model of economic development. They will learn about the causes of unemployment and inflation as well as relationships between them. They will also know about the fiscal and monetary policies and their role to bring the economic stability in the economy. They will also know about public and external debt situations. They will learn about globalization and exports relationships in Pakistan. Further, they will get knowledge about Energy Crises and Rising Circular Debt. They will be able to apply this knowledge for their solutions.

Contents

1. National Income Accounts
2. GDP (Nominal and Real) and GNP
3. Measure of Inflation and Employment and GDP
4. Review of Alternative Models of Economic Management
5. Capitalism and Mixed Economy
6. Islamic Economics or Islamic Capitalism
7. Pakistan's Models of Economic Management
8. Background of Pakistani Economic Management: British Colonialism and Muslim Responses
9. Agricultural Sector's key issues and green revolution of Pakistan
10. Industrial Sector of Pakistan:
11. Process of industrialization from 1947-88
12. Industry after Structural Adjustment Program—1988-onwards
13. Key Issues in Pakistani Industry
14. Fiscal and Monetary Policies and Inflation in Pakistan
15. Fiscal Development
16. Monetary Policy Management and Inflation in Pakistan
17. Inflation and its Causes in Pakistan
18. Public and External Debts in Pakistan
19. Difference between the Debts
20. Concerns Regarding Pakistan's Fiscal Deficit
21. Structural Adjustment Program (SAP) and Pakistan
22. Globalization and Export of Development Thinking
23. Performance of Pakistan on Foreign Economic Front: BOP, Impacts of Trade Policy,
24. Social Sector in Pakistan: Health Sector and Education and its Issues, Poverty and Income Distribution
25. Recent Challenges Facing Pakistan Economy
26. Deteriorating law and order Situation
27. Energy Crises and Rising Circular Debt

Recommended Texts

1. Zaidi, A. (2015). *Issues in pakistan's economy* (3rd ed.). Oxford: Oxford University Press, Karachi
2. Hussain, I. (2007). *The economy of an elite state*. Oxford: Oxford University Press, Karachi

Suggested Readings

1. Hussain, I. (2009). *Pakistan's economy-1999/2000-2007/2008: An objective appraisal*. Business Review, Vol 4 (1): IBA, Karachi
2. Nadeem, A. H. (2002). *Pakistan: The political economy of lawlessness*. Oxford: Oxford University Press

ECON-6131 **Economics of Education** **3(3+0)**

The course aims to analyze the ways through which the education is organized and delivered to achieve economic growth in the most efficient ways. It helps to understand the efficacy of reforms pertaining to teacher salaries, student teacher ratio and charter schools. The course helps to develop an understanding of the importance of education in economic growth of a country. This course is intended to make students aware of the fact as to how education enhances labour productivity, earnings and distribution of income. It will further help the students to analyze the relation between education, inequality and poverty prevailing in the developing economies of the world. It will help students to get knowledge and improve confidence level all through the life. It will play a great role in students' career growth as well as in the personal growth. Education is the ultimate way to get victory over all the personal and social problems. The student will understand the role of education towards health and they will be able to apply their knowledge to make the society healthy.

Contents

1. Introduction: Defining economics and educational problem
2. Importance of Schooling
3. Econometrics overview,
4. Empirical research methods in the economics of education
5. Human Capital theory: The basic economic perspective on education
6. Education as a Signal: Signalling in the labour market
7. Returns to education in developing countries, with special reference to Pakistan,
8. Social rate of returns to education
9. Educational Production
10. Education and Health
11. Education and Inequality
12. Education and Poverty
13. School Accountability
14. School Standards
15. Technology and Education
16. Role of state in education
17. Educational privatization

Recommended Texts

1. Brewer, D. J. & McEwan, P. J. (2010). *Economics of education,* London: Elsevier
2. Levy, D. F. & Murnane, R. J. (2003). *The consequences of increasing the nation's supply of college graduates.* Policy Brief Written for the Gates Foundation

Suggested Readings

1. Clotfelter, C. T. & Helen F. L. (1996). *Recognizing and rewarding success in public schools*. New York: Brookings Institution Press.
2. Margret, C. (1971). *The economics of agriculture*. London: George Allen Unwin Ltd

ECONOMICS

ECON-6201 **Micro-Economics-I** **3(3+0)**

The course is designed for senior graduates. The objective is to confront them to advanced theoretical concepts and rigorous analysis with mathematical tools at hand. They have to develop analytical skills and to enhance the capabilities to solve somewhat complicated problems. As usual, the teacher is expected to draw examples from the surrounding world for exposition. Moreover, this course will discuss how and why we make economic decisions, and how our choices affect the economy. Think about each of the following units as a building block, where the concepts you learn will enable you to understand the material you discover in the next unit. By the end of this course, you will have a strong grasp on the major issues microeconomists face, including: consumer and producer behavior, the nature of supply and demand, the different kinds of markets and how they function, and the welfare outcomes of consumers and producers. We also explore how these formal principles and concepts apply to real-world issues. The scope and emphasis of this course goes beyond a general understanding of microeconomics to incorporate the core concepts of the overall field of economics.

Contents

1. Introduction to Microeconomics: Comparison with other Branches of Economics.
2. Theory of Consumer Behaviour and Demand Analysis
3. Market Demand & Elasticity
4. Production Functions
5. Cost of Production
6. Profit Maximization and Supply
7. Profit maximization and input demand. Cost minimization.
8. Relationship between cost and production curves.
9. The Theory of Market Behavior
10. Short run and long run equilibrium of the price taker firm:
11. Equilibrium of the industry: Mathematical Derivation of Equilibrium Prices and Quantity.
12. Monopoly: Monopoly & its Basics
13. The negatively sloping demand curve: Short run equilibrium, Long Run Equilibrium:
14. Price discrimination: Bi-lateral Monopoly
15. Multiplant Monopoly: Price Discrimination

Recommended Texts

1. Koutsoyiannis, A. (1975). *Modern microeconomics* (2nd ed.). London: Macmillan.
2. Nicholson, W. (2002). *Microeconomic theory: Basic principles and extensions* (11th ed.). Boston: Cengage Learning.

Suggested Readings

1. Silberberg, E. (2000). *The structure of economics: A mathematical analysis* (3rd ed.). London: McGraw Hill.
2. Henderson, J. M. & Quandt, R. E. (1990). *Microeconomic theory* (3rd ed.). NY: Melliwra H. A. Book Co.

ECON-6202 Macro Economics-I
3(3+0)

This course provides a comprehensive introduction to the development of macroeconomics, Aggregate Demand and Supply: Mathematical Solution and Equilibrium, Theories of Consumption: Keynesian Consumption Function. More specifically, the course introduces the MPS model of consumption, Derivation of IS-curve, Money Market, Derivation of LM Curve and its Slope, Stabilization Policy, Classical and Keynesian Models. The course is divided into two main parts: In the first part, we will master the basic concepts of macroeconomics, and then study the determination of national income, the workings of the monetary system, causes and consequences of inflation and the reasons behind unemployment. We will conclude the first part of our course by studying the international flows of capital and goods and how exchange rates are determined. The second part of the course will be largely devoted to understanding the process of long-run economic growth, which determines the trend over time in income per capita around which short-run fluctuations occur. In order to understand the theory behind optimizing agents/households in the models of economic growth and better appreciate how investment decisions by firms are made, during our study of the growth process, we will briefly review also the theories behind consumer behavior and investment.

Content

1. Introduction and National Income
2. Various Concepts and Approaches of Measurement of GNP
3. Income Determination and Factor Market
4. Aggregate Demand, Aggregate Supply, and its Equilibrium
5. Theories of Consumption and Their Implications
6. Keynesian Consumption Function.
7. Absolute income hypothesis and Kuznet's findings
8. The MPS Model of consumption.
9. Saving and Investment
10. Present Value Criteria for Investment /Marginal Efficiency of Investment (MEC).
11. Equilibrium in Real sector-IS Curve, its derivation, shifting
12. Money Market
13. LM Curve and Money Market Equilibrium.
14. IS-LM model and Determination of Equilibrium
15. Aggregate Demand and Supply and Stabilization Policy
16. Classical and Keynesian Models
17. Stabilization Policies
18. Philips curve (Short-run – Long-run Philip Curves. Long-run)
19. Vertical Aggregate Supply Curve.

Recommended Texts

1. Mankiw, G. N. (2018). *Macroeconomics* (4th ed.). New York: Worth Publishers
2. Branson, W. H. & Litvack, J. M. (2005). *Macroeconomics: Theory and policy* (3rd ed.). NJ: Princeton University.

Suggested Readings

1. Glahe, F. R. (1973). *Macroeconomics*: *Theory and policy* (1st ed.). New York: Harcourt Brace Jovanovich Inc.

2. Froyen, R. T. (2000). *Macroeconomics: Theories and policies* (10th ed.). New York: Pearson.

ECON-6203 Mathematical Economics-1

3(3+0)

The course is designed to enable the students use mathematical tools in clarifying their economic concepts and solving problems. This is because economic analysis requires extensive use of mathematics in the present day world of complexity. Mere logical reasoning and diagrammatic approach is perhaps not sufficient. Moreover, this course will use mathematical techniques that are widely used in Economics. We study the properties of sets, vector spaces, functions and equations and use them to describe economic environments. We employ mathematical techniques such as solving equations and finding fixed points, calculus and static and dynamic optimisation to analyse economic problems. Student will also learn to solve systems of equations using linear algebra. Time permitting, they will also be exposed to the principal methods of dynamic analysis of economic processes, and introductory concepts and results of integration and differential equations. A student should be able to find solutions of elementary differential equations and analyze their stability.

Contents

1. The Nature of Mathematical Economics
2. Ingredients of mathematical models
3. Equation of a straight line and its forms
4. Equilibrium Analysis in Economics
5. A linear and nonlinear market model
6. General Market Equilibrium
7. Equilibrium in a linear National Income Model.
8. Linear Models and Matrix Algebra
9. Laws of matrix operations and its types of matrices
10. Determinant & its properties
11. Solution of linear equations through Gaussian method
12. Cramer's rule and Inverse of a matrix method
13. Properties of inverse of a matrix
14. Use of matrix approach in market & national income models
15. Input-Output Analysis
16. Economic applications of derivative
17. Utility, profit & revenue maximization and minimization of cost
18. Partial & Total Differentiation
19. Economic Applications of Partial & Total Differentiation
20. Optimization
21. Linear Programming

Recommended Texts

1. Chiang, A. C. (2004). *Fundamental methods of mathematical economics* (4th ed.). New York: McGraw Hill Publishing Company.
2. Dowling, E. T. (2009). *Mathematics for economists, schaum's outline series* (3rd ed.). New York: McGraw Hill Publishing Company.

Suggested Readings

1. Silberberg, E. (2000). *The structure of economics: A mathematical analysis* (3rd ed.). New York: McGraw Hill.
2. Frank, B. (2011). *Applied mathematics for business, economics and social sciences* (4th ed.). New York: McGraw Hill Publishing Company.

ECON-6204 **Islamic Economics** **3(3+0)**

The objective of this course is to let students realize that Islam provides full guidance to its followers in all spheres of social life. The students have to understand the Islamic injunctions ordained for economic behavior, both in the individual as well as collective capacity. They have to compare the prevailing system with that devised by Islam, to capture the socio-economic problems faced by the present day Muslim countries and to find ways and means to reconstruct the system in vogue according to Islamic guidelines so as to achieve greater stability, equity in distribution and reduction in poverty as the primary goals of all developing nations. In this course students learn about the comparison of Islamic Economic system with Capitalism and Socialism, how Islamic firm and Islamic Consumer behave, difference between Halal and Haram in all kind of economic transactions, Importance of Zakat in Islam, and why interest is forbidden in Islam, different modes of financing in Islam and many more things.

Content

1. Introduction to Islamic Economics
2. Nature and importance of Islamic Economics
3. Brief Introduction of Basic Values of Islam
4. Islamic Economics Versus Secular Economy and Mixed Economic System
5. Islamic Economic System
6. Concept of equality and Efficiency
7. Welfare and Income Distribution
8. Comparison of Islamic Economic System with Capitalism and Socialism
9. The Modes of Financing in Islam
10. Modaraba and Mushark
11. Types of Bai. (Bai-Salam, Bai Muajjal, Morabaha)
12. Saving and Investment in Islam. Investment of Savings for Gains
13. Microeconomics and Macroeconomics in the Islamic Framework
14. Consumer Behavior in Islam. Utility, Moderation, optional Consumption Behavior
15. Market Structure - Monopoly and Competition, Resource Allocation in Islamic Environment and Cartels
16. Consumption, saving and Investment Functions in Islamic Environment
17. Demand and Supply of Money and Banking
18. Central Banking and Monetary Policy in Islamic Framework
19. Western Justification of interest. Islamic Concept of Riba, its Implications
20. Zakat, Social Justice in Islamic State
21. Distributive Role of Zakat and Social Justice. Zakat as a tool in Fiscal Policy
22. The Tax Policy of Islam. Nature and Scope of Fiscal Policy in Islamic State

Recommended Texts

1. Mannan, M. A. (1986). *Islamic economics theory and practice: A comparative study* (1st ed.). Cambridge: Hodder and Stoughton.
2. Askari, H., Iqbal, Z. & Mirakhor, A. (2015). *Introduction to islamic economics: Theory and policy* (1st ed.). Hoboken: Wiley and Sons.

Suggested Readings

1. Khan, F. M. (1984). *Macro consumption function in an islamic economic framework* (1st ed.). KSA: ICRIE.
2. Dar, A. H. & Akram, M. (1990). *Islamic economics* (1st ed.). Lahore: Ilmi kitab Khana.

ECON-6205 **Public Sector Economics**
3(3+0)

This course investigates the role of the public sector in the economic arena. We will attempt to explain why government intervention is needed, how it influences the behaviour of the private sector and what the welfare effects of such influences are. We will also survey political economy, which regards actions of the public sector as determined by political processes. Topics covered may include welfare economics, market failures, and political economy. Moreover, this course will discuss and analyse the role of government and the rationale for and design of taxation and expenditure policy. The topics to be covered include a review of basic microeconomics, welfare economics, cost-benefit analysis, public goods, externalities, public choice, public expenditure programs (including education, health, pensions and welfare payments), and taxation (including efficiency and equity issues, tax incidence, tax policy, and fiscal federalism). By the end of the course students should have an appreciation of the principal forms of market failure that provide a justification for government intervention, be familiar with the main policy instruments used to mitigate market failures and the principles that guide their optimal use, but also understand the limitations of government intervention - for instance, understand how the presence of information problems both explains the forms that policy intervention take and imposes limits on what can be achieved by it.

Contents

1. Introduction and Role of Public Sector
2. The Economic Functions and Public Goods: Allocation of Resources,
3. Redistribution of Income and Wealth and Stabilization. Pricing Public Goods.
4. The Theory of Public Goods
5. Fiscal Principles and Concepts
6. Income Elasticity of Government Expenditures
7. Income Elasticity of a Tax Integral Fiscal Non-Neutrality
8. Tax Efforts and Tax Collection Performance in Pakistan
9. Public Revenue and Taxes
10. The Economic Case for the Public Sector to Allocate Resources
11. Market Imperfections, Decreasing Costs of Production, Public Goods and Externalities.
12. The Theory of Public Goods
13. The Ability to pay and Economic benefits
14. Cannons of Taxation
15. The Optional Income Tax Approach
16. Tax Structure of Pakistan
17. Tax Reforms in Pakistan and their Impacts.
18. Tax Shifting and Incidence
19. Fiscal Policy: Public Expenditure and Budget
20. Inter - Government Fiscal Relations

Recommended Texts

1. David, N. H. (2016). *Public finance: A contemporary application of theory to policy* (11th ed.). Harcount Brace College Publishers.
2. Rosen & Harvey, S. (1999). *Public finance* (9th ed.). New York: Mc-Craw Hill.

Suggested Readings

1. Mutgrave, R. A. & Musgravi, B. P. (1989). *Public finance in theory and practice* (5th ed.). New York: McGraw Hill.
2. Stiglitz, E. (2000). *Economics of the public sector* (4th ed.). New York: W. W. Norton & Co.

ECON-6206 Micro Economics-II 3(3+0)

The course is designed for senior graduates. The objective is to confront them to advanced theoretical concepts and rigorous analysis with mathematical tools at hand. They have to develop analytical skills and to enhance the capabilities to solve somewhat complicated problems. As usual, the teacher is expected to draw examples from the surrounding world for exposition. Moreover, this course examines how economic decisions are made by households and firms, and how they interact to determine the quantities and prices of goods and the allocation of resources under different market structures. It also studies the equilibrium in presence of externalities/public goods and information asymmetry. The course examines microeconomic policy and the role of government in allocating resources. It will develop students' ability to apply the knowledge acquired to the analysis of specific economic cases, recognizing proper framework of analysis and constructing and analyzing adequate economic model within this framework.

Contents

1. The Theory of Market Behaviour
2. Monopolistic competitive firms
3. The concepts of industry and group
4. Mathematical Derivation of Price and Output Decision.
5. The imperfect competition: Monopoly and Monopsony, Duopoly and Oligopoly.
6. Game Theory
7. Description of a Game Theory
8. The Payoff Matrix of a Game
9. Nash Equilibrium and The Prisoner's Dilemma.
10. Application of Game Theory
11. Cournot Equilibrium
12. Bertrand Equilibrium
13. Quantity Leadership (Stackleberg Model)
14. Price Leadership
15. Collusion (Cartel) and Conjectural Variation
16. Pricing of Factors of Production
17. Short Run Demand for one Variable Input. Input price Elasticity
18. The Short run Demand Curve. Variable inputs. Market demand Curve for an Input
19. Market failure and public goods/social goods.
20. Externality analysis. Anti-trust Policy and regulations. Arrows impossibilities theorem
21. Uncertainty and risk Analysis
22. Measurement of risk aversion and Global Risk aversion
23. Arrow Pratt measure of relative risk

Recommended Texts

1. Koutsoyiannis, A. (1975). *Modern microeconomics* (2nd ed.). London, Macmillan.
2. Nicholson, W. (2002). *Microeconomic theory: Basic principles and extensions* (11th ed.). Boston: Cengage Learning.

Suggested Readings

1. Silberberg, E. (2000). *The structure of economics: A mathematical analysis* (3rd ed.). New York: McGraw Hill.
2. Henderson, J. M. & Quandt, R. E. (1990). *Microeconomic theory* (3rd ed.). NY: Melliwra H. A. Book Co.

ECON-6207 Macro Economics-II 3(3+0)

This course provides a comprehensive introduction to Open Economy and Macroeconomic Stabilization, IS-LM: Goods and Money Market, Labor Market, Price expectation and Unemployment, Macroeconomic Policy Debate, Government debt and Budget deficit, Economic fluctuation and its sources, Long-Term Growth, and Full Employment. Furthermore, this course presents an in depth analysis of modern macroeconomic theory. The course provides an advanced overview of the field as well as a rigorous analysis of the field's foundations. Students who do not necessarily intend to specialise in macroeconomics are thereby exposed to the most up to date theories, while those students who plan to pursue higher research in macro-economics are well equipped with the latest techniques and know how. Topics to be discussed typically include: Rational expectations, Dynamic analysis, Business cycles, Nominal rigidities, Monetary Policy. Such models include life-cycle models of intertemporal choice; the Neoclassical Growth Model; and both Real and New Keynesian models of business cycles. A sample of the questions that are addressed include the following. What accounts for differences in households' borrowing and saving? What factors matter for differences in wealth and economic growth across countries? How much would proposed public policies affect individuals and the Macroeconomy? What factors contribute to different business cycles in different countries?

Content

1. Open Economy and Macroeconomic Stabilization
2. Exchange Rates and their Determinants
3. Mundell-Fleming Model (MFM): Small open Economy with perfect Capital Mobility
4. IS-LM: Goods and Money Market
5. Floating Exchange Rate and Fiscal Policy
6. Labor Market, Price Expectation and Unemployment
7. Demand and Supply of Labour and Equilibrium in the Labour Market
8. The Sticky Wage Model, Insider-Outsider Models, and The Sticky Price Model
9. Macroeconomic Policy Debate
10. Ignorance, Expectations and the Lucas Critique
11. Conduct of Policy: Rule vs. Discretion, Distrust of Policymakers and Political Process
12. Monetarists vs Activists debate
13. The expectation augmented Phillips Curve
14. Government Debt and Budget Deficit
15. Measurement Problem: Inflation, Capital Assets, Business Cycle, etc.
16. What Determines Inflation Rate, Unemployment Rate, and Output Growth
17. Neo-Classical Model with Technical Progress
18. Kaldor Saving Function and Neoclassical Production Function.
19. Golden Rule and Optimal Growth Models
20. New Growth Theory / Endogenous Growth

Recommended Texts

1. Mankiw, G. N. (2018). *Macroeconomics* (4th ed.). NY: Worth Publishers
2. Branson, W. H. & Litvack, J. M. (2005). *Macroeconomics: Theory and policy* (3rd ed.). NJ: Princeton University.

Suggested Readings

1. Glahe, F. R. (1973). *Macroeconomics*: *Theory and policy* (1st ed.). California: Harcourt Brace Jovanovich Inc.
2. Froyen, R. T. (2000). *Macroeconomics: Theories and policies* (10th ed.). New York: Pearson.

ECON-6208 Statistics for Economists 3(3+0)

The aims of statistics are to provide methods of drawing valid inferences from samples. A major preoccupation of modern statistics is deciding what degree of reliance can reasonably be placed on particular samples. This course introduces these basic concepts. The foundational role of sampling, regression and hypothesis testing. In the mid-eighteenth-century statistics was the study of States - their populations, industries, natural advantages, and so forth. The course aims at familiarizing the students that Statistics is the science of learning from data to make an inference about a population of interest. Understand the concept of the sampling distribution of a statistic, and in particular describe the behavior of the sample mean. Understand the logic and application of hypothesis testing and interpret a set of descriptive statistics and understand the limitations of each measure. To apply the appropriate inferential statistical technique to situations of questions, interpret the results of an inferential test and understand the limitations of each procedure, and compute descriptive and inferential statistics using a calculator and computer.

Contents

1. Descriptive and inferential statistics
2. The four basic activities in statistics
3. Type of measurement scale
4. Types of data, errors, biased and unbiased
5. Presentation of Date and Measure of Central Tendency
6. The frequency distribution and its types
7. Graphic and diagrammatic representation
8. Types of Averages
9. Quintiles, Measure of Dispersion, Skewness and Kurtosis
10. Absolute and relative measure of dispersion
11. Standardized variable, Coefficient of skewness and Kurtosis
12. Probability and Probability Distribution
13. Discrete and continuous distributions: Binomial, Poisson and Normal Distribution
14. The central limit theorem
15. Sampling distributions for single mean and proportion
16. Difference of means and proportions
17. Simple Linear Regression and Correlation Analysis
18. Time series analysis and forecasting
19. Modeling cyclic behavior using box-Jenkins ARIMA processes
20. Regression analysis in forecasting
21. Delphi method and expert judgment

Recommended Texts

1. Lind, D. A., Marshal, W. G. & Mason, R. D. (2015). *Statistical techniques in business and economics* (15th ed.). Boston: McGraw Hill.
2. Chaudhry, S. M. & Kamal, S. (2010). *Introduction to statistical theory* (7th ed.). Lahore: Ilmi Kitab Khana.

Suggested Readings

1. Siegel, A. F. (2012). *Practical business statistics* (7th ed.). Boston: McGraw Hill.
2. Newbold, P. C., William, L. & Thorne, B. M. (2015). *Statistics for business and economics* (5th ed.). New Jersey: Prentice Hall.

ECON-6209 **Managerial Economics** **3(3+0)**

Managerial Economics aims at the application of economic models and rational choices to the optimal business decision making. The concepts and problems are analyzed from the perspective of the firm and the manager's decisions. Emphasis is thus placed on the study of the production process and the analysis of interactions in markets, both with the consumers and the rival firms. The course consists of fundamental principles of microeconomics, macro economics, econometrics and mathematical economics closely related to managerial decisions. Topics include an overview of managerial economics; demand and supply; costs of production and the organization of the firm; market structure and pricing and output decisions; game theory and pricing strategies; and the economics of information and the role of government in the marketplace. The course focuses on profit maximization by firms and market equilibrium in different competitive settings. The course should enhance the understanding of market operations and hence should develop the capability in making economic predictions about market outcomes. It should also serve as a foundation for further studies in management, accounting, finance, and marketing.

Content

1. Nature, Scope and Overview of Managerial Economics
2. Theory of the firm. Profit maximization and Cost Minimization.
3. Economic optimization. Economic relations of variables.
4. The Incremental concept in Economic Analysis. Demand, Supply and Equilibrium.
5. Demand Analysis, Estimation and Forecasting
6. The Basis for Demand. The Market Demand function. Demand sensitivity
7. Elasticity, Price Elasticity of Demand with Managerial applications.
8. Income Elasticity of Demand with Managerial applications.
9. Regression Analysis: Demand estimation. Demand forecasting.
10. Production and Cost Analysis
11. Production function; Total, Marginal and Average Product. Revenue and Cost
12. Production function estimation. Productivity Measurement.
13. Linear Programming, Marginalist Pricing. Mark up pricing. New Product Pricing. Oligopoly Model.
14. Contestable Markets. Pricing Strategies for Firms and Market Power.
15. Monopolistic Competition. Price Discrimination, Monoposony and Price Product
16. Baumol's Theory of Sales Revenue Maximization. Marris's Model of Managerial enterprise
17. Wiiliamson's Model of Managerial Discretion
18. Externalities and Market Pricing issues. Rent seeking and control.
19. Capital Budgeting ant Investment

Recommended Texts

1. Salvatore, D. (2015). *Managerial economics in a global economy* (8th ed.). NY: McGraw Hill.
2. Hirschey, M. (2016). *Managerial economics* (14th ed.). Kentucky: Thomson South-Western.

Suggested Readings

1. Paul, K., Philip, K., Young, S. E. (2013). *Managerial economics: Economic tools for today's decision makers* (7th ed.). London: Pearson.
2. Bruce, A. W., Keith, W., Neil, A., Doherty, E. M. (2012). *Managerial economics: Theory, applications, and cases* (8th ed.). NY: W. W. Norton & Company.

ECON-6210 Development Economics, Theory and Policy 3(3+0)

This course provides an understanding the evolution and relevance of Development Economics concepts and its policy suggestions in addressing the widespread issues like inequality, unemployment, poverty, gender disparities, labor productivity etc. The course would explain the humanistic perspective of economics and explicitly involves the explanation of multi-dimensional nature of Development Economics. Furthermore, this course provides an in-depth discussion of different economic explanations of underdevelopment, and modern strategies for fostering development. We will investigate the role of institutions, institutional change, and markets as they relate to economic development, and discuss related domestic and international economic policy questions. Special emphasis is put on the interplay and synergy between economic theory (attempting to explain underdevelopment) and empirical data (providing both motivating facts and specific testing grounds for theory). At the end of this course, students will be able to design innovative ways to assess whether a proposed development intervention is likely to successfully improve the welfare of its target population.

Content

1. Economic Development
2. Economic Development and Growth
3. Measurement of Economic Development and Growth
4. Characteristics of Least Developing Countries (LDCs)
5. Classical and Contemporary Theories
6. Agriculture and Industry
7. Green Revolution and Industrialization
8. Population, Education and Human Capital
9. Demographic Significance for Development
10. Investment in education and returns
11. Debt and Aid/Assistance
12. Policies to combat debt problem
13. WTO, Liberalization and International Trade
14. Trade as an engine of growth
15. WTO and Regional Trade
16. Poverty and Income Distribution
17. Poverty concepts
18. Income inequality
19. Economic Growth and Environment
20. Sustainable Development

Recommended Texts

1. Todaro, M. & Smith, S. (2015). *Economic development* (11th ed.). New York: Pearsons.
2. Meier, G. M. & Rauch, J. E. (2000). *The globalization of world politics: An introduction to international relations* (4th ed.). Oxford University Press.

Suggested Readings

1. Cypher, J. M. & Dietz, J. L. (2004). *The process of economic development* (2nd ed.). New York: Routledge
2. Jhingan, M. L. (1990). *The economics of development and planning* (2nd ed.). New Delhi: Vrinda Publications Ltd.

ECON-6211 Political Economy and Global Order 3(3+0)

This course is intended to give students with an introduction to the field of political economy and regional dynamics. Political economy seeks to understand and explain policy outcomes and political behavior of economies along with regional importance. This course aims to enable students to apply economic theories and concepts to the study of political action, global order and the formation of policy. The objectives of the course include: i) providing students with knowledge of a range of theoretical approaches to the study of global and international political economy; ii) presenting the major political themes in the historical development of the international economy; iii) providing students with an understanding of debates about the emergence and political consequences of a globalised economy, with its patterns of inequality; iv) exploring the prospects and politics of managing the global economy; and v) reviewing recent research which emphasises the importance of the politics of human and environmental security in studies of political economy.

Contents

1. Introduction: Meaning, Definition and brief Introduction of basic Concepts of Political Economy.
2. Economic and Political Integration
3. Policy Reform and Popular Organization, key Social and Economic indicators
4. Political and Economic Institutions and their role in decision making
5. Linkages of Politics, and Economics, Conceptualizing the Changing Global Order
6. Political Economy and World Order
7. Problem of Power and Knowledge, Politics and Neo-Liberal Political Economy
8. New Voices in the Globalization Debate: Green Perspective, Regional Phenomena and State
9. Regionalism and Globalization
10. The Political Economy of European Integration
11. Political Economy of Economic Development
12. International Politics and Transfer of Technology
13. Sector Specific Development Limitation
14. Agriculture and Industry
15. Political Slogans and their Implementation
16. International challenge of poverty
17. Pakistan - Dynamics of Elitist Model, Strategies for self-preservation
18. Economic Aspects, Poverty Eradication, Trade & Economic Cooperation
19. Issues in Lawlessness and Development
20. Socio Economic Developments & Crime
21. Capital Mobility and Global Order, Opening up of Services Sector and its benefiters

Recommended Texts

1. Gupta, S. D. (1997). *The political economy of globalization* (1st ed.). Kluwer Academic Publishers.
2. Kardar, S. (1987). *The political economy of pakistan* (1st ed.). Progressive Publishers Supplementary Texts.

Suggested Readings

1. Nadeem, A. H. (2002). *Pakistan: The political economy of lawlessness* (1st ed.). Oxford University Press.
2. Hussain, I. (2004). *Dollars, debt and deficits, reform and management of pakistan economy* (1st ed.). Oxford University Press.

ECON-6212 **Econometrics-I** **3(3+0)**

The course is designed for undergraduates for their understanding to derive relationship between economic variables from the available data. The students should be in a position to apply statistical methods to data via simple mathematical models and to interpret the results by using economic theory. The teacher should expose the students to the use of computer in solving simple econometric problems and assignments. Moreover, objective of this course is to provide the basic knowledge of econometrics that is essential equipment for any serious economist or social scientist, to a level where the participant would be competent to continue with the study of the subject in a graduate programme. While the course is ambitious in terms of its coverage of technical topics, equal importance is attached to the development of an intuitive understanding of the material that will allow these skills to be utilised effectively and creatively, and to give participants the foundation for understanding specialized applications through self-study with confidence when needed.

Contents

1. Introduction: Definition and scope of Econometrics
2. Economic theory as the basis for empirical analysis
3. Mathematical and Econometric models
4. Explaining Variables and parameters: Regressors and Regressand
5. Correlation theory, Simple and multiple Regression theory
6. Mathematical versus econometric model
7. Structure of the linear econometric model with two or more variables
8. Assumptions of the model with special reference to the disturbance term,
9. The least squares principle, BLUE properties of the OLS estimators
10. Extensions of the model: Time as explanatory variable
11. Dummy variables, Regression through the origin, Standardized regression coefficients.
12. The estimation procedure, The economic interpretation of the estimated coefficients, Hypothesis testing and the use of Z, t, F, test statistics
13. The confidence interval and tests of significance approaches
14. The ANOVA technique
15. Deviation from the Classical Assumptions
16. Multicollinearity
17. Heteroscedasticity
18. Autocorrelation
19. The Simultaneous Equations Models
20. Types of equation systems (Simultaneous, Recursive, Block-Recursive & Seemingly unrelated)
21. Identification problems
22. Indirect Least Squares (ILS) & Two Stages Least Squares (2SLS) methods

Recommended Texts

1. Koutsoyiannis, A. (2001). *Theory of econometrics* (2nd ed.). London: Palgrave Macmillan.
2. Gujrati, D. N. (2017). *Basic econometrics* (5th ed.) New York: McGraw Hill Company.

Suggested Readings

1. Dougherty, C. (2016). *Introduction to econometrics* (4th ed.). Oxford: Oxford University Press.
2. Kmenta, J. (1997). *Elements of econometrics* (2nd ed.). New York: University of Michigan Press.

ECON-6213 Mathematical Economics-II 3(3+0)

To prepare the students, not majoring in mathematics, with the essential tools of calculus to apply the concepts and the techniques in the field of economics. In order to satisfy the requirements of this course, students will need to acquire a thorough understanding of the mathematical concepts introduced during the semester, and will need to demonstrate that they can apply the corresponding tools and ideas to unfamiliar problems. By the end of Math for Economics II, students should have a complete understanding of optimization and should be able to apply the Lagrange multipliers approach to constrained optimization problems. They will also learn to solve systems of equations using linear algebra. Time permitting, they will also be exposed to the principal methods of dynamic analysis of economic processes, and introductory concepts and results of integration and differential equations. A student should be able to find solutions of elementary differential equations and analyze their stability.

Contents

1. Complex Number and Circular Functions
2. Imaginary and Complex Numbers
3. Properties of Sine & Cosine functions
4. Eular relations
5. Alternative representation of Complex Numbers
6. Integral Calculus
7. Rules of Integrations and Operation
8. Definite integrals , their properties and area under a curve
9. Improper integral
10. Economic Applications of Integrals
11. The Domar growth model
12. Differential Equations (Continuous Time)
13. First order linear and non linear differential equations
14. Solution of first order linear differential equations
15. Types of time paths and the dynamic stability of equilibrium
16. Market models and Solow growth model
17. First order linear and non linear difference equations its solution and verification of results
18. Conditions for dynamic stability of equilibrium
19. Inflation-unemployment model in discrete time
20. Higher order difference equations and their solutions
21. The Arrow-Enthoven Sufficiency theorem
22. Quasi-concave programming

Recommended Texts

1. Chiang, A. C. (2004). *Fundamental methods of mathematical economics* (4th ed.). NY: McGraw Hill Publishing Company.
2. Dowling, E. T. (2009). *Mathematics for economists, schaum's outline series* (3rd ed.). NY: McGraw Hill Publishing Company.

Suggested Readings

1. Silberberg, E. (2000). *The structure of economics: A mathematical analysis* (3rd ed.). NY: McGraw Hill.
2. Frank, B. (2011). *Applied mathematics for business, economics and social sciences* (4th ed.). NY: McGraw Hill Publishing Company.

ECON-6214 Financial Management for Business Firm 3(3+0)

This course focuses on the application of modern financial techniques to operating and investing decisions. It comprehensively analyzes working capital management and capital budgeting decisions within the context of the firm's business strategy. We will show managers how to interface with accounting and finance departments, help them to understand how firms meet their financial objectives utilizing financial decision-making. This course will also explain financial tools and techniques, which can be used to help firms maximize value by improving decisions relating to capital budgeting, capital structure, and working capital management. This course will deal with a number of related topics, including multinational financial management, risk management, mergers and acquisitions. Understanding and applying financial concepts requires facility with algebra. We will take many opportunities throughout the course to address basic mathematical concepts and computational techniques. The student studies topics in the financial management of profit-seeking organizations. A major objective is the development of analytical and decision-making skills in finance through the use of theory questions and practical problems.

Contents

1. Introduction to Financial Management
2. The Role of Financial Management
3. Organization of the Financial Management Functions
4. The Business, Tax and Financial Environments
5. Tools of Financial analysis and Planning
6. Financial Statement Analysis
7. Cash-Flow Analysis and Financial Planning
8. Accounting statement of Cash Flows
9. Cash-flow forecasting
10. Valuation: The Time Value of Money
11. The interest rate: Simple and Compound interest
12. The Valuation of long-term Securities: Distinctions among valuation concepts
13. Defining risk and return using probability distributions to measure risk
14. Cost of Capital
15. Operating and Financial Leverage, Operating Leverage
16. Financial Leverage, Total leverage, Cash-Flow ability to service debt
17. Working Capital Management-I
18. Working Capital Management-II
19. Investment in Capital Assets
20. Long-term Financing

Recommended Texts

1. James, C. V. (2008). *Fundamentals of financial management* (2th ed.). London: Cengage Learning, India.
2. Lawrence, J. G. (2000). *Principles of managerial finance* (10th ed.). New York: McGraw Hill Publishing Company.

Suggested Readings

1. Block, S. B., Hirt, G. A., & Short, J. D. (2015*). Foundations of financial management* (10th ed.). Toronto: McGraw-Hill Ryerson Ltd.

2. Eugene, F., Brighum, J., & Houston, H. (2014). *Fundamentals of financial management* (12th ed.). NY: McGraw Hill Publishing Company.

ECON-6215 Agriculture Economics 3(3+0)

The aim of this course is to introduce students to the subject of Agriculture Economics. The emphasis will be on problems in the modern contemporary economy, but the topic will also be approached from an historical perspective, taking a longer term view of the Importance of Agriculture in Underdeveloped countries. By the end of the course, students should expect to not only have a greater knowledge of the Theories, Policies, Measures and Importance of Agriculture in and Economy but to have also gained some understanding of the methods used by economists and policy-makers to deal with them. This course provides a comprehensive introduction to agriculture economics, focusing in particular on its importance in an economy and its role for other sectors of the economy, its structure and role in economic development. More specifically, it introduces key concepts related to resource use efficiency, supply response, theory of rent, surplus, and theories and models in Agriculture economics.

Content

1. Introduction, Importance, Structure and Role of Agriculture
2. Agricultural Revolution, Importance of Agriculture, Agriculture vs. Industrial development
3. Current State of Agricultural Development
4. Brief Overview of Sources of Growth
5. Traditional Agriculture and Productivity
6. Framing Environment: Natural Hazards and Economic Uncertainties
7. Farm Size in Pakistan and Productivity
8. Product Contribution, Market Contribution, Factor's Contribution
9. Theory of Rent and Agriculture in Dualistic Development Models
10. The Theory of Economic Rent
11. Rent and Quasi-Rent The Ricardian 'Corn Rent
12. Characteristics of Landownership in Underdeveloped Agriculture and Pakistan
13. Tenant's Status in Pakistan
14. Agricultural productivity in Pakistan and use of inputs
15. The Lewis, Ranis-Fei (FR)
16. Jorgenson and Kelley
17. Williamson, Cheetham Models

Recommended Texts

1. Jhingan, M. L. (1990). *The economics of development and planning* (2nd ed.). New Delhi: Vrinda Publications Ltd.
2. Ghatak, S. & Ingersent. (1984). *Agriculture and economic development* (1st ed.). London: Harvester Press.

Suggested Readings

1. Yujiro, H. & Vernon, W. R. (1985). *Agricultural development* (1st ed.) New York: John Hopkin University Press, London.
2. George, W. N. & Jeffrey, A. (2006). *Economics of agricultural development* (1st ed.). Routledge Group.

ECON-6216 **Monetary Theory and Policy** **3(3+0)**

This course provides cognizance of the significance of monetary phenomenon within any economy. Understanding of the theoretical base behind the functioning of money and its allied concepts and how they are meaningful in the conduct of monetary policy and its implications within national borders and beyond. Further, it will inculcate ability to understand the formulation, function and execution of monetary policy relative to contemporary national and international circumstances. This course will investigate the origins and role of money, theories regarding the supply of and demand for money and the role of money in determining aggregate demand, output, prices and other key macroeconomic variables. The relationship between money, credit and debt will be emphasized. This course will also analyse the evolving role of central banking and views regarding the role and conduct of monetary policy, including recent and historical international policy actions.

Content

1. Introduction and Development Of Monetary Mechanism
2. Evolution of Money and Payment System
3. Definition, Function and Measurement of Money
4. Role of Money in the Economy
5. Classical Dichotomy and Keynesian IS LM Framework
6. Money in Aggregate Demand & Aggregate Supply Analysis
7. Keynesian Vs. Monetarist views of Equilibrium Output, Employment and Prices
8. Demand for Money and Money Supply process
9. Theories of Money Demand
10. Keynesian Liquidity Preference Framework
11. Multiple Deposit Creation and Monetary Base
12. Determinants of the Money Supply
13. The Conduct of Monetary Policy: Central Bank
14. The Conduct of Monetary Policy: Goals and Targets.
15. Tools of Monetary Policy by Central Bank
16. Money & Interest Rates
17. Determinants and Kinds of Interest Rates
18. What is Inflation, its Causes and types
19. Philips Curve and Accelerating Inflation.
20. Inflation in Pakistan: Sources and Policies to Combat Inflation
21. Monetary Policy in International Framework
22. Monetary Policy in Fixed and Flexible Exchange Rates.
23. Exchange Rate, Monetary Policy and Balance of Payment

Recommended Texts

1. Mishkin, F. S. (2001). *The economics of money, banking & financial markets* (1st ed.). New York: Pearsons.
2. Miller, R. L. & David, V. H. (2001). *Money, banking & financial markets* (1st ed.). South Western, Singapore.

Suggested Readings

1. Vanish, K. (2001). *Monetary theory* (1st ed.). Vikas Publishing House, Delhi.
2. Mishkin, F. S. (2000). *Financial markets and money* (1st ed.). London: Harper & Row Publisher.

ECON-6217 **Econometrics-II** **3(3+0)**

The course is designed for senior undergraduates more inclined towards quantitative studies. The objective is to enable the students dive deep into complex problems of the real world economic life. They have to understand data problems, to have good grasp over advanced estimation techniques and to have the capability of inferring results accurately. The students have to learn certain computer packages like SPSS, E-views and Strata besides Excel. The students are required to devote at least one hour per week to computer laboratory. They have to develop the capacity to read and understand research papers to understand estimation techniques and their interpretations. Moreover, this course will present an advanced treatment of econometric principles for cross-sectional, panel and timeseries data sets. While concentrating on linear models, some non-linear cases will also be discussed, notably limited dependent variable models and generalised methods of moments. The course will focus on modern econometric techniques, addressing both technical derivations and practical applications. Applications in the areas of microeconomics, macroeconomics and finance will be considered.

Contents

1. Overview of the Classical Regression Model
2. The multiple regression (K-variable) model in matrix format
3. Properties of the OLS estimators
4. Interpretation of the Beta coefficients (β1, β2,…., βk), Hypothesis testing using matrix approach
5. Forecasting in OLS model
6. Time as an explanatory variable
7. Regression on Dummy variables and Dummy variable trap
8. Chow test, Specification bias and Errors in variables
9. The Generalized Least-Squares Model
10. Deviation from the assumptions of the classical regression model
11. The problem of heteroscedasticity
12. The Maximum Likelihood Estimators\
13. Instrumental variable (IV) estimators
14. Time Series Analysis
15. ARMA and ARIMA Models
16. Comparison of forecast based on ARIMA and regression models
17. Stationarity and Unit roots
18. Co-integration and error correction models
19. Introduction to Autoregressive Distributed Lag models
20. ARCH models

Recommended Texts

1. Asteriou, D. (2007). *Applied econometrics: A modern approach using e-views and microfit* (2nd ed.). London: Palgrave Macmillan.
2. Dougherty, C. (2016). *Introduction to econometrics* (4th ed.). Oxford: Oxford University Press.

Suggested Readings

1. Koutsoyiannis, A. (2001). *Theory of econometrics* (2nd ed.). Oxford: Palgrave Macmillan.
2. Gujrati, D. N. (2017). *Basic econometrics* (5th ed.). New York: McGraw Hill Company.

ECON-6218 Research Methodology 3(3+0)

This course covers the basics of conducting applied economic research. This includes the selection of topic, literature review and survey, selection of research method and approach, formulation of hypothesis, testing of hypothesis using statistical analysis, and summarizing results. You will organize and complete the research project in stages. This process includes the following steps: • choice of a topic; • finding, critically evaluating and describing the relevant economics literature on this topic; • developing a research proposal; • finding relevant economic data sources and collecting economic data; • analyzing these data using appropriate statistical and econometric techniques; • clearly and meaningfully summarizing, tabulating and explaining the findings; • writing a final report/paper; • preparing a presentation. Research scholars would examine and be practically exposed to the main components of a research framework i.e., problem definition, research design, data collection, ethical issues in research, report writing, and presentation.

Content

1. Importance of Research Methodologies
2. Research techniques in social sciences and their limitations
3. Theory and basis of research
4. Empirical and theoretical research
5. Stages of research process
6. Identification of problem/issue, data, theory and estimation and related problems
7. Thinking, Field Research Designs; the process of field research, Exploratory Research, Casual Inference
8. Sample Design: the Nature of Sampling
9. Measurement and Scaling; the Development of Measurement Tools,
10. Scaling, the Nature of Scaling, Response Methods, Scale Construction
11. Data Collection Methods
12. Survey Instruments and Field Procedures; Survey Instrument Designs
13. Interpretation of Replies and Data Presentation and Analysis
14. Report Writing: the Questions and analysis of Research Proposal
15. Organization of Research Paper
16. How to format and Write country Research Report
17. Executive summary and abstract of a report, Conclusion and its basis
18. The Research Report, Research Report Format, Writing and editing of research Report

Recommended Texts

1. Kumar, R. (2018). *Research methodology: A step-by-step guide for beginners* (5th ed.). London: SAGE Publications Ltd.
2. Johnson, G. (1986). *Research methodology for economists: Philosophy and practice* (1st ed.). NY: McMillan Publishing Co.

Suggested Readings

1. Sekaran, U. & Bougie, R. (1992). *Research methods for business. A skill building approach* (7th ed). Hoboken: John Willey & Sons, Inc.
2. Charles, M., Judd, L. H., Kidderand, E. & Smith. R. (1991). *Research methods in social relations* (6th ed.). Holt: Rinehart & Winston.

ECON-6219 Human Resource Development and Management 3(3+0)

This course provides a comprehensive overview of how an economy can get benefit from nurturing its human resource and its management in line with the parameters of Knowledge Economy. The focus of the course would be to give in depth analysis of human resource related determinants behind the efficiency driven and innovation driven economies. The general purpose is to familiarize students with the basic principles and techniques of human resource management. The course takes a practical view that integrates the contributions of the behavioral sciences with the technical aspects of implementing the human resource function in the 'real world.' Certainly, not everyone who takes this course will become a human resource professional, although they will learn a great deal about those roles. Indeed, for many students this course will be the only human resource course they take. Thus, a basic understanding of human resource management is essential whether the student works in a government agency, financial services, high technology industry, retail, educational institution, or other type of organization.

Content

1. Introduction and Issues: Population Growth and Resource Stress
2. Role of Human Resources in Economic Development
3. Human Resources and Economic Growth
4. Human Development Index
5. Human Capital and its Implications
6. Investment in Human Capital and Returns
7. Demand for Education
8. Returns to Education and its Implications
9. Investment in Human Development in Pakistan
10. Mobility and Migration
11. Migration Decision Determinants
12. Migration and Development in Pakistan
13. Women and Human Development
14. Determinants of Women's Time Allocation
15. Development of Women; Education and Training
16. Policies to improve women conditions in Pakistan
17. Health, Nutrition and Human Development
18. Employment, Unemployment and Manpower Forecasting

Recommended Texts

1. Mahboob-ul-Haq (1998). *Reflections on human development* (1st ed.). Oxford: Oxford University Press.
2. Aslam, C. & Hamid, A. (1999). *Human development and management in pakistan* (1st ed.). Lahore: Ferozsons.

Suggested Readings

1. Harbinson, & Myers, C. A. (1964). *Educational manpower and economic growth* (1st ed.). London: McGraw Hill.
2. Kemal, A. R. (1989). *Human resource development in the labor surplus economies.* Islamabad: Pakistan Manpower Institute.

ECON-6220 International Trade Theory and Finance 3(3+0)

This course provides a comprehensive introduction to international trade and finance, focusing in particular on trade theory explaining why trade takes place; its history and key concepts, major theoretical frameworks, main factors and agents. More specifically, the course introduces key concepts related to flow of goods and services, funds, monies and currencies from one country to another country. The course covers the main theories of international trade and international trade policy. Students will learn the main empirical patterns of current international trade and how to access sources of this information. They will become familiar with the concept of comparative advantage, and study models showing how technological differences, differences in resource endowments, and economies of scale determine trade patterns and income distribution. The effects of various trade policy instruments on welfare will be analysed. Students will acquire the problem-solving skills necessary to analyse these and similar matters.

Content

1. Importance and Basis of Trade
2. Why Study International Economics? Basis of Trade, Gains from Trade
3. Absolute Advantage, Comparative. Pattern of Trade
4. Offer Curves and Free Trade Equilibrium
5. The Elasticity of Exports Demand and Balance of Payment. Substitution and Income Effects
6. Growth and Trade
7. Factor endowment and Heckscher – Ohlin theory, factor price equalization
8. Factor intensity reversal. Newly industrializing countries (NICs)
9. Rybeczunksy theorem
10. Markets, cartels and international trade
11. Dumping / discrimination and WTO
12. Multinationals firms and foreign direct investment, transfer of capital, technology
13. Tariff quota and trade policies
14. Foreign Exchange Market and Balance of Payments (B.O.P)
15. Open Economy: Monetary and Fiscal Policy and International Institutions
16. International Movement's of Factors and Major Contemporary International Economic Issues
17. WTO: GATT and Emergence of WTO. Expected Impacts on Trade, Liberalization and B.O.P
18. WTO Rules: Sanitary, Phytosanitary, Dumping, Anti-Dumping etc Rules and Their Impacts
19. Emerging Regional Trading, Blocks, Special Preference and Monetary

Recommended Texts

1. Salvatore, D. B. (2013). *International economics* (11th ed.), London: Prentice Hall.
2. Chacholiades, M. (1978). *International trade theory and policy* (1st ed.). New York: McGraw Hill Book Company

Suggested Readings

1. Sodersten, B. & Geoffry, R. (1994). *International economics* (1st ed.). MacMillan Press Ltd.
2. Peter, H. &Thomas, A. P. (2012). *The international economy* (4th ed.). Cambridge University Press.

ECON-6221 Investment and Project Appraisal 3(3+0)

The ultimate outcome of a public or a private investment is determined by the financial, economic, managerial and political parameters associated with the project. A project evaluation that closely links the financial and economic analysis, and in turn identifies the distribution of benefits and costs over the various interest groups, will be far more likely to identify fatal flaws in the design of a project that will an appraisal that segments the analysis and does not address the interdependencies of the components. This course will enable students to understand the concepts which underlie the appraisal of investment projects and the advantages and drawbacks of each of the main approaches used (namely cost benefit analysis, multi criteria analysis and other important concepts.

Contents

1. Introduction: Meaning of Project Appraisal, usefulness and significance
2. Aspect of project appraisal with a special focus on economic versus financial analysis
3. Contours and Dimensions of a project and its essential ingredients
4. Project Vs. Plans. Project Cycle
5. Identify Project Benefits and Costs
6. The Incremental / Net Benefits and "With" and "Without" Comparisons
7. Pricing Project Costs and Benefits
8. Prices reflecting values, Market price and financial analysis, Finding market prices and related problems
9. Change in relative prices and inflation: Shadow Prices and economic analysis
10. Removal of market price distortions in traded and non-traded goods
11. Premium on foreign exchange through use of Shadow exchange rate and conversion factor approach
12. Comparing Project Costs and Benefits (Measuring of a Project Worth)
13. Undiscounted measures of project worth
14. Social vs. Economic benefits and selection of projects
15. Applying Discounted Measures of Project Worth: Sensitivity analysis
16. Cost Effectiveness Analysis
17. Financial (Investment) Analysis
18. Theoretical and empirical examination and saving and investment
19. Concept of capitalization types of securities, non-banking financial institution
20. Financing the industrial sector; Large scale and small scale, Interest rate. Bond market, Real and financial investment
21. Financial intermediaries; Speculation and Inter – relationship of financial and real variables in the economy

Recommended Texts

1. Edwin, J. E. & Martin, J. G. (2014). *Modern portfolio theory and investment analysis* (9th ed.). London: John Wiley and Sons.
2. United Nations. (1978). *Guide to practical project appraisal social benefit cost analysis in developing countries* (1st ed.). Oxford: Oxford & IBH publishing Co. New Delhi.

Suggested Readings

1. Hussain, C. M. (1985). *Project appraisal, monitoring and evaluation process with special reference to Pakistan* (1st ed.). *New York:* Royal Book Co. Karachi.
2. United Nations. (1985). *Manual for evaluation of industrial projects*. New Delhi: Oxford & IBH Publishing Co.

ECON-6222 Economic Principles, Strategies & Techniques of Marketing 3(3+0)

This course is designed to provide students with an understanding of the principles of Marketing. There will be a focus on the management of the marketing activities and how marketing relates to overall organizational functioning, including the management of exchange processes between business units and consumers and between firms. It will include topics such as environmental analysis, industry and competitor analysis, objective setting, marketing strategies, market mix components, and finally implementation and control mechanisms. There will be a focus on the management of the marketing activities and how marketing relates to overall organizational functioning, including the management of exchange processes between business units and consumers and between firms. It will include topics such as environmental analysis, industry and competitor analysis, objective setting, marketing strategies, market mix components, and finally implementation and control mechanisms.

Contents

1. Key Marketing Concepts, Scope of Marketing, Evolution of Marketing
2. Importance of Marketing, Marketing as an Exchange Process
3. Demand Management Tool. Marketing Cost and Price Relationship
4. Primary and Secondary activities in Supply Chain / Value Chain
5. Maximizing linkages within the Various Activities
6. The SMP Process, The BCG Matrix, GE Nine Cell Model and Porter's Generic
7. International Market mg: The Target Markets & Marketing Mix
8. Product Management
9. The Consumer and Industrial Products, Product Planning and Development
10. Marketing Cost, Finance and Cost Management
11. Analysis of Cost and Marketing Cost for Products
12. Distribution Management and Market Intermediaries
13. Advantages of Market Segmentation, Segmentation Variables
14. Market Targeting, Strategic Opinion
15. Pricing Strategies and Sales
16. Theories of Pricing and Value
17. Supply and Demand Model, Mark-up Pricing

Recommended Texts

1. Kotler, P. & Armstrong, G. (2008). *Principal of marketing* (12th ed.). London: Prentice-Hall International, Inc.
2. Etzel, W. & Stanton. (2009). *The fundamentals of marketing* (11th ed.). London: McGraw Hill.

Suggested Readings

1. Jerome, M. (2000). *Basic marketing* (8th ed.). London: Prentice Hall.
2. Boyd, H. W. (2001). *Marketing management: Strategic approach with a global orientation* (3rd ed.). London: McGraw Hill.


ECONOMICS

ECON-7101 Micro Economics 3(3+0)

This course presents major elements of advanced micro-economic models for systematic thinking about the working of modern markets. Problems of consumers and producers will be analyzed concisely in partial, general equilibrium and game theoretic frameworks relating them to the micro level decision making processes with due consideration on the structure of markets and public policies. Exercises and assignments in workbook anticipate reading of relevant journal articles. The course is designed for senior graduates. The objective is to confront them to advanced theoretical concepts and rigorous analysis with mathematical tools at hand. They have to develop analytical skills and to enhance the capabilities to solve somewhat complicated problems. As usual, the teacher is expected to draw examples from the surrounding world for exposition. After completion of this course, the students are expected to have grasp understanding of framework of microeconomics and its application in economic decision making, an appreciation of the methodology of modern microeconomics, Insight into the historical evolution of the ideas and improved problem-solving skills.

Contents

1. Economic activity and economic theory: The organization of an economic system
2. System of consumer demand, duality and empirical demand models
3. Determination of price by supply and demand, Theory of consumer behavior
4. The Production theory, production and cost functions, market structure and duality
5. Empirical specification of input demand and output supply functions
6. Firm and industry supply. Determination of prices under different market conditions.
7. Patterns of imperfect competition. Preferences and demand relationships among goods.
8. Demand and supply elasticity, Pareto optimality and choice under risk and uncertainty
9. Introduction to game theory and its application
10. Uncertainty, asymmetric information, moral hazard and adverse selection
11. Production, cost, profit and revenues functions.
12. General equilibrium and dis-equilibrium models and welfare economics.

Recommended Texts

1. Nicholson, W. (2007). *Microeconomic theory: Basic principles and extensions*. London: Dryden Press.
2. Silberberg, E. (1988). *The structure of economics: A mathematical analysis*. New York: McGraw Hill Book Company

Suggested Readings

1. Henderson, J. M. & Quandt, R. E. (1980). *Microeconomic theory: A mathematical approach* (3rd ed.). London: McGraw hill Book Company.
2. Henderson, J. M. & Quandt, R. E. (1990). *Microeconomic theory* (3rd ed.). N.Y. Melliwra H. A. Book Co.

ECON-7102 Macro Economics 3(3+0)

This course provides a comprehensive introduction to Macroeconomics. The objective is to enhance their analytical skills and to clarify further their macroeconomic concepts with quantitative tools at hand. They must have a strong theoretical foundation so as to understand the real problems of the economy with particular emphasis on inflation, unemployment, instability, deficit and debt etc. to which the developing countries are confronted at present. This course provides a comprehensive introduction to Open Economy and Macroeconomic Stabilization, IS-LM: Goods and Money Market, Labor Market, Price expectation and Unemployment, Macroeconomic Policy Debate, Government debt and Budget deficit, Economic fluctuation and its sources, Long-Term Growth, and Full Employment. Furthermore, this course presents an in depth analysis of modern macroeconomic theory. The course provides an advanced overview of the field as well as a rigorous analysis of the field's foundations. Students who do not necessarily intend to specialise in macroeconomics are thereby exposed to the most up to date theories, while those students who plan to pursue higher research in macro-economics are well equipped with the latest techniques and know how.

Contents

1. Macroeconomic foundation.
2. Measurement of macroeconomic variables.
3. Different schools of thought in macroeconomics.
4. National income expenditure accounts.
5. IS-LM model of macroeconomic analysis.
6. Aggregate demand and supply analysis
7. The interplay of monetary and fiscal policies in stabilizing the economy.
8. Economic growth, rational expectation,
10. Trade cycle theories, real business cycle theory, Castrophy theory,
11. Kaldor's model, traditional Keynesian theories of fluctuations, New Keynesian theory.
12. Consumption, saving, investment and theory of income determination.
13. Level of investment, interest and money. Demand for money.
14. Disequilibrium models, rational expectation, stabilization policy.
15. Equilibrium Money and credit, stabilization policy
16. Macroeconomic dynamics. Inflation, unemployment,
17. Budget deficit and public debt.

Recommended texts

1. Dornbush, R. & Fischer, S. (2000). *Macroeconomics*. New York: McGraw Hill.
2. Branson, W. J. & Litvack, J. M. (1988). *Macroeconomics*. New York: Harper and Row.

Suggested Readings

1. Gorden. R. J. (1990). *Macroeconomics*. Scott, Fores man/Little. London: Brown Higher Education.
2. Felder, B. & Homburg, S. (1987). *Macroeconomics and new macroeconomics*. New York: Springer –Verlay.

ECON- 7103 Mathematical Economics II 3(3+0)

Mathematical economics is a model of economics that utilizes math principles and methods to create economic theories and to investigate economic quandaries. Mathematics permits economists to conduct quantifiable tests and create models to predict future economic activity. Advancements in computing power, big data techniques, and other advanced mathematics applications have played a large part in making quantitative methods a standard element of economics. These elements are all backed by scientific methods advancing the study of economics. This course introduces the students of Economics with the essential tools of calculus to apply the concepts and the techniques in the field of economics. They will acquire a thorough understanding of the mathematical concepts so that they can apply the corresponding tools and ideas in their research endeavors. The objective is also to make them familiar with the advanced mathematical techniques to enable them to handle economics models, interpret the results and solve complex problems. On successful completion of this course, students will be able to successfully use mathematics in economics and business applications.

Contents

1. The nature of mathematical economics
2. Mathematical versus non-mathematical economics
3. Economic models. Review of Matrix Algebra and its application to Business and Economics
4. Review of Differentiation: Rules of differentiation, maxima/minima of functions
5. Partial/total derivatives and their applications in Business and Economics.
6. Integration: Integrals and their applications in Business and Economics.
7. Optimization Problems. Dynamic optimization. First order differential equations
8. Linear differential equation, nonlinear differential equation, exact equations.
9. Higher Order differential equation and their applications in Business and Economics
10. Mathematical Programming: Linear programming and its applications
11. Non-Linear Programming and its applications

Recommended Texts

1. Chiang A. C. (1996). *Fundamental methods of mathematical economics* (3rd ed.). London: Mcgraw Hill International Editions
2. Dowling, E. T. (1990). *Mathematics for economists, schaum's outlines series*.New York: McGraw-Hill Book Company.

Suggested Readings

1. Budnick, F. S. (1993). *Applied mathematics for business, economics and social sciences*. New York: McGraw-Hill, Inc.
2. Silberberg & Suen (2001). *The structure of economics: A mathematical analysis* (3rd ed.). London: McGraw Hill Publishing Company.

ECON-7104 **Applied Econometrics** **3(3+0)**

The course is designed for senior undergraduates more inclined towards quantitative studies. The objective is to enable the students dive deep into complex problems of the real world economic life. They have to understand data problems, to have good grasp over advanced estimation techniques and to have the capability of inferring results accurately. The students have to learn certain computer packages like SPSS, E-views and Stata besides Excel. The students are required to devote at least one hour per week to computer laboratory. They have to develop the capacity to read and understand research papers to understand estimation techniques and their interpretations. On the successful completion of the course students will be able to have a broad knowledge of econometric analysis relevant for analyzing economic data by using different softwares, Interpretation and critical evaluation of the outcomes of empirical analysis. They will be familiar to theoretical background for the standard methods used in empirical analyses, like properties of least squares estimators and the statistical testing of hypothesis.

Contents

1. The nature of regression analysis, classical linear regression model
2. Multiple regression analysis. Estimation of general linear and non-linear equations,
3. Nested and non-nested models and hypothesis testing
4. Estimation with panel data
5. Dummy variables and spine functions
6. Violation of basic assumptions Single equation regression models and their applications.
7. Problems of estimation and hypotheses testing
8. Multicollinearity
9. Heteroskedasticity
10. Autocorrelation and model specification problems
11. Distributed and autoregressive lag models, finite and infinite distribution lags, etc.
12. Adaptive expectations, partial adjustment and rational expectations models
13. Simultaneous equation models. Identification problems. ILS, 2SLS & 3SLS
14. Qualitative response models
15. Time series analysis

Recommended Texts

1. Griffiths, W. E., Hill, R. C. & Judge, G. G. (1993). *Learning and practicing econometrics*. New York:Wiley and Sons.
2. Ramanathan, R. (1992). *Introductory econometrics with applications*. New York: The Dryden Press.

Suggested Readings

1. Green, W. H. (1990). *Econometric analysis*, Cliffs, New Jersey.
2. Pindyek, R. S. & Rubinfield, D. L. (1997). *Econometrics models and economic forecasts*. New York: McGraw Hill.

ECON-7106 Economics of Development Planning and Growth 3(3+0)

Development economics is a branch of economics that focuses on improving fiscal, economic, and social conditions in developing countries. Development economics considers factors such as health, education, working conditions, domestic and international policies, and market condition with a focus on improving conditions. This is an upgraded course in development economics. The course covers the following topics: the meaning and measurement of economic development, growth theories, poverty and income distribution, the role of geography and institutions, fertility and population growth, the role of credit markets and microfinance, health and nutrition, education, female empowerment. On successful completion of this course, students will be able to demonstrate familiarity with some central themes and issues of economic development, demonstrate the understanding of the difference between growth and development, major growth theories, the measurement of inequality, significance of agriculture in developing countries, poverty and population issues facing the world, international trade, and importance of foreign aid. The students are expected to analyze empirical evidence on the patterns of economic development and can read critically the journal literature in the area of economic development.

Contents

1. Introduction: Nature and Significance
2. Poverty: Absolute and Relative, Different measures
3. Distribution of income and its relationship with development.
4. Planning for economic development, growth and welfare.
5. Various approaches to economic planning and the development planning policy making.
6. Growth strategies and their linkage with poverty reduction methods and planning.
7. Technology and economic growth
8. Development theories and their interdependence.
9. Role of Agriculture in Economic Development
10. Industry and Economic Development
11. Role of education for human capital formation
12. Role of institutions in economic development
13. Trade as engine of economic growth
14. Growth history of today's developed world
15. Common Problems of developing countries
16. Planning and development with special reference to Pakistan

Recommended Texts

1. Blitzer, C. R., Clark, P. B. & Taylor, L. (1995). *Economy-wide models and development planning*. Oxford: Oxford University Press
2. Gylfason, T. (1999). *Principles of economic growth*. Oxford: Oxford University Press

Suggested Readings

1. Meier, G. M. (2000). *Leading issues in economic development*. Oxford: Oxford University Press

2. Meier, G. M. & Rauch, J. E. (2000). *The globalization of world politics: An introduction to international relations* (4th ed.). Oxford: Oxford University Press

ECON-7108 Public Finance 3(3+0)

The course attempts to explain the concepts and conceptual framework of Public Sector Economics, defines and makes understand the meaning of Public sector Economics, gives the advantages and disadvantages of Public corporations, the differences between Private and Public sector and the argument for Public sector. The course aims to help users develop critical thinking skills, learn how to evaluate economic arguments, and understand the roles of Public Sector economic thought in guiding current public sector economic policies and debates. This course introduces the students with need for public sector and its major functions like, allocation functions, distribution functions, stabilization functions and interaction of private and public sectors. On the successful completion of the course students will have a sufficient learning about failure of market mechanism and need for public sector and how it performs functions like efficient allocation of resources, distribution function and stabilizations function through different channels

Contents

1. The significance of Public finance
2. Budget and budgetary problems
3. Theory of public expenditures
4. Principles of taxation and the tax structure
5. Fiscal policy and public debt
6. Zakat and public finance in Islam
7. The role of government in externalities
8. Market failure and provision of public goods
9. Distribution of Income
10. Poverty , Inequality and Development

Recommended Texts

1. Musgrave, R. A. & Musgrave, P. B. (1988). *Public finance in theory and practice.* New York: McGraw Hill,
2. Ulbrich, H. H. (2002). *Public finance*. London: Thomson Learning

Suggested Readings

1. Trotma, D. I. (1983). *Public sector economics* (1st ed.). London: Elsevier Ltd.
2. Rosen & Harvey, S. (1999). *Public finance* (9th ed.). New York: Mc-Craw Hill.

ECON-7111 Agricultural Growth and Poverty 3(3+0)

The aim of this course is to introduce students to the subject of poverty and inequality. The emphasis will be on problems in the modern contemporary economy, but the topic will also be approached from an historical perspective, taking a longer term view of the distribution of income in human societies. In particular, we will examine why some individuals and groups have less access to resources and income than others. Students will learn the fundamental concepts, theories and methodologies that are used by economists to measure and understand questions related to the distribution of income. By the end of the course, students should expect to not only have a greater knowledge of the forces determining the extent of poverty and the distribution of income, but to have also gained some understanding of the methods used by economists and policy-makers to deal with them. They will also learn about balanced and unbalance growth strategies among which following the more appropriate one they will be able to keep the economy on the right path. They will know about situation of food insecurity and its different models. By having knowledge about this they will be able to apply it on the economy. They will also come to know the pro-poor growth theories and be able to apply this knowledge for reducing poverty.

Contents

1. Models of Agricultural Growth
2. Determinants of Urban Rural Disparity
3. Role of Technology in Agricultural Growth
4. Interdependence between Agricultural growth and Economic Growth
5. Models for the Analysis of Food Security and Sustainable Agriculture
6. Relationship between growth, poverty and income distribution
7. GNP as a biased index of welfare, growth characteristics contributing towards poverty
8. Poverty: Poverty profile, sources and consequences
9. Structural adjustment, growth and poverty
10. Balanced growth and unbalanced development
11. Redefining development goals: distribution from growth
12. Growth with improved income distribution
13. Poverty alleviation policies: policy options: some basic consideration for pro-poor growth
14. Different pro-poor growth indices: Poverty equivalent growth approach
15. Case studies on growth and poverty in Pakistan

Recommended texts

1. Hayami, Y. & Ruttan, V. W. (1985). *Agricultural development: An international perspective*. Washington, DC: Johns Hopkins University Press.
2. Todaro, M. P. (1999). *Economic development*. Essex: Long man House Burnal Mill Harlow.

Suggested Readings

1. Meier, G. M. (1997). *Leading issues in economic development*. New York: Oxford University Press.
2. George, W. N. & Jeffrey, A. (2006). *Economics of agricultural development* (1st ed.). London: Routledge Group.

ECON-7118 Research Methodology 3(3+0)

Research plays a dynamic role in several fields and it has increased significance in recent times. The study of research methodology provides us the necessary training in choosing methods, materials, scientific tools and training in techniques relevant for the problem chosen. The aim of this course is to develop students' knowledge and understanding of the role and conduct of quantitative and qualitative research methods in planning. The course equips students with the skills to review and conduct methodologically sound research as a part of their professional work. Students develop the skills to recognize and reflect on the strengths and limitations of different research methodologies, understand the links between theory and practice, critically assess research, and address ethical and practical issues. After successful completion of this course, students will be able to: locate, analyze and synthesis information about the diversity of research approaches, to develop understanding of the basic framework of research process and to identify various sources of information for literature review and data collection

Contents

1. The scope and nature of research method in Economics
2. The research process, Problem Definition and the Research Proposal,
3. Exploratory Research and Qualitative analysis,
4. Survey Research: An Overview, Basic Method of Communication with respondents
5. Measurement and Scaling Concepts,
6. Attitude Measurement, Questionnaire Design,
7. Sample Designs and Sampling Procedures, Determination of Sample Size
8. Basic Data Analysis: Descriptive Analysis, Univariate Analysis, Bivariate Analysis
9. Tests of Differences, Bivariate analysis: Measures of association, Mutivariate analysis.
10. Organization of Research Paper.
11. How to format and Write country Research report
12. Conclusion and its basis.
13. Evaluation of Research Work.
14. The Research Report, Research Report Format
15. Writing and editing of research Report.

Recommended Texts

1. Babbic, E. (1995). *The practice of social research*. London: Wadsworth Publishing Company.
2. Berg, B. L. (1989). *Qualitative research methods for the social sciences*. Boston: Allyn & Bacon.

Suggested Readings

1. Brewer, J. H. (1989). *A mu1timethod research: A synthesis of styles*. California: Stage Newbury Park.
2. Corbin, J., & Strauss, A. (1990). Grounded theory method: Procedures, canons, and evaluative procedures. Qualitative Sociology, 13(1), 3-21.