



University of Chitral یونیورسٹی آف چھترار
BECOME WHAT YOU WANT TO BE

Scheme of Studies Bachelor of Studies in Economics Fall 2023

Additional Director Academics
University of Chitral

Department of Economics
University of Chitral



General Requirements of the Programme

Nomenclature

Bachelor of Studies in Economics

Eligibility Criteria

Students with degree/ certificate of F.Sc./ F. A/ D. Com/ A-levels or equivalent intermediate (12 years) qualification with at least 2nd division (45% marks) from a recognized institute are eligible to apply.

Duration

The minimum duration for completion of BS degree is four years and maximum period of seven years to complete BS degree requirements.

Pathway for the Associate Degree Holders in Economics

- The candidates with AD Economics are eligible for admission in 5th Semester of BS Economics Programs. Such students shall complete the deficiency courses of General Education (if any) during 5th to 8th Semester.
- The candidates who acquired AD in Economics prior to the admission criteria (as stated above) are also eligible for admission in 5th Semester of BS Economics Programs. Such students shall also complete the deficiency courses of General Education (if any) during 5th to 8th Semester.
- The minimum eligibility for admission in the fifth semester in this case is 2.0 CGPA out of 4 in the prior qualification i.e., conventional two-year BA/BSc degree programs.
- Admission in 5th Semester is subject to the availability of seats.

Pathway for Conventional Two-Year BA Degree Holders

- Students having completed conventional two-year BA/BSc are allowed to be admitted in the fifth semester of the BS program, in which case students shall be required to complete deficiency courses through a bridging semester before commencement of the fifth semester as determined by the department.
- The minimum eligibility for admission in the fifth semester in this case is 45% cumulative score in the prior qualification i.e., conventional two-year BA/BSc degree programs.
- Admission in 5th Semester is subject to the availability of seats.



Exit with Associate Degree

The students after successful completion of 04 semesters in BS Economics Programs may exit with Associate Degree in Economics subject to completion of all requirements for the award of associate degree, i.e., Credit Hours, CGPA, and compulsory courses.

Degree Completion Requirements

To become eligible for award of BS degree, a student must satisfy the following requirements:

- a) Must have studied and passed the prescribed courses, totalling at least 130 credit hours.
- b) Must have earned CGPA (Cumulative Grade Point Average) of at least 2.0 on a scale of 4.0.

The students after successful completion of 04 semesters in BS Economics Program may exit with **Associate Degree in Economics** subject to completion of all requirements for the award of associate degree, i.e., Credit Hours, CGPA, and compulsory/major courses.

- Meeting of the Faculty of the **Department of Economics, UoCh affiliated colleges/institutions** will be held before the commencement of each semester to select general education courses from the provided courses. The decision of the faculty will be duly notified to the concerned quarters.
- The offered general education course/s shall be offered at least twice in the same semester so if a student fails the subject, they may reappear in the failed subject/s.



PROGRAM-WISE SCHEME OF STUDIES

Domain	Credit Hours	General Education Courses	Major Courses	Interdisciplinary Courses	Internship/Field Experience/Capstone Project
Total Cr Hr	135	36	81	12	06

Semester	General Education Courses CrHr	Major CrHr	Allied/Interdisciplinary Courses CrHr	Internship/Field Experience/Capstone Project CrHr	Total CrHr
1 st	09	06	03	-	18
2 nd	08	06	03	-	17
3 rd	11	06	03	-	20
4 th	08	06	03	-	17
5 th	-	15	-	-	15
6 th	-	18	-	-	18
7 th	-	12	-	03	15
8 th	-	12	-	03	15
8 Semesters Total Cr.hr	36	81	12	06	135



SEMESTER-WISE BREAKDOWN

(YEAR 1)

YEAR 01- First Semester			
Course Code	Course Title	Credit Hours	Course Type
ECO-111	Principles of Microeconomics	3(3-0)	Major
ECO-112	Mathematical Economics-1	3(3-0)	Major
ECO-113	Fundamentals of Sociology	3(3-0)	AC
ECO-114	Functional English	3(3-0)	GE
ECO-115	Islamic Studies	2(2-0)	GE
ECO-116	Civics and Community Engagement	2(2-0)	GE
	Any one subject from the following (Social Sciences)		
ECO-117	Principles of Political Science	2(2-0)	GE
ECO-118	Introduction to Cultural Studies	2(2-0)	GE
ECO-119	Introduction to Psychology	2(2-0)	GE
Total Credit Hours		18	

YEAR 01- 2nd Semester			
Course Code	Course Title	Credit Hours	Course Type
ECO-121	Principles of Macroeconomics	3(3-0)	Major
ECO-122	Statistics – I	3(3-0)	Major
ECO-123	English Comprehension & Composition	3(3-0)	AC
ECO-124	Principles of Management	3(3-0)	GE
ECO-125	Ideology and Constitution of Pakistan	2(2-0)	GE
	Any one subject from the following (Natural Sciences)		
ECO-126	Environmental Studies	3(2+1)	GE
ECO-127	Everyday Science	3(2+1)	GE
ECO-128	Ecology	3(2+1)	GE
Total Credit Hours		17	



(YEAR 2)

YEAR 02- 3rd Semester			
Course Code	Course Title	Credit Hours	Course Type
ECO-231	Intermediate Microeconomics	3(3-0)	Major
ECO-232	Statistics – II	3(3-0)	Major
ECO-233	Technical Writing & Presentation Skills	3(3-0)	AC
ECO-234	Foundation of Education	3(3-0)	GE
ECO-235	Introduction to International Relations	3(3-0)	GE
ECO-236	Exploring Quantitative Skills	3(3-0)	GE
	Any one subject from the following (Arts and Humanities)		
ECO-237	Creative Writing	2(2-0)	GE
ECO-238	Introduction to History	2(2-0)	GE
ECO-239	Introduction to Philosophy	2(2-0)	GE
Total Credit Hours		20	

YEAR 02- 4th Semester			
Course Code	Course Title	Credit Hours	Course Type
ECO-241	Intermediate Macroeconomics	3(3-0)	Major
ECO-242	Mathematical Economics-II	3(3-0)	Major
ECO-243	Communication Skills	3(3-0)	AC
ECO-244	Tools for Quantitative Reasoning	3(3-0)	GE
ECO-245	Information & Communication Technology	3(2+1)	GE
ECO-246	Entrepreneurship	2(2-0)	GE
Total Credit Hours		17	



(YEAR 3)

YEAR 03- 5th Semester			
Course Code	Course Title	Credit Hours	Course Type
ECO-351	Microeconomic Theory	3(3-0)	Major
ECO-352	Development Economics	3(3-0)	Major
ECO-353	Environmental Economics	3(3-0)	Major
ECO-354	Mathematical Economics	3(3-0)	Major
Select one subject from the list of optional courses			
ECO-355	Labour Economics	3(3-0)	Major
ECO-356	Energy Economics	3(3-0)	Major
ECO-357	Islamic Finance	3(3-0)	Major
ECO-358	Economics of Education	3(3-0)	Major
ECO-359	Economic Growth	3(3-0)	Major
Total Credit Hours		15	

YEAR 03- 6th Semester			
Course Code	Course Title	Credit Hours	Course Type
ECO-361	Macroeconomic Theory	3(3-0)	Major
ECO-362	Public Finance	3(3-0)	Major
ECO-363	Monetary Economics	3(3-0)	Major
ECO-364	Basic Econometrics	3(3-0)	Major
Select two subject from the list of optional courses			
ECO-365	History of Economic Thought	3(3-0)	Major
ECO-366	Poverty & Income Distribution	3(3-0)	Major
ECO-367	Political Economy	3(3-0)	Major
ECO-368	Population Economics	3(3-0)	Major
Total Credit Hours		18	



YEAR 04- 7th Semester			
Course Code	Course Title	Credit Hours	Course Type
ECO-471	Advanced Econometrics	3(3-0)	Major
ECO-472	Research Methodology	3(3-0)	Major
ECO-473	Internship	3(3-0)	Major
Select two subjects from the list of optional courses			
ECO-474	Applied Economics	3(3-0)	Major
ECO-475	Project appraisal and investment analysis	3(3-0)	Major
ECO-476	Islamic Economics	3(3-0)	Major
ECO-477	Issues in World Economy	3(3-0)	Major
ECO-478	General Equilibrium & Welfare Economics	3(3-0)	
Total Credit Hours		15	

YEAR 04- 8th Semester			
Course Code	Course Title	Credit Hours	Course Type
ECO-481	International Economics	3(3-0)	Major
ECO-482	Issues in Pakistan Economy	3(3-0)	Major
ECO-483	Capstone Project	3(3-0)	
Select two subjects from the list of optional courses			
ECO-484	Urban Economics	3(3-0)	Major
ECO-485	Development Policy	3(3-0)	Major
ECO-486	Economics of Climate Change	3(3-0)	Major
ECO-487	Fiscal Policy	3(3-0)	Major
ECO-488	Islamic Banking: Theory and Practice	3(3-0)	Major
	Dynamic Optimization		
Total Credit Hours		15	



COURSES OUTLINE

(YEAR 1)

ECO-111 PRINCIPLES OF MICROECONOMICS

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

COURSE CONTENTS

Introduction

- The Economic Problem
- Economic agents and economic problem
- Economics as a science of choices between competing wants and limited resources
- Classification of economics,
- Importance and scope of micro-economics
- Basic concepts: Commodities, Income and Resources, Production and Consumption, Exchange and Distribution.

Demand & Supply:

- Demand, Demand Function
- Demand Curve, Changes in Demand, Law of Demand, Shift in Demand, Factors Affecting Demand
- Supply Function, Supply Curve, Changes in Supply, Factors Affecting Supply, Law of Supply, Producer Surplus, Equilibrium of Demand and Supply
- Market Equilibrium, Price Controls, Taxes and Subsidies

Elasticity of Demand & Supply:

- Elasticity of Demand & Supply
- Income Elasticity of Demand & Supply
- Cross Elasticity of demand
- Elasticity & its applications

Consumer Behavior:

- Utility Analysis (Cardinal Approach)
- Marginal Utility
- Law of Diminishing Marginal Utility and Law of Equi-Marginal Utility
- Consumer Equilibrium
- Ordinal Approach of Consumer Behavior
- Indifference Curves



- Features of Indifference Curves
- Budget Line
- Consumer Equilibrium
- Comparison between two approaches

Production and Costs

- Production function
- Primary inputs, factors of production, Secondary/intermediate inputs
- Raw material and energy
- The laws of returns
- Revenues of the firm: total, average and marginal revenues
- Total, average and marginal costs
- Short-run and long run costs
- Equilibrium of the firm.

Market Structure:

- Basics of Perfect Competition, Monopoly, Monopolistic Competition and Oligopoly
- Different Possibilities of Short Run firm Equilibrium under Perfect Competition
- Profit Maximization in Short-run and long-run under Perfect Competition
- Supply Curve of Perfectly Competitive Firm under Short and Long Run
- Short run and long run Equilibrium under Monopoly

RECOMMENDED BOOKS

- Mankiw, G. - Principles of Economics - 2nd Edition (2001), South- West Publishers.
- Samuelson and Nordrons - Economics –18th Edition (2004)-McGraw Hill.
- McConnel and Bruce - Principles of Economics -17th Edition (2006)-McGraw Hill.



Contact Hours: 3-0

Pre-requisites: None

COURSE CONTENTS

Preliminaries

- sets and set operations
- Relations, functions and their properties
- number systems

Functions of one real variable

- Graphs
- Elementary types of functions: quadratic, polynomial, power, exponential, logarithmic
- Sequences and series
- Continuous functions: characterizations, properties with respect to various operations and applications
- Differentiable functions: characterizations, properties with respect to various operations and applications
- Second and higher order derivatives: properties and applications

Single-variable optimization

- Geometric properties of functions
- convex functions, their characterizations Applications
- local and global optima
- geometric characterizations, characterizations using calculus and applications

Integration of functions

- Areas under curves
- Indefinite integrals
- the definite integral

RECOMMENDED BOOKS

- K. Sydsaeter and P. Hammond, Mathematics for Economic Analysis, Pearson Educational Asia, Delhi, 2002.
- A.C. Chiang, Fundamental Methods of Mathematical Economics. N.Y, McGraw Hill Co, Latest edition.

ECO-113 FUNDAMENTALS OF SOCIOLOGY

Credit Hours: 3 (3-0)



Contact Hours: 3-0

Pre-requisites: None

Course Objectives:

The course is designed to introduce the students with sociological concepts and the discipline. The focus of the course shall be on significant concepts like social systems and structures, socio-economic changes and social processes. The course will provide due foundation for further studies in the field of sociology.

Course Outline:

1. Introduction

- Historical back ground of Sociology
- Definition, Scope, and Subject Matter
- Sociology as a Science
- Sociological Perspectives
- Functionalist, Conflict and Interactionist Perspective
- Relationship of Sociology with other Social Sciences (Political Science, Economics, Psychology)

2. Community, Society, Associations and Organizations

- Community Introduction, Definition, Elements and Types
- Society, Definition, Types
- Difference between Society and community

2.1. Associations, Meaning and definition

- Non-Voluntary
- Voluntary Organization
- Informal
- Formal

3. Social Interaction

- Levels of Social Interaction



- Process of Social Interaction
 - Cooperation
 - Competition
 - Conflict
 - Accommodation
 - Acculturation and diffusion
 - Assimilation
3. Social Groups
- Definition & Functions
 - Classification of social groups
 - In-groups and out- groups
 - Primary and Secondary group
 - Reference groups
 - Informal and Formal groups
 - Pressure groups
 - Importance of Group Life
4. Culture
- Definition, aspects and characteristics of Culture
 - Material and non-material culture
 - Ideal and real culture
- 4.1. Elements of culture
- Beliefs
 - Values
 - Norms and social sanctions
- 4.2. Organizations of culture
- Traits & Complexes
 - Patterns, Ethos & Theme
 - Cultural Relativism
 - Sub Cultures & Counter Culture



5. Socialization & Personality
 - Role and status
 - Socialization, definitions, and types of socialization
 - Agencies of socialization and its importance
5. 1. Personality, introduction, definitions and factor in development of personality.
 - Personality and formation of Self.
 - Theories of personality development, Eriksson stages, CH Cooley the looking glass self, Sigmund Freud (Id, Ego, Super-Ego)
6. Deviance, Social Order and Social Control
 - Deviance, Definition, types of deviance
 - Social control, definitions and importance
 - Formal and informal methods of social control

Suggested Readings:

1. Gidden, A. (2002). Introduction to Sociology. UK: Polity Press.
2. Henslin. J. M. (2004). Sociology: A Down to Earth Approach. Toronto: Allen and Bacon.
3. Kerbo, H. R. (1989). Sociology: Social Structure and Social Conflict. New York: Macmillan Publishing Company.
4. Tischler, H. L. (2002). Introduction to Sociology (7th ed.) New York: The Harcourt Press.
5. Horton Paul B. and hunt, Chester (1990), sociology Singapore: McGraw Hill company
6. Macions, J.J. (2015). Sociology (16th Ed.)
7. Sociology – 1,2 by Allama Iqbal open university, Islamabad
8. Taga, Abdul Hameed (2000) an Introduction to Sociology, Lahore



ECO-114 FUNCTIONAL ENGLISH

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

COURSE CONTENTS

- Semantics: antonyms, synonyms, homonyms – one word substitution
- (Syntax): traditional grammar, parts of speech, major word classes, further classifications (regular, countable; uncountable; singular; plural), pronouns, verbs, adjectives, adverbs, minor word classes: preposition, conjunctions, interjections, auxiliary verbs and determiners, kinds of verbs: finite and non-finite
- Syntax Modern Grammar – sentence structure, types of sentences based on function, mood, transformation, inversion of sentences, analysis of complex sentences, subject, Predicate, complements, direct and indirect objects, phrases, syntactical rules (subject and verb agreement), synthesis of sentences, clauses – types and functions
- Syntax: tense and voice: structure of tenses, function, conversion into negative and interrogative, active and passive voice and usage, punctuation
- (Narration): direct and indirect speech: rules of conversion,
- Structural words: Articles and usage, Discourse: composition and comprehension, precise writing.

RECOMMENDED BOOKS

- Eastwood, J (2005): Oxford Practice Grammar. UK: Oxford
- Martin & Wren (2007): High School, English Grammar & Composition.: S Chand and Co.Ltd: New Delhi
- Martinet & Thomson (1992): A practical English Grammar. Oxford University Press
- Swan, M (2005): Practical English Usage. UK: Oxford University Press
- Shah, Sayyid (2006): Exploring the world of English, Ilmi Kitab Khana: Lahore



ECO-115 ISLAMIC STUDIES

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

COURSE CONTENTS

Introduction to Quran Studies

- Basic Concepts of Quran
- History of Quran
- Uloom-ul -Quran

Study of Selected Text of Holly Quran

- Verses of Surah Al-Baqra Related to Faith (Verse No-284-286)
- Verses of Surah Al-Hujrat Related to Adab Al-Nabi (Verse No-1-18)
- Verses of Surah Al-Mumanoon Related to Characteristics of faithful (Verse No-1-11)
- Verses of Surah al-Furqan Related to Social Ethics (Verse No.63-77)
- Verses of Surah Al-Inam Related to Ihkam (Verse No-152-154)

Study of Selected Text of Holly Quran

- Verses of Surah Al-Ihzab Related to Adab al-Nabi (Verse No.6,21,40,56,57,58.)
- Verses of Surah Al-Hashar (18,19,20) Related to thinking, Day of Judgment
- Verses of Surah Al-Saf Related to Tafakar,Tadabar (Verse No-1,14)

Seerat of Holy Prophet (S.A.W) I

- Life of Muhammad Bin Abdullah (Before Prophet Hood)
- Life of Holy Prophet (S.A.W) in Makkah
- Important Lessons Derived from the life of Holy Prophet in Makkah

Seerat of Holy Prophet (S.A.W) II

- Life of Holy Prophet (S.A.W) in Madina
- Important Events of Life Holy Prophet in Madina
- Important Lessons Derived from the life of Holy Prophet in Madina

Introduction To Sunnah

- Basic Concepts of Hadith
- History of Hadith
- Kinds of Hadith
- Uloom-ul-Hadith
- Sunnah & Hadith
- Legal Position of Sunnah

Selected Study from Text of Hadith Introduction to Islamic Law & Jurisprudence

- Basic Concepts of Islamic Law & Jurisprudence
- History & Importance of Islamic Law & Jurisprudence



- Sources of Islamic Law & Jurisprudence
- Nature of Differences in Islamic Law
- Islam and Sectarianism

Islamic Culture & Civilization

- Basic Concepts of Islamic Culture & Civilization
- Historical Development of Islamic Culture & Civilization
- Characteristics of Islamic Culture & Civilization
- Islamic Culture & Civilization and Contemporary Issues

Islam & Science

- Basic Concepts of Islam & Science
- Contributions of Muslims in the Development of Science
- Quran & Science

Islamic Economic System

- Basic Concepts of Islamic Economic System
- Means of Distribution of wealth in Islamic Economics
- Islamic Concept of Riba
- Islamic Ways of Trade & Commerce

Political System of Islam

- Basic Concepts of Islamic Political System
- Islamic Concept of Sovereignty
- Basic Institutions of Govt. in Islam

Islamic History

- Period of Khlaft-E-Rashida
- Period of Ummayyads
- Period of Abbasids

Social System of Islam

- Basic Concepts of Social System of Islam
- Elements of Family
- Ethical Values of Islam

RECOMMENDED BOOKS

- Hameed ullah Muhammad, “Emergence of Islam” , IRI, Islamabad
- Hameed ullah Muhammad, “Muslim Conduct of State”
- Hameed ullah Muhammad, ‘Introduction to Islam
- Mulana Muhammad Yousaf Islahi,”
- Hussain Hamid Hassan, “An Introduction to the Study of Islamic Law” leaf PublicationIslamabad, Pakistan.
- Ahmad Hasan, “Principles of Islamic Jurisprudence” Islamic Research Institute, International Islamic University, Islamabad (1993)
- Mir Waliullah, “Muslim Jurisprudence and the Quranic Law of Crimes” Islamic BookService (1982)



- H.S. Bhatia, “Studies in Islamic Law, Religion and Society” Deep & Deep Publications New Delhi (1989)
- Dr. Muhammad Zia-ul-Haq, “Introduction to Al Sharia Al Islamia” Allama Iqbal Open University, Islamabad (2001)

List of General Education, Social Sciences

ECO-116 CIVICS AND COMMUNITY ENGAGEMENT

Credit Hours: 2 (2-0)

Contact Hours: 2-0

Pre-requisites: None

Description

Description

Teach students the importance and role of active citizenship in promoting a productive, harmonious and development society/ world. Educate students about the importance of concepts, skills and philosophy of community linkages in developing a sustainable society. Inculcate the importance of community involvement for ensuring an improved, tolerant and generative society/ world. Provide an opportunity to the students to develop their relationship with the community.

Contents

1. Introduction to citizenship education and Community Engagement
2. Identity, Culture, and Social Harmony
3. Multi-cultural society and inter-cultural dialogue
4. Active Citizen: Locally Active, Globally Connected
5. Human rights, constitutionalism and citizens' responsibilities
6. Social issues in Pakistan
7. Social Action Project
8. Assignment (Formative/Summative)

Recommended Books

1. John J. Macionis, Linda Marie Gerber, Sociology (New York: Pearson Education, 2010)
2. Community Development, Social Action and Social Planning by Alan Twelvetrees
12 May 2017



3. The Constitution of the Islamic Republic of Pakistan (Pakistan: The National Assembly of Pakistan,2012),also available online at the official website of National Assembly of Pakistan: <http://na.gov.pk/uploads/documents/13333523681951.pdf>(Accessed on April 25, 2017)

Suggested Books

1. Anne Karin Larsen, Participation in Community Work: International Perspectives (Vishanthie Sewpaul, Grete Oline Hole,2013)
2. British Council, Active Citizen's Social Action Projects Guide (Scotland: British Council,2017)

ECO-117 PRINCIPLES OF POLITICAL SCIENCE

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

Objectives:

The objective of this course is to introduce the students with the fundamentals of the subject of Political Science and prepare them for advanced studies in the forthcoming semesters. The very basic concepts and terminology commonly used in the further courses of studies are taught to make the students friendly with the subject.

Contents:

1. Definition, Nature, Scope and Sub-fields of Political Science.
2. Relationship of Political Science with other social sciences.
3. Approaches to the study of Political Science: Traditional and behavioral approach.
4. State: its origin and evolution; Western and Islamic concepts of State,
5. Nation and Sovereignty.
6. Basic concepts of Political Science: Power, Authority, Legitimacy
7. Organs of Government: Legislature, Executive, Judiciary.
8. Forms of State: Unitary, Federation, Confederation.
9. Forms of Government: democracy, Authoritarian Parliamentary, Presidential
10. Constitution: Definition, sources, kinds and amendments.



Note: Sub-fields of Political Science include: Political Philosophy/Theory; Comparative Politics; International Relations; Public Administration/ Public Policy; Local Government, etc.

Recommended Books:

1. Ahmad, Sheikh Bashir, Riyasat Jo Ilm (Sindhi meaning Science of State), Jamshoro, Institute of Sindhology, University of Sindh, 1985.
2. Haq, Mazher ul, Theory and Practice in Political Science, Lahore Bookland, 1996.
3. Ian Mackenzi (Ed.), Political Concepts: A Reader and Guide, Edinburgh, University Press, 2005.
4. Mohammad Sarwar, Introduction to Political Science, Lahore IImi Kutub Khana, 1996.

ECO-118 INTRODUCTION TO CULTURAL STUDIES

Credit Hours: 2 (2-0)

Contact Hours: 2-0

Pre-requisites: None

Course Description

Cultural studies is the exploration of "culture," what Raymond Williams calls nothing less than "one of the two or three most complicated words in the English language." Cultural studies analyzes the artistic, social, political, and historical texts and objects that help construct our contemporary lives, and it assumes that such objects go well beyond "mere entertainment" and affect deeply how we perceive class, race, gender, and other markers of identity. As an introduction to the theory and practice of cultural studies, this course will familiarize students with some of the most important thinkers and methodologies in the field and will allow students to use some of the tools of critical analysis to analyze different forms of cultural production, including literature, popular culture, and print and electronic media.

Course Contents

- Cultural Studies As Politics
- The Parameters Of Cultural Studies
- Disciplining Cultural Studies



- Key Concepts In Cultural Studies
- Culture And Signifying Practices
- Representation
- Materialism And Non-Reductionism
- Articulation
- Power
- Ideology And Power
- Popular Culture
- Texts and Readers
- Subjectivity and Identity
- Individual, Collective and National Identities
- Race, Gender, Sexualities, And Class
- Marxism And Cultural Studies
- The Impact of Globalisation
- Digital Media Cultures
- Cultural Politics and Policy
- Diversity and Resistance
- Key Methodologies in Cultural Studies

ECO-119 INTRODUCTION TO PSYCHOLOGY

Credit Hours: 2 (2-0)

Contact Hours: 2-0

Pre-requisites: None

Course Objectives

To describe psychology with major areas in the field, to identify the parameters of this discipline. Distinguish between the major perspectives on human thought and behavior. Appreciate the variety of ways psychological data are gathered and evaluated.

To gain insight into human behavior and into one's own personality or personal relationships. Explore the ways that psychological theories are used to describe, understand, predict, and control or modify behavior.

Course Outline



Introduction to Psychology:

Nature and Application of Psychology with special reference to Pakistan.

Historical Background and Schools of Psychology (A Brief Survey)

Methods of Psychology

Observation

Case History Method

Experimental Method

Survey Method

Interviewing Techniques

Biological Basis of Behavior

Neuron: Structure and Functions

Central Nervous System and Peripheral Nervous System

Endocrine Glands

Sensation, Perception and Attention

a. Sensation

Characteristics and Major Functions of Different Sensations

Vision: Structure and function of the Eye.

Audition: Structure and functions of the Ear.

Perception

Nature of Perception

Factors of Perception: Subjective, Objective and Social

Kinds of Perception

Spatial Perception

Temporal Perception; Auditory Perception

Attention

Factors, Subjective and Objective

Span of Attention

Fluctuation of Attention

Distraction of Attention (Causes and Control)

Motives

Definition and Nature

Classification

Primary (Biogenic) Motives: Hunger, Thirst, Defecation and Urination, Fatigue, Sleep, Pain, Temperature, Regulation, Maternal Behavior, Sex Secondary (Sociogenic)



Motives: Play and Manipulation, Exploration and Curiosity, Affiliation, Achievement and Power, Competition, Cooperation, Social Approval and Self Actualization.

Emotions

Definition and Nature

Physiological changes during Emotions (Neural, Cardial, Visceral, Glandular), Galvanic Skin Response; Pupillometrics

Theories of Emotion

James Lange Theory; Canon-Brad Theory

Schechter-Singer Theory

Learning

Definition of Learning

Types of Learning: Classical Operant Conditioning, Methods of Learning:

Trial and Error; Learning by Insight; Observational Learning

Memory

Definition and Nature

Memory Processes: Retention, Recall and Recognition

Forgetting: Nature and Causes

Thinking

Definition and Nature

Tools of Thinking: Imagery, Language, Concepts

Kinds of Thinking

Problem Solving, Decision Making, Reasoning

Individual References

Definition concepts

Intelligence, Personality, aptitude, achievement

Recommended Books

Atkinson R. C., & Smith E. E. (2000). Introduction to psychology (13th ed.).

Harcourt Brace College Publishers. Fernald, L. D., & Fernald, P. S. (2005).

Introduction to psychology. USA: WMC Brown Publishers.

Glassman, W. E. (2000). Approaches to psychology. Open University Press. Hayes, N. (2000). Foundation of psychology (3rd ed.).

Thomson Learning. Lahey, B. B. (2004).

Psychology: An introduction (8th ed.). McGraw-Hill Companies, Inc. Leahey, T. H. (1992).



A history of psychology: Main currents in psychological thought. New Jersey: Prentice-Hall International, Inc. Myers, D. G. (1992).

Psychology. (3rd ed.). New York: Wadsworth Publishers.

Ormord, J. E. (1995). Educational psychology: Developing learners. Prentice- Hall, Inc

SEMESTER-II

ECO-121 PRINCIPLES OF MACROECONOMICS

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

COURSE CONTENTS

Introduction

The economy in aggregate, Complexities of the world of business, Scope of macroeconomics, Brief account of the development of macroeconomics after the World War-II, Concept of business cycles: Boom and Depression, Concepts of Inflation and Unemployment, Macroeconomic variables and their mutual relationship, Macro-models as abstraction from the real economy.

National Income

Definition and concept of national income, Measures of national income: Gross Domestic Product (GDP) and Gross National Product (GNP), GDP at factor cost and at market prices, Computation of national income: Product, Income and Expenditure approaches, Circular flow of income, Nominal versus Real income, Per capita income and the standard of living.

Components of Aggregate Demand

The Concept of Open and closed economy models, Concept of aggregate markets: Product, Money, Labor and Capital markets, Components of aggregate demand: Consumption, Investment and Government spending, Income and expenditure identities.

Money and Banking Money:

definition, forms and functions, Central Bank and its functions with reference to the State Bank of Pakistan, Commercial banking, The Quantity Theory of money, types of Inflation Monetary policy: brief introduction.



Public Finance and Taxation

Sources of public revenue, Various forms of taxes: Direct and Indirect, Income and Commodity taxes, Sales, Excise, Customs, Non-tax revenues, Major heads of public expenditure, Revenue and Capital account, Concept of budget deficits and sources of filling the gaps, Deficit financing, Fiscal policy: meaning and objectives.

International Trade

Global distribution of resources, Concept of imports and exports, Theory of absolute and comparative advantage, Currency exchange rates, Balance of Payments: causes of deficits in BOP of Pakistan and remedial measures, Custom Unions, The problem of external debt, Commercial Policy: objectives and scope.

RECOMMENDED BOOKS

- Mankiw, G – Principles of Economics – 2nd Edition (2001) – South-West Publishers.
- Samulson and Nordrons - Economics – 18th Edition (2004) – McGraw Hill. Inc.
- Parkin, Michael - Macroeconomics, 7th Edition (2004) – Prentice Hall.
- Miller, R.L. – Economics Today – 14th Edition (2005) – Addison

ECO-122 STATISTICS – I

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

COURSE CONTENTS

What is Statistics?

- Introduction to Statistics
- Key Statistical Concepts Practical Application
- Application of Statistics in Economics

Collection and Presentation of data

- Types of Data
- Collection of Primary and Secondary Data
- Presentation of Data
- Frequency Distribution
- Graphical Techniques for Quantitative data
- Scatter diagrams, Pie Charts, Bar Charts and Line Charts.

Numerical Descriptive Measures



- Measures of Central Location (A.M, G.M, H.M, Median, quartiles and mode)
- Measures of Variability (Range, quartile deviation, , standard deviation, variance and coefficient of variation)
- Interpreting the Standard Deviation and Coefficient of Variation

Probability

- Introduction, Assigning Probabilities to events
- Rules of counting
- Combination and permutation
- Rules of Probability
- Conditional Probability

Random Variables and Probability Distributions

- Introduction, Distribution Function
- Discrete and Continuous Random Variables and its Density Functions
- Binomial probability distribution (Mean and Variance)
- Normal Probability Distribution (Mean and Variance).

Time Series and Forecasting

- Introduction
- Variation in time Series
- Trend Analysis
- Cyclical, Seasonal and Irregular Variation
- Time Analysis in Forecasting.

RECOMMENDED BOOKS

- Basic Statistics for Business and Economics by EARLK. BOWN AND MARTINSTARR
- Probability and Statistics by M.R. Spiegel, J.L. Schiller, and R.L., Sirinivasan (2000), 2nd edition Schaums Outlines Series. McGraw Hill. N.Y.
- Statistics for Management, Richard I. Levin, and David S. Rubin, Prentice-Hall International, Inc
- Elementary Statistics, 8th Edition, by Prof. Allan G. Bluman
- Introduction to Statistical Theory, Part 1 & 2, by Prof. Sher Muhammad Chaudhry.(2009 Edition)

ECO-123 ENGLISH COMPREHENSION & COMPOSITION

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

COURSE CONTENTS

- Comprehension skills: previewing, reading for main ideas, using context for vocabulary, scanning for details, making inferences,



identifying exceptions, and referring to the passage.

- Basic grammar review: definition of a sentence, sentence structures, punctuation marks, modifiers (adjectives and adverbs), verb tense, subject verb agreement, article/determiner, word order, prepositions.
- Advanced sentence structures: misplaced modifiers, dangling modifiers, parallelism, sentence fragments, run-on sentences.
- Pre-writing techniques: free writing, note keeping, brain storming, mind mapping, journalistic questions, exercises for students.
- Paragraph writing: unity, topical sentence and supporting details, relevant exercises.
- Essay writing: characteristics, types, organization, common methods of beginning, cohesion, coherence, practice activities.
- Précis writing: need/importance, characteristics, do's and don'ts in précis writing, practice activities.
- Message composition: memo writing, email messages, CV/resume writing, cover letter
- Word Skills: vocabulary building, synonyms, antonyms, effective use of thesaurus, dictionary skills.
- Presentation skills: assessing the reason and receivers, delivering the presentation, gathering material, organization of data, use of appropriate language, use of graphs, figures, and visual aids, involving the audience

RECOMMENDED BOOKS

- Denise Pivarnik (2006): Kaplan AP English Language and Composition., Kaplan Publishing: New York
- John E Warriner (2009): English Composition and Grammar, Harcourt School publications.

ECO-124 PRINCIPLES OF MANAGEMENT

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

COURSE CONTENTS

An Overview of Management

- Definitions of Management
- Characteristics of Management
- Difference between Management and Administration.

Functions of Management

- Functions a brief Treatment
- Planning



- Organizing
- Staffing
- Directing
- Controlling
- Coordination.

Principles of Management

- Taylor's Principles
- Fayol's Principles
- General Principles
- Importance and Scope of Management.

Planning

- Definition, Nature and Characteristics
- Importance of Planning
- Limitations of Planning
- Essentials of a good Plan
- Steps in Planning Process
- Types of Planning.

Decision Making

- Meaning and Elements of Decision Making
- Importance and Process of Decision Making
- Salient Features of a good or an Effective Decision
- An Effective Decision Making.

Organizing

- Nature and Importance of Organization
- Steps in the Process of Organization
- Formal and Informal Organization
- Principles of Organization.

Communication

- Definition of Communication
- Process of Communication
- Importance of Communication

Staffing

- Definition of Staffing
- Sources of Recruitment
- Steps in Selection Process
- Orientation or Induction

Directing / Direction

- Definition, Nature, and Importance
- Principles & Techniques.

Leadership

- Definition, Traits / Qualities of a Successful Leader
- Leadership Styles



- Function of Leadership.

Controlling

- Definition of Controlling
- Characteristics of Controlling
- Objectives of Controlling

RECOMMENDED BOOKS

- Principles and Practice of Management 1998 Edition, Terry, Prentice Hall USA.
- Practice of Management, 1997 Edition P.F. Duck Ker, Macmillan, London.
- Fundamentals of Management 2004 Edition, Prof. Fazli Wahid IBMS/CS Agricultural University Peshawar.

ECO-125 IDEOLOGY AND CONSTITUTION OF PAKISTAN

Credit Hours: 2 (2-0)

Contact Hours: 2-0

Pre-requisites: None

Course Introduction

Pakistan studies is an important course at this university in which students study about their motherland. The following are the specific objective of the course • to develop vision of Historical Perspective, Government, Politics, Contemporary Pakistan, ideological background of Pakistan. • To study the process of governance, national development, issues arising in the modern age and posing challenges to Pakistan.

Course Outline

Historical background of Pakistan: Muslim society in Indo-Pakistan, the movement led by the societies, the downfall of Islamic society, the establishment of British Raj- Causes and consequences. Political evolution of Muslims in the twentieth century: Sir Syed Ahmed Khan; Muslim League; Nehru; Allama Iqbal: Independence Movement; Lahore Resolution; Pakistan culture and society, Constitutional and Administrative issues, Pakistan and its geopolitical dimension, Pakistan and International Affairs, Pakistan and the challenges ahead.

Reference Materials: (or use any other standard and latest books)

1. The Emergence of Pakistan, Chaudary M., 1967
2. The making of Pakistan, Aziz. 1976
3. A Short History of Pakistan, I. H. Qureshi, ed., Karachi, 1988



List of General Education, Natural Science

ECO-126 ENVIRONMENTAL STUDIES

Credit Hours: 3 (2+1)

Contact Hours: 3-2

Pre-requisites: None

Course Description

In the last few decades “environment” has become a buzz word. A basic understanding of this term has become necessary in every field of life. Therefore, this course is designed for non-environmental science students keeping in view their diverse background of science and nonscience subjects. This course only provides a basic understanding of the environment around us which is necessary to understand the environmental problems we face in our everyday life. This course is designed to provide a basic understanding of the environment, its components and its processes. The course will also provide a brief history and background of the environmental movements.

The course is designed to demonstrate knowledge and understanding of the environmental pollution, its causes and impact on human beings and ecosystem. Course will take a multidisciplinary approach and will cover contemporary environmental problems. Course will be beneficial in general to all students but particularly for students of economics, sociology, communication studies, management sciences and law due to wide scale application of these concepts in these fields.

The course will provide an introduction to a range of "global environmental challenges" facing humanity. It will provide the necessary background to understanding the policies, politics, governance and ethics, and decision-making processes that underpin the causes of, and responses to, environmental change. It will include an appreciation of the social construction of the term global environmental challenges and the implications of this.

Course Objectives

The course is designed to:

- provide students with a basic understanding of the environment, its components and processes.
- develop student capabilities to understand the man-environment interaction and ways human can impact environment.

Provide:

- an introduction of human attitude towards environment and how it has changed overtime,
- overview of the pollution; its causes and impacts,
- understanding of the role of human activities in causing environmental pollution,
- outline of the factors including physic-chemical, biological and socio-economic which contribute to accelerate or de-accelerate the rate of pollution.



Course Contents

1. Environment

- Definition and Concept
- Ecosystem, its component; material and energy flow in an ecosystem;
- Terrestrial and aquatic ecosystems; biomes and their distribution;
- Atmosphere: composition, air pollution, causes and its impacts.
- Hydrosphere; water distribution on earth, water quality and quantity problems.
- Lithosphere; earth structure, soil resources, pollution and problem.
- Human population and resource use, Human attitude towards environment; history and background.

2. Environmental Pollution

- Concept,
- history and background,
- Pollution sources and types: point and non-point sources.
- Air pollution; sources, types of pollutants, sources and fate, impacts on human health and on environment,
- Water pollution; water quality and quantity problems, sources, types of pollutants, sources and fate, impacts on human health and on environment, Solid Waste,
- Noise Pollution, Toxic chemicals in environment, approaches to manage environmental pollution.

3. Global Environmental Problems

- Ozone Depletion
- history,
- science,
- world response

4. Climate Change

- a myth or reality,
- Conflicting Theories,
- climate change scientific basis,
- its impacts, world response,
- climate change politics.
- Acid Rain.

5. Human Population and sustainability, International environmental laws.

Recommended Readings

1. Environmental Science: Earth as a Living Planet, Botkin, D.B & Keller, E.A. 9th Ed. John Wiley & Sons, 2013.
2. Environmental Science: systems and solutions, McKinney, M.L., Schoch, R.M. & Yonavjak, L. 5th Ed. Jones & Bartlett Publishers, 2013
3. Environmental Science: Toward a Sustainable Future, Wright, R.T. & Nebel, B.J. 10th Ed. Pearson Educational, 2007.
4. Environmental Science: Earth as a Living Planet, Botkin, D.B & Keller, E.A. 9th Ed. John Wiley & Sons, 2013.
5. Environmental Science: systems and solutions, McKinney, M.L., Schoch, R.M. & Yonavjak, L. 5th Ed. Jones & Bartlett Publishers, 2013



6. Environmental Science: Toward a Sustainable Future, Wright, R.T. & Nebel, B.J. 10th Ed. Pearson Educational, 2007.
7. Environmental Science: working with the Earth. 11th Ed. Miller, G., Tyler. Cengage Learning, 2005.
8. Environmental Science: Earth as a Living Planet, Botkin, D.B & Keller, E.A. 9th Ed. John Wiley & Sons, 2013.
9. Environmental Science: systems and solutions, McKinney, M.L., Schoch, R.M. & Yonavjak, L. 5th Ed. Jones & Bartlett Publishers, 2013
10. Environmental Science: Toward a Sustainable Future, Wright, R.T. & Nebel, B.J. 10th Ed. Pearson Educational, 2007.

ECO-127 EVERYDAY SCIENCE

Credit Hours: 3 (2+1)

Contact Hours: 3-2

Pre-requisites: None

Course Description

In this course, students consider basic concepts from several scientific disciplines, such as biology, physics, and chemistry. Through the examination of everyday occurrences, learners are introduced to scientific ways of thought and to the problem-solving methods used by scientists.

Course Contents

I. Physical Sciences

- Constituents and Structure: - Universe, Galaxy, Light Year, Solar System, Sun, Earth,
- Process of Nature: - Solar and Lunar Eclipses, Rotation and Revolution, Weather Variables .
- Natural Hazards and Disasters:- Earth Quake, Volcanic Eruption, Tsunami, Floods, Avalanche, Travelling Cyclone (Tropical Cyclone, Middle Latitude Cyclone and Tornadoes), Drought, Wildfire, Urban Fire.
- Energy Resources:- Sources of Energy (Renewable i.e. LED Energy, Solar Energy, Wind Energy and Non-Renewable Energy conservation and its sustainable use.

II. Biological Sciences

- Plant and Animal Kingdom:- A brief survey of plant and animal kingdom to pinpoint similarities and diversities in nature.
- Common Diseases and Epidemics, Pandemic:- Polio, Diarrhea, Malaria, Hepatitis, Dengue their Causes and Prevention.

III. Environmental Science

- Environment: - (Water Cycle, Major Water Compartments),



- Atmospheric Pollution:- Types, Sources, Causes and effects of major air pollutants Regional and Global air pollution issues (Acid-rain, Ozone Depletion, Greenhouse Effect and Global Warming). International agreements on air pollution control (Montreal Protocol and Kyoto Protocol).
- Water Pollution:- Types, sources, causes and effects of major water pollutants (Synthetic Organic Chemicals, Oxygen Demanding Wastes, Plant Nutrients, Thermal Pollution, Infectious Agents, Sediments, Radioactivity, Heavy Metals and Acids). Drinking water quality and standards.
- Land Pollution:- Solid waste management and disposal.
- Population Planning.

IV. Food Science

- Concept of Balance Diet:- Vitamins, Carbohydrates, Protein, Fats and oil, Minerals, Fiber.
- Quality of Food:- Bioavailability of Nutrients, Appearance, Texture, Flavor, Quality of Packed and Frozen Food, Food Additives, Preservatives and Antioxidants
- Food Deterioration and its Control:- Causes of Food Deterioration, Adulteration, Food Preservation.

Suggested Readings

1. Lancelot Hogben The Impact of Science on Society 2005
2. Isaac Asimov, A. S. a. N. A. S. a. Fundamentals of Forensic Science 2010
3. Max M. Houck, Jay A. Siegal Forensic Science Fundamentals & Investigation 2008
4. Harm J. de Blij, Peter O. Muller, James E. Burt, Joseph A. Mason Physical Geography - Science and Systems of the Human Environment 2009
5. Norman N. Potter, Joseph H. Hotchkiss Environmental Science: Systems and Solutions. 5th ed. 2013
6. Michael L. McKinney, Robert Schoch and Logan Yonavjak Environmental Science: A Global Concern 2012 William P. Cunningham, Barbara Woodworth Saigo



ECO-128 Ecology

Credit Hours: 3 (2+1)

Contact Hours: 3-2

Pre-requisites: None

Course objectives:

To acquaint the students with the knowledge of ecosystems and the environment.

Course Contents: Concept, overall structure and components of Ecosystem, Energy flow and Biogeochemical cycling, Energy transfer (Food chain, Food webs, Food cycle, Trophic levels), Ecological pyramids, Productivity of ecosystems, Factors influencing environments and habitats, Impact of man on ecosystem, Fundamental of population ecology and community ecology, Human impacts on ecosystems, The Atmosphere (Composition, Minor and major gases, Water in atmosphere, Aerosols, Global circulation pattern), Pollution (Air, Water, Land, Thermal, Radiation and Noise), Climate Change (Green House Effect and Global Warming), Ozone Depletion (Ozone-structure, Properties/Significances, Ozone destroying catalysts, Natural, Anthropogenic, Antarctic ozone hole, Changing ozone Level, Impact on biosphere), Waste Type, Disposal and Management, Environmental Ethics.

Practicals: Study of pond freshwater ecosystem, Study of vegetation profile, Study of grassland, rangeland and forest, Study of some biotic and abiotic factors of grassland, rangeland and aquatic ecosystem, methods of sampling. Measurements and description of plant communities by different methods. Study of decomposition of leaf litter by organisms.

Recommended Text Books:

1. Davet, P. 2004. Microbial ecology of soil and plant growth. Science Publishers.
2. Nico, M., Straalen, V., and Roelofs, D., 2006. An Introduction to Ecological Genomics. Oxford University Press.
3. Aston, A., Harris, S., Lowe, A., 2004. Ecological Genetics: Planning and Application. Blackwell Science (UK).
4. Costa, L. G., and Eaton, D. L., 2006. [Gene-Environment Interactions: Fundamentals of Ecogenetics](#). John-Wiley and Son Limited.
5. Freeland, J. R., 2005. [Molecular Ecology](#). John-Wiley and Son Limited.
6. Light, A and Rolston III.H. 2003. Environmental Ethics. Blackwell Publishers Ltd. U.S.A.
7. [Wenz](#), P. S., 2001. Environmental Ethics Today, Oxford University Press.
8. [Louis P. and Pojman](#), L. P., 2004. Environmental Ethics: Readings in Theory and Application, 4th edition. Wadsworth Publishing.
9. Light, A., and Rolston, III. H., 2005. Environmental Ethics. Blacwell Publishing Incorporated.
10. Raven, P. H., and Berg, L. R., 2005. [Environment, 5 Edition](#)th. John-Wiley and Son Limited



SEMESTER-I I I

ECO-231 INTERMEDIATE MICROECONOMICS

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: Principles of microeconomics

COURSE CONTENTS

Introduction

- Analyzing Economic Problems
- Constructing Economic Models
- Economic models as abstraction from the reality.
- Optimization Principle.

Consumer Theory

- Budget Constraint and its Application
- Utility and Preferences
- Indifference Curve Analysis
- Optimal Choice of Consumer
- Application of Consumer Theory in choosing Taxes
- Income Effect.
- Substitution Effect
- Price Effect as a combination of Income and Substitution Effect
- Decomposition of Price Effect into income & substitution effects
- Cases of normal, inferior & Giffen goods.

Theory of Demand and Supply

- Income Consumption Curve and Engel Curves
- The Price Consumption Curve and the Demand Curve
- Derivation of Demand Curve
- Demand Function
- Supply Function
- Supply and Demand Equilibria
- Comparative Statics
- The Inverse Demand Function.

Producer Theory

- Producer's Objective
- Technology Constraints
- Short Run and Long Run Production Function and Cost
- Diminishing Marginal Product
- Diminishing Technical Rate of Substitution
- Returns to Scale and Cost Function
- Isoquant and Isocost Analysis
- Cost Minimization in Short and Long run
- Short-Run and Long run Profit Maximization.

Markets Analysis



- Perfectly Competitive Markets: Analysis and Application
- Short Period Analysis (equilibrium cases, supply curve of firm)
- Long Period Analysis (equilibrium of firm, supply curve of industry)
- Monopoly Markets: Analysis and Application
- Short Period Analysis (equilibrium cases, why no supply curve of firm)
- Long Period Analysis (equilibrium of firm, sub-optimum, optimum and super-optimum cases)
- Price Discrimination (concept, need, possibility, forms, and degrees of price discrimination)
- Monopolistic Competition: Analysis and Application
- Short Period Analysis (equilibrium cases)
- Long Period Analysis (equilibrium of firm)
- Oligopoly: Analysis and Application
- Introduction to Cournot Model, Bertrand Model, Stackelberg Model, Sweezy's Kinked Demand Model

RECOMMENDED BOOKS

- Koutsoyiannis, A. - Modern Microeconomics- 2nd edition (1979)- Macmillan.
- Microeconomics by N. Gregory Mankiw, 4th edition, Thomson South-Western, 2006.
- Walter Nicholson- Intermediate Microeconomics- 6th Edition (1994) or latest The Dryden Press: Harcourt Brace College Publishers.
- Varian Hall R.- Intermediate Microeconomics: Modern Approach- 6th edition (2002)- W. Norton Publishing Company, New York.
- David Besanko and Ronald R. Braeutigam – Microeconomics – 4th edition (2010)- John Wiley and Sons, Inc.
- Pindyck and Rubinfeld with Mehta- Microeconomics- 6th Edition (2005)- Pearson Education, Singapore.



ECO-232 STATISTICS – II

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: STATISTICS-I

COURSE CONTENTS

Introduction

- Introduction
- Sources of Data
- Data Sampling and Sampling Distribution
- Introduction to Sampling and Sampling Plans
- Errors Involved in Sampling
- Sampling Distribution of the Sample mean

Simple Regression and Correlation

- Simple Regression
- Deterministic and Probabilistic Models
- Simple Linear Regression Model
- Standard Deviation of Regression Estimate
- Correlation
- Pearson Product Moment Correlation Coefficient.

Estimation: Describing a single population

- Introduction Point and Interval Estimates Basic Concepts
- Confidence and Interval estimates of the Mean from Large samples
- Interval estimates using the t-distribution
- Determining the Sample Size.

Hypothesis testing: Describing a single population

- Introduction, Concepts Basic to the Hypothesis testing
- Testing the population mean when the Variance is known
- Testing the population mean when the Variance is unknown

Chi-Square Distribution and Statistical Inference

- Introduction
- Chi-squared test of a contingency table

F-Distribution and Statistical Inference

- Introduction
- Testing Hypothesis about the Equality of Two Variances.

Analysis Of Variance

- Introduction
- One way Analysis of Variance for Equal and Unequal sample sizes
- Two-way Analysis of Variance without Interaction.

RECOMMENDED BOOKS



- Basic Statistics for Business and Economics by EARLK. BOWN AND MARTINSTARR
- Probability and Statistics by M.R. Spiegel, J.L. Schiller, and R.L., Sirinivasan (2000), 2nd edition Schaums Outlines Series. McGraw Hill. N.Y.
- Statistics for Management, Richard I. Levin, and David S. Rubin, Prentice-Hall International, Inc
- Statistics for Management, Richard I. Levin, and David S. Rubin, Prentice-Hall International, Inc
- Introduction to Statistical Theory, Part I & II, by Prof. Sher Muhammad Chaudhry.

ECO-233 TECHNICAL WRITING & PRESENTATION SKILLS

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: FUNCTIONALENGLISH

COURSE CONTENTS

- Technical writing: distinction, purposes, importance, and objectives
- Features of technical writing: clarity, conciseness, accuracy, organization, ethics
- Producing technical documents: writing process, pre-writing techniques
- Technical writing style: sentencing, paragraphing, revision and organizing
- Formal and informal formats
- Memo writing: basic elements and types
- Professional communication: letter writing and format, similarities and differences between letters and memos, types of letters
- Basics of report writing, purpose and factors of report writing, gathering information, interpreting findings, short and long reports, abstracts, summaries, introductions, final recommendations, and conclusions; editing the report
- Job application material: goals and audience, planning the resume and letter, writing, and formatting resume, writing letter of application

RECOMMENDED BOOKS

- Brannan, B., (2003): A Writer's Workshop: Crafting paragraph, building essays, McGraw Hill: New York
- Wong, (2002): Paragraph Essentials: A writing guide, Houghton Mifflin: Boston
- Bovee, C.L. et.al, (2002): Business Communication Today, Pearson Education, Delhi



- Maimon, E. P. & Peritz, J. H, (2003): A Writer's Resource: A handbook for writing and research, McGraw-Hill, New York
- Kennedy, X. J., Kennedy, M. D. & Holladay, S. A, (1999): The Bedford Guide for College Writer, St. Martin's: Bedford

ECO-234 FOUNDATION OF EDUCATION

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

After completing this course, pre-service teachers will be able to:

1. Explain the important features of foundation of education
2. Specify the role of educational thinkers in education
3. Discuss the modes of education
4. Discuss historical development of Pakistan
5. Evaluate the issues and problems of education.

Course Outline:

Unit 1: Ideological Foundation of Education

- 1.1. Islamic Foundations of Education
- 1.2. Ideology and teachers

Unit 2: Philosophical Foundations of Education

- 2.1. Philosophy and Education
- 2.2. Main Philosophical Thoughts
- 2.3. Idealism
- 2.4. Realism
- 2.5. Pragmatism

Unit 3: Psychological Foundations of Education

- 3.1. Learning and Maturation
- 3.2. Individual Differences
- 3.3. Instructional Strategies and Psychology

Unit 4: Socio-Economic Foundations of Education

- 4.1. Concept of Society and Culture
- 4.2. Social Conditions and Education
- 4.3. Economic Conditions and Education
- 4.4. Politics and Education

Unit 5: Historical Foundations of Education in Pakistan

- 5.1. Period from 1947-1958
- 5.2. Period From 1959-1971
- 5.3. Period from 1972-1979
- 5.4. Period from 1980 -1991
- 5.5. Period from 1992 – to date

Unit 6: Aims of Education

- 6.1 Aims, Goals and Objectives
- 6.2 Aims and Objectives of Education in Pakistan
- 6.3 Taxonomies of Objectives

Reference Material:



- Canestrari, A. (2009). *Foundations of Education*. New York: Sage Publications.
- Eugene, F.P. (2005). *Critical issues in education: Anthology of reading*. New York: Sage Publications.
- Goldblatt, P.F., & Smith, D. (2005). *Cases for teacher development*. New York: Sage Publications.
- Holt, L.C. (2005). *Instructional patterns: Strategies for maximizing students learning*.
- Murphy, D. (2005). *Foundations/Introduction to Teaching*. USA: Allyn & Bacon, Inc. New York: Sage Publications.
- Semel, S. F. (2010). *Foundations of education: The essential texts*. USA: Routledge

ECO-235 Introduction to International Relations

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

COURSE CONTENTS

- Importance and scope of International Relations
- Theories of International Relations:
 - Systems Approach,
 - Realism
 - Liberalism
 - Neo-Realism
 - Neo-Liberalism
 - Mercantilism
 - Imperialism and Colonialism
 - De-colonization
 - Neo-colonialism
 - Nation and National Power
- Determinants of foreign policy:
 - War, Cold war, and non-Alignment

RECOMMENDED BOOKS

- Dar, G.M. (2008): *An Introduction to International Relations*, Rajat Publication
- Rashid, H.U. (2005): *An Introduction to Peace and Conflict Studies*, The University Press
- Shipra, M.S. (2005): *Building a New Asia*



ECO-236 Exploring Quantitative Skills

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

COURSE DESCRIPTION

This course aims to develop the basic mathematical skills which ultimately enhance problem solving skills using inductive and deductive reasoning and sets. The basic concepts will be developed with applications from the real world such as algebraic models with equations, rates, ratios, and percentages will be discussed. Students will also explore linear models, including rectangular-coordinates, functions, empowering them to analyze real-world problems with logical precision. By the end of course, students will have practiced problem-solving, logical reasoning, and mathematical modeling abilities to tackle diverse challenges confidently as follows:

- Students will be introduced to the above concepts, and they will be prepared to apply these concepts to analyze and interpret information in different walks of life.
- Students will get familiarized with the importance of quantitative reasoning skills in the modern age.
- This course will improve their ability to deal with scenarios involving numbers related issues in a logical manner.
- It will provide students an opportunity to appreciate the intellectual beauty of quantitative reasoning skills.
- It will prepare students to apply the quantitative reasoning skills in solving quantitative problems which they will experience in their practical lives.

COURSE CONTENTS

Exploring Importance of Quantitative Reasoning Skills

What is quantitative reasoning, Overview of contributions of mathematicians especially Muslim scholars.

Problem Solving Techniques

Understanding relationship between parts and whole, Practical life scenarios involving units and rate, Unit analysis as a problem-solving tool, Inductive and deductive reasoning, Problem solving strategies.

Numbers & the Universe

Understanding our World through numbers, Dealing with very big and small numbers & their applications, Understanding uncertainty and its applications, Introduction to number systems and different types of standard numbers and their role in practical life scenarios, square roots, cube roots, highest common factors, lowest common multiples, visualizing fractions, decimals,



systems of measurements, an overview of contributions of mathematicians, unit analysis as a problem-solving tool.

Financial Issues

Money management (profit, loss, discount, taxation, and other scenarios involving percentage), money management in practical life scenarios like investments and federal budget, simple and compound interest, Saving plans and economy, percentage, profit, loss, discount, taxation, and other scenarios involving percentage, simple and compound interest with applications.

Exploring Expressions

Practical scenarios involving expressions, equating two expressions in one variable & using it to solve practical problems, linear equations, quadratic equations and their applications in social and economic problems.

Exploring Beauty in Architecture & Landscape

Introduce geometrical objects through architecture and landscape, dealing with social and economic issues involving geometrical objects, fundamentals of geometry, applications of Pythagorean theorem, introduction to unit circles, trigonometric functions and inverse trigonometric functions, problem solving with geometry.

Venn Diagrams

Venn diagrams and their applications

TEACHER MANUAL

[Quantitative Reasoning Courses\Quantitative Reasoning Teacher Manual - Sept 2021 - HEC.pdf](#)

RECOMMENDED RESOURCES

1. R. N. Aufmann, I. S. Lockwood, R. D. Nation and D. K. Clegg, Mathematical Thinking and Quantitative Reasoning (2008), Houghton Mifflin Company (New York).
2. Bennett, J. & Briggs, W. (2015). Using and understanding mathematics (6th Edition). Pearson Education, Limited.
3. Blitzer, R. (2014). Precalculus. (5th Edition). Pearson Education, Limited.
4. Using and understanding mathematics, 6th edition by Jeffrey Bennett and William Briggs, published by Pearson USA.
5. Mathematical thinking and reasoning 2008 by Aufmann, Lockwood, Nation & Clegg published by Houghton Mifflin Company USA.
6. Precalculus by Robert Blitzer 5th edition published by Pearson USA.
7. Precalculus Graphical, Numerical, Algebraic 8th edition by Franklin D. Demana, Bert K. Waits, Gregory D. Foley & Daniel Kennedy published by Addison Wesley USA.



8. Precalculus Mathematics for Calculus, 6th edition by James Stewart, Lothar Redlin and Saleem Watson published by Brooks/Cole Cengage Learning USA.
9. GRE Math Review https://www.ets.org/s/gre/pdf/gre_math_review.pdf
OpenAlgebra.com
10. A free math study guide with notes and YouTube video tutorials.

List of General Education, Arts and Humanities

ECO-237 Creative Writing

Credit Hours: 2 (2-0)

Contact Hours: 2-0

Pre-requisites: None

Course Description

Creative writing is everywhere. It connects authors and audiences whether you are reading a novel or driving past a billboard. This course will train students in the craft of writing expressively and persuasively across a wide range of creative modes and media. From writing literary fiction for the printed page or for digital platforms, to producing compelling and poetic sales copy, this course provides students with the basic knowledge and skills that allows them to connect with a target audience and become better storytellers. It will pose questions concerning the very nature of "literary" language and examine the ways in which such language can command our attention, stir our emotions, and thus encourage us toward action.

Learning Outcomes

Students who successfully complete this course will:

- Gain exposure to a range of creative genres and forms and acquire the skills with which to identify elements and techniques of each that attract attention and persuasively affect readers
- Be introduced to practices (in tutorial workshops) to help learn to give and receive effective feedback
- Develop new vocabularies and techniques that span creative fiction and creative advertising. The development of a portfolio will give students experience in editing and presenting their own work
- Gain the ability to judge and assess creative texts for their rhetorical structure and persuasive effects
- Develop their capacity for self-directed activity through compiling their creative submissions
- Be exposed to diverse literary and cultural characteristics and their influences on each other in a global cultural context through studying how different texts affect different audiences in different contexts. This exposure will also help them develop as conscientious citizens

Topics

Topics will vary and will include:



- Crime fiction
- Creative copywriting
- Flash Fiction
- Digital narratives
- Satire
- Travelogues

Required Books and Materials

- Poem Crazy by Susan Wooldridge
- Creating Short Fiction by Damon Knight
- Edmondson's Creative Writing Models (instructor course pack bound in one volume)
- Paper, pens, notebooks, portfolio (determined by each student).
- An active UH student email account you know how to use (<https://myuhportal.hawaii.edu>)

Required Activities

- Attend and Participate in all class sessions (class is an ongoing workshop).
- In-class Writing in each session--informal, focused, timed, etc.
- Read the assigned pages from the texts/course pack prior to each class.
- Post your weekly on-line journals/responses on the class WebCT site.
- Write approximately 1,000 words or four pages (minimum) each week.
- Revision of your work based on the instructor's assessments.
- Submission of a formal Poetry Portfolio at the halfway point (12 page minimum).
- Submission of a Final Portfolio: three publishable prose narratives (12 page minimum).
- Conference with your instructor at least once during the semester.

ECO-238 Introduction to History

Credit Hours: 2 (2-0)

Contact Hours: 2-0

Pre-requisites: None

Course Description

This is an Introductory level course consist of a review of major concepts relevant to the understanding of history as discipline and as a Process. It focuses on the introduction of major concepts, terminologies and issues, understanding of those are essential for the study of history. It will aim at the clarification of basic notions or ideas about what is history and what history is for. It evolves around the idea of the place of history as a source of knowledge and how can we approach historical knowledge with a sense of evolution.

Course Objectives

The purpose of this course is:

- To make students aware of the nature of historical knowledge and research.
- To inculcate among the students a sense of historical evolution of human knowledge, development and progress



- To develop among the students an ability to understand the common themes of historical knowledge.
- To inculcate among the students of history a sense of critical thinking.
- The Course shall form the basis for the ensuing courses of History at different levels.

Course Outcomes

At the end of the course the students shall be able to:

- Have an understanding of the major concept of historical Knowledge.
- Have an ability to distinguish between 'historical' and 'Instinctual' aspects of human knowledge.
- Have an ability to understand the historical evolution.
- Have an ability to plan a role in the future development.

Course Contents

- What is History?
 - Literal, terminological and conceptual meaning of history
 - History as Fact
 - History as Process
 - History as Narrative
- Memory, Record and History
- Nature of History:
 - Being and Becoming;
 - Continuity and Change;
 - Evolution, Progress and Development
 - Macrocosm & Microcosm: Time, Space, Causation
 - Facts and opinion/ objectivity & Subjectivity
- Utility, Benefits & importance of History:
 - History as a corrective/cohesive force;
 - History as a repetitive force
 - Continuity of History from Past to Future
 - Lessons from Past Historical determinism, etc.
 - History as Mother of All Sciences/Knowledge
- Epistemological nature of History:
 - Relationship of History with other forms of knowledge:
 - Natural Sciences
 - Social Sciences
 - Literature and Arts
- Forms and Classification of History

Suggested Readings

1. Burke, Varieties of Cultural History, Cornell University Press, 1977
2. Carlo, Ginzburg. Clues. Myths, and the Historical Method, John Hopkins: University Press, 1992
3. Carr, E. H., What is History? Harmondsworth: Penguin, 1961
4. Cohn, Bernard. An Anthropologist among Historians and Other Essay, Oxford University Press, 1988



5. Collingwood, R. G. The Idea of History. Oxford: Oxford University Press, 1978.
6. Daniels, Studying History: How and Why, New Jersey, 1981.
7. Gertrude Himmelfarb. The New History and the Old, Cambridge: Harvard University Press, 1987
8. Govranski. History Meaning and Methods, USA, 1969
9. Hegel. Elements of the Philosophy of Right. Cambridge University Press, 1991
10. Qadir, Khurram, Tarikh Nigari Nazriyat-o-Irtiqā, Lahore: Palgrave, 1994.
11. Qureshi, Muhammad Aslam. A Study of Historiography. Lahore: Pakistan Book Centre, Latest Edition.
12. Steedman. Caroline, Dust: The Archive and Cultural History, Manchester University Press, 2002
13. Stern Fritz, .Varieties of History: from Voltaire to the Present, Vintage, 2nd Edition 1975
14. Tahir Kamran, The Idea of History Through Ages, Lahore: Progressive Publisher, 1993
15. Lemon, M. C., Philosophy of History, London: Routledge, 2003
16. Marwick, Arthur, The New Nature of History, London, 1989, pp.31-35.
17. Roberts, Geoffrey, ed., History and Narrative Reader, London: Routledge, 2001.
18. Shafique, Muhammad, British Historiography of South Asia: Aspects of Early Imperial Patterns and Perceptions, Islamabad, NIHCR, Quaid-i-Azam University, 2016

ECO-239 Introduction to Philosophy

Credit Hours: 2 (2-0)

Contact Hours: 2-0

Pre-requisites: None

Course Description

The course introduces undergraduate students to some of the main concerns in philosophy concentrating on the works of major thinkers such as Plato, Aristotle, Descartes, Hume, Kant, Hegel, Marx, Kierkegaard, Husserl, Sartre, Foucault, and Derrida, to name a few. The class discussions will center on broad philosophical concerns: the nature of philosophy, the nature and limits of human knowledge, the scope and limits of human freedom, the differences between right and wrong conduct, the nature of good life, and the meaning and the value of human existence. The students will thus be given introductory overview of different areas of philosophy beginning with Plato. The topics for discussion will include: Morality, Free Will, Metaphysics and Knowledge. The basic principles and methods of logical reasoning will be introduced and students will be given opportunity to participate actively in class discussions.

Course Objectives

- Understanding basic concepts of philosophy in the fields of metaphysics, axiology, and epistemology.
- Understanding of philosophical terms.

Course Contents

1. A review of the history of philosophy
2. A discussion on the major problems and methods of philosophy
3. Studying the work of at least ONE philosopher from each of the following groups:



Week	Topics
1	Introduction Definition of philosophy Literal and general Subject Matter, Nature, and Scope of philosophy
2-3`	Branches of philosophy Metaphysics Branches of Metaphysics (Ontology, Cosmology, and philosophical psychology)
4-5	Epistemology Knowledge (Definition, Nature, Scope and condition of knowledge, Empiricism. Rationalism, institution theories of Truth)
6-7	logic Basic Logical concepts Deductive Reasoning vs. inductive Reasoning
8-9	Ethics Definition, Nature, and Scope Branches of Ethics (Normative Ethics and Applied Ethics Normative theories of truth)
10	Aesthetics Definition and Nature objectivity vs. subjectivity
11	Greek philosophical thought Schools of thought in philosophy.
12-13	Materialism (Mechanistic Materialism Dialectical Materialism and Naturalistic Humanism) b-Idealism (subjective idealism objective idealism and personal idealism)
14	Realism (Naïve Realism Representative realism, critical Realism Dogmatic and agnostic realism)
15-16	Pragmatism Existentialism Phenomenalism Analytic Tradition

Recommended Books

- Copi,leaving M.and Carl Cohen, introduction to logic,2009,An imprint of Pearson Education.
- Durant,will.The story of philosophy,1985,services Book club, Rawalpindi ,Pakistan. National Book foundation, Islamabad, Pakistan.
- .Stewart ,David and Blocker, H.Gene. Fundamentals of philosophy ,2006,Pearson Education inc. Dorling Kindersley Pvt .Ltd, India
- .Stace, W.T.C critical History of Greek philosophy ,2008,5th Reprint, National Book foundation, Islamabad, Pakistan.
- Titus,Harold H.Living issues in philosophy (An introductory Text Book),1964,4th Edition, American Book company,USA



Semester 4th

ECO-241 Intermediate Macroeconomics

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: Principles of Macroeconomics

COURSE CONTENTS

Introduction

- Introduction to Macroeconomics
- Methodology of Economists
- Economic models & economic systems
- Exogenous and Endogenous variables
- Scope of Macroeconomics, Activities & Objectives of Macroeconomists
- Introduction to the Classical & Keynesian schools of thought.

Measurement & Structure of the National Economy

- Introduction
- The circular flow of national income
- National Income Accounting, GDP & GNP
- Expenditure (demand), Product (supply) and Income (factor rewards) approach
- Saving & Wealth
- Nominal & Real GDP
- Price indexes & inflation, interest rates.

Productivity, Output & Employment

- The production functions
- The demand for labour, the supply of labour
- Labour Market Equilibrium
- Okun's law and unemployment.

Consumption, Saving & Investment

- Consumption and saving
- Definition of investment (autonomous & induced investment)
- The desired capital stock
- Equilibrium in the goods market
- Derivation of IS curve (graphic).

Determination of National Income (The IS-LM/ AD-AS Models: A

General framework formacroeconomic analysis)

- The FE Line: Equilibrium in the labour market
- The IS Curve: Equilibrium in the goods market
- The LM Curve: asset market equilibrium
- General equilibrium in the complete IS-LM model
- Price adjustment and the attainment of general equilibrium
- Aggregate demand and aggregate supply.

Inflation and Unemployment

- Definition of inflation, types, causes and measurement of inflation



- Different approaches to inflation
- Transitory and Structural unemployment
- The relationship between inflation and unemployment
- Philips Curve.

RECOMMENDED BOOKS

- Abel Andrew B. & Bernanke Ben S, Macroeconomics, 5th / 8th Edition, Addison Wesley
- Mankiw N. G., Macroeconomics, 6th Edition or earlier versions, Worth
- Shapiro, Edward – Macroeconomic Analysis- 7th Edition (2000) – Harcourt Brace Inc.
- Froyen, Richard–Macroeconomics: Theories and Policies–7th Edition (2002) –Macmillan
- Blanchard, Oliver – Macroeconomics -2nd Edition (2000)- Prentice Hall International.
- Dornbusch & Fisher – Macroeconomics- 9th Edition (2004) - McGraw Hill Inc.
- David Romer, “Advanced Macroeconomics” The McGraw-Hill Series in Economics.

ECO-242 Mathematical Economics-II

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

COURSE CONTENTS

- **Functions:**

Real-number line

Types of function and their graphs

Concave, convex, quasi-concave and quasi-convex functions

- **Equations:**

Types of equations, solution of equations, absolute values and Inequalities;

Limit and Continuity Rural-Urban Nexus of Development and Other Approaches

- **Limit of function:**

Left- and right-hand limit

Continuity

- **Derivatives and their Applications:**

Differential functions and Transcendental functions

Differentiation of polynomial Rational

Derivatives and partial derivatives

- **Integration:**

Indefinite and definite integrals



Rules of integration and its applications

Recommended books:

1. Thomas GB, Finney AR, (2005). Calculus (11th edition), Addison – Wesley USA.
2. Stewart J. (1995). Calculus (3rd edition), Brooks/Cole.
3. Anton H, Bevens I, Davis S. (2005). Calculus (8th edition), John Wiley, New York.
4. S.M. YUSUF, M. AMIN (2012). Calculus (7th edition), Lahore.
5. Bashir Ahmed, University of Mathematics (3rd edition), Multan.

ECO-243 Communication Skills

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

COURSE CONTENTS

- Need to acquire effective communication Skills, especially at workplace
- Language as the medium of communication: origin and importance of language, introduction to the four basic communication skills and their significance in the respective discipline, relationship of language with the basic communication skills
- Communication process: types of communication, principles of effective communication, barriers to effective communication, seven Cs of effective communication
- Audience recognition and involvement: defining terms for different audience levels, multicultural audiences, sexist language, audience involvement
- Listening skills (theory and practice): identifying four different listening responses, practicing appropriate questioning responses, providing feedback in reflective listening, barriers to listening
- Speaking skills: improving pronunciation, neutralizing accent, speaking with an outline, speaking extempore, improving general spoken expression, speeches, and oral presentations, gathering material, organization of data, use of appropriate language
- Reading Skills: The basic rules of reading, skimming, scanning, surveying,
- reading comprehensions, reading tables, graphs, and bar-charts, practicing
- reading activities

RECOMMENDED BOOKS

- Ludden M. J. (2002): Effective Communication Skills, 2nd edition, JIST Works:Indianapolis



ECO-244 Tools for Quantitative Reasoning

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

COURSE INTRODUCTION

This course is based on quantitative reasoning 1 course. It will enhance the quantitative reasoning skills learned in quantitative reasoning 1 course. Students will be introduced to more tools necessary for quantitative reasoning skills to live in the fast paced 21st century. Students will be introduced to importance of mathematical skills in different professional settings, social and natural sciences. These quantitative reasoning skills will help students to better participate in national and international issues like political and health issues. This course will prepare the students to apply quantitative reasoning tools more efficiently in their professional and daily life activities. This course will help them to better understand the information in form of numeric, graphs, tables, and functions.

COURSE OBJECTIVES

- Students will be introduced to the above listed concepts, and they will be prepared to apply these concepts to practical life scenarios.
- This course will enhance their ability to deal with scenarios involving quantitative reasoning skills in a logical manner which they can face in their practical lives.
- It will prepare students to deal with different forms of data occurring in professional, social and natural sciences.
- Students will be introduced to scenarios involving functions and probability in different disciplines.
- This course will prepare the students to apply the quantitative reasoning skills in other disciplines.
- This course will provide solid foundation for students to use the quantitative reasoning skills in solving practical life problems.

STUDENTS LEARNING OUT COMES

After completing this course successfully, students will be able to:

- strengthen their quantitative reasoning skills and apply to daily life problems.
- draw the inferences from the data given in numeric, graphs, tables and functions
- strengthen their quantitative reasoning skills while making decisions.
- apply the concepts of functions in social and economic issues and formulate and solve the problems.
- understand the principal concepts of probability and its applications.
- demonstrate the application of the learned principles of quantitative reasoning skills in different professional activities, social and natural sciences.

WEEKLY BREAKDOWN

MODULE-1 Exploring Graphical Information(3 WEEKS)

TOPICS



1. Investigating relationships between variables.
2. Exploring tools to find relationship between variables, Resources, and population growth: dealing with economic, environmental, and social issues.

MODULE-2 Building blocks of a plane(1.5 WEEKS)

TOPICS

1. Graphical and analytical approaches to solve a problem.
2. Applications of graphical & analytical approaches to solve social & economic problems.

MODULE-3 Exploring inequalities(1.85 WEEKS)

TOPICS

1. Understanding inequalities around us
2. Dealing with practical problems involving inequalities in different disciplines

MODULE-4 Comparing quantities(1.5 WEEKS)

TOPICS

1. Golden ratio in sculptures
2. Comparison of statements and their use in social and economic problems,
3. Sequence

MODULE-5 Thinking Logically (2WEEKS)

TOPICS

1. Survival in the modern World,
2. Propositions and truth values,
3. Categorical proposition, and its applications

MODULE-6 Understanding Data (4.15 WEEKS)

TOPICS

1. Methods to explore and summarize data, drawing graphs and identifying misleading graphs,
2. Methods to discuss the basic characteristics of any datasets, like finding a most representative value in a data, and methods to measure the amount of spread of a data,
3. Methods to measure degree of relationship among variables, finally this module includes methods to Count the odds.

RECOMMENDED RESOURCES

1. Using and understanding mathematics, 6th edition by Jeffrey Bennet and William Briggs, published by Pearson USA.
2. Mathematical thinking and reasoning 2008 by Aufmann, Lockwood, Nation & Clegg published by Houghton Mifflin company USA.
3. Pre-calculus by Robert Blitzer 5th edition published by Pearson USA.



4. Pre-calculus Graphical, Numerical, Algebraic 8th edition by Franklin D. Demana, Bert K. Waits, Gregory D. Foley & Daniel Kennedy published by Addison Wesley USA.
5. Pre-calculus Mathematics for Calculus, 6th edition by James Stewart, Lothar Redlin and Saleem Watson published by Brooks/Cole Cengage Learning USA.
6. https://www.ets.org/s/gre/pdf/gre_math_review.pdf
7. OpenAlgebra.com A free math study guide with notes and YouTube video tutorials.

TEACHER MANUAL

[Quantitative Reasoning Courses\Quantitative Reasoning Teacher Manual - Sept 2021 - HEC.pdf](#)

ADDITIONAL RESOURCES (OPTIONAL)

- Direct proportion:
<https://youtu.be/kuvdMCDqmKg>
- Inverse proportion:
<https://youtu.be/xEFyfL9YdHA>
- Identifying a linear function:
<https://youtu.be/AZroE4fJqtQ>
- Functions
<https://youtu.be/GY6Q2f2kvY0>
- Linear functions:
<https://youtu.be/MXV65i9g1Xg>
- Applications of linear equations:
<https://youtu.be/UAYCkFMU-YM>
- Solving system of linear equations:
https://youtu.be/2DzmE3_QS-E
- Scatter Plot and correlation:
<https://youtu.be/qscgK78No70>
- Mean Median and Mode:
<https://youtu.be/B1HEzNTGeZ4>
- Pearson's correlation coefficient
<https://youtu.be/jBQz2RGxCe>

ECO-245 Information & Communication Technology

Credit Hours: 3 (2+1)

Contact Hours: 3-2

Pre-requisites: None

Course Description

Information technology literacy has become a fundamental requirement for any major. An understanding of the principles underlying digital devices, computer hardware, software, telecommunications, networking, and multimedia is an integral part of any IT curriculum. This course provides a sound foundation on the basic theoretical and practical principles behind these technologies and discusses up to date issues surrounding them including social aspects and how they impact everyday life.



Course Objectives

- Understand the fundamentals of information technology
- Learn core concepts of computing and modern systems
- Understand modern software programs and packages
- Learn about upcoming IT technologies

Course Contents

Basic Definitions & Concepts, Hardware: Computer Systems & Components. Storage Devices, Number Systems, Software: Operating Systems, Programming and Application Software, Introduction to Programming, Databases and Information Systems, Networks, Data Communication, The Internet, Browsers and Search Engines, The Internet: Email, Collaborative Computing and Social Networking, The Internet: E-Commerce, IT Security and other issues, IT Project.

1. Basic Knowledge of Computers

- Understand basic computer hardware components and terminology
- Understand the concepts and basic functions of a common computer operating system
- Start up, log on, and shut down a computer system properly
- Use a mouse pointing device and keyboard
- Use Help and know how to troubleshoot routine problems
- Identify and use icons (folders, files, applications, and shortcuts/aliases)
- Minimize, maximize and move windows
- Identify common types of file extensions (e.g. doc, docx, pdf, html, jpg, gif, xls, ppt, pptx, rtf, txt, exe)
- Check how much space is left on a drive or other storage device
- Backup files
- Download and install software on a hard disk
- Understand and manage the file structure of a computer
- Check for and install operating system updates

2. Proficiency in Using Productivity Software

- Create documents of various types and save in a desired location
- Retrieve an existing document from the saved location
- Select, copy, and paste text in a document or desired location
- Print a document
- Name, rename, copy and delete files
- Understand and know how to use the following types of software programs:
- Word processing (example: MS Word, Google Doc, Writer)
- Presentation (example: PowerPoint, Impress)
- Spreadsheet (example: Excel, Calc)
- PDF reader (example: Acrobat Reader, Preview)
- Compression software (example: WinZip, StuffIt, 7-Zip)

3. Electronic Communication Skills

- Email, using a common email program (example: MS Outlook, Gmail, Apple Mail)



- Compose, Send, Reply, Forward messages
- Add attachments to a message
- Retrieve attachments from an email message
- Copy, paste and print message content
- Organize email folders
- Understand what an electronic discussion list is and how to sign up and leave one (example: Listserv, Listproc)

4. Internet Skills

- Set up an Internet connection and connect to the Internet
- Have a working knowledge of the World Wide Web and its functions, including basic site navigation, searching, and installing and upgrading a Web browser
- Use a browser effectively, including bookmarks, history, toolbar, forward and back buttons
- Use search engines and directories to find information on the Web
- Download files and images from a Web page
- Understand and effectively navigate the hyperlink structure of the Web
- Understand how keep your information safe while using the Internet

5. Moving Files

- Transfer files by uploading or downloading
- View and change folder/document security settings
- Copy files from hard disk to storage devices and vice versa

Recommended Readings

- Bruce J. McLaren, Understanding and Using the Internet, West Publishing Company, 610 Opperman Drive, P. O. Box 64526, St. Paul, MN 55164.
 - Computer Applications for Business, 2nd Edition, DDC Publishing, 275 Madison Avenue, New York,
- Nita Hewitt Rutkosky, Microsoft Office Professional, Paradigm Publishing Company, 875 Montreal Way, St Paul, MN 55102.42
 - Robert D. Shepherd, Introduction to Computers and Technology, Paradigm Publishing Inc., 875 Montreal Way, St. Paul, MN 55102.
- Shelly Cashman Waggoner, Discovering Computers 98, International Thomson Publishing Company, One Main Street, Cambridge, MA 02142.
- V. Wayne Klemin and Ken Harsha, Microcomputers, A Practical Approach to Software Applications, McGraw-Hill Book Company, New York, NY 10016.

ECO-246 Entrepreneurship

Credit Hours: 2 (2-0)

Contact Hours: 2-0

Pre-requisites: None

Course Description

This course is designed for the students to understand the Starting & operating a new business which involve considerable risk & effort to overcome the inertia against



something new. In creating and growing a new venture, the entrepreneur assumes the responsibility and risks for its development & survival and enjoys the corresponding rewards. At the end the students will be able to develop business plan to start and initiate their own ventures.

Module-01

Introduction

- Entrepreneurship and the Entrepreneurial Mind-Set
- Entrepreneurial Intentions
- Entrepreneurial Strategy: Generating and Exploiting New Entries

Module 02

- Types of Entrepreneurships
- Entrepreneurship Process
- Cost and benefits of Entrepreneurship
- Nine deadly mistakes of Entrepreneurship

Module-03

From Idea to Opportunity

- Creativity and the Business Idea
- Identifying and Analysing Domestic and International Opportunities
- Intellectual Property and Other Legal Issues for the Entrepreneur

Module-04

From the Opportunity to the Business Plan

- The Business Plan: (Creating and Starting the Venture)
- The Marketing Plan
- The Organizational Plan
- The Financial Plan

Suggested Readings

Entrepreneurship by Robert D. Hisrich 10th edition McGraw Hill publications

Entrepreneurship by Donald F. Kuratko and Richard M. Hodgetts

Semester 5th

ECO-351 MICROECONOMIC THEORY

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: Intermediate Microeconomics

COURSE CONTENTS

Introduction

- The Economic Problem,
- Basic economic agents,
- Microeconomics and Macroeconomics,
- Types of Microeconomic Analysis, framework of Microeconomics

Consumer Behaviour



- Consumer Preferences
- Consumption bundle
- Axioms of consumer preferences
- Budget Constraint
- Consumer choices
 - Utility maximization subject to budget constraint
 - Marshallian demand function (Concept, Derivation and Properties) Indirect utility function (Concept, Derivation and Properties)
 - Budget minimization subject to utility constraint, Hicksian demand function (Concept, Derivation and Properties)
 - Expenditure Function (Concept, Derivation and Properties)
 - Duality between Hicksian and Marshallian demand functions,
 - Duality between utility function and indirect utility function
 - Choice under uncertainty (elementary treatment)
 - Consumption over Time (elementary treatment)

Production Analysis

- Constraints
 - **Technical Constraints:**
Production, production process, Types of inputs, concept of net output, production plan, Production set, Few Concepts in describing technology; Iso-quants, Technical rate of substitutions, Elasticity of substitution, Returns to scale, Elasticity of scale, Homogeneous and homothetic technologies, Euler's theorem, Technologies with distinct outputs and inputs, Production function and Classification of production functions; Fixed coefficients production function, Leontief technology, Linear production function, Cob-Douglas production function, Constant elasticity of substitution production function, Transcendental logarithmic production function.
 - **Financial Constraints:**
Budget Constraint, Cost of Production, Economic Cost, Private Cost, External Cost, Implicit Cost, Explicit Cost, Cost equation and Cost Function.
 - **Market Constraints:**
Price Constraints: price takers, price regulations, sticky prices, minimum prices etc, Quantity Constraints: Quota, negatively sloped demand curve, kinked demand curve

Optimization

- **Profit maximization:** Profit equation, Input demand function (concept, derivation, and properties), Output supply function



(concept, derivation, and properties), Profit function (concept, derivation, and properties).

- **Cost minimization:** The cost minimization problem, Conditional input demand function (concept, derivation, and properties), Cost function (concept, derivation, and properties)
- **Revenue maximization:** The revenue maximization problem, Revenue function concept, derivation, and properties)

RECOMMENDED BOOKS

- Gravelle and Rees, Microeconomics, Third Edition, Pearson Education,
- Varian H. R. Microeconomic Analysis, Third Edition, W.W. Norton and Company, New York, 1992
- Silberberg E. The Structure of Economics: A mathematical analysis, Second Edition, McGraw Hill publishing Company, 1990

ECO-352 DEVELOPMENT ECONOMICS

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

COURSE CONTENTS

The Concept & Nature of Development

- Overview of the course
- The Concept & Nature of Economic Development
- An overview of diverse structures and common characteristics of developing countries

Theories of Development

- Introduction
- The Growth Game
- The Economics of Growth: K, L & Tech
- Differing Initial Conditions
- Classic Theories
- Linear Stages Theories & the Harrod-Domar Model
- Structural Change Models
- Neo-Classical counterrevolution
- Contemporary Models
- The New Growth Theory

Poverty and Population Growth

- Social Welfare
- Absolute Poverty
- Characteristics of Poverty
- Demo Transition
- Causes of High Fertility in Poor Households
- Policy Implications & Options

Human Capital: Education & Health

- Education & Health in Development



- International Trends
- The Human Capital Approach
- Child Labor & Education for Women
- Educational Systems
- Health Systems
- Policy Implications & Options

RECOMMENDED BOOKS

- Todaro, M. P. and S. C. Smith. (2011). Economic Development, 11th edition, Palgrave.
- Debraj Ray (1998). Development Economics, Princeton University Press.
- Daron Acemoglu and James Robinson (2012). Why Nations Fail: The Origins of Power, Prosperity and Poverty, Crown Publishing Group.
- Banerjee and E. Duflo (2012). Poor Economics, Public Affairs
- Taimur Rahman. (2012). The Class Structure of Pakistan, Oxford University Press.
- Vaqar Ahmed (2017). Pakistan's Agenda for Economic Reform, Oxford University Press

ECO-353 ENVIRONMENTAL ECONOMICS

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

COURSE CONTENTS

Introduction

- An introduction to environmental economics
- Economy–environment interdependence
- Main environmental problems
- Environmental economics: An overview.

Reasons of Studying Environmental Economics

- Market failures, externalities
- Imperfect competition
- Public vs. private goods
- Property rights and open access resources.

Economic Efficiency and Social Efficiency

- Review of basic concepts
- Economic approach and economic efficiency
- Social decision making and socially efficient level.

Externalities

- Private costs and benefits
- Social costs and benefits
- External costs and benefits
- Partial welfare analysis of external effects
- Benefits and costs of environmental resources
- Regulation of external effects.

Environmental Pollution and Control Mechanisms



- Pollution control: targets
- Pollution flows and stocks
- Privately and socially efficient level of pollution
- Pollution control: Instruments.

Command and control instruments

- Economic (market based) instruments
- Institutional instruments
- Instruments: taxes, subsidies, tradable permits Pigouvian taxation.

Criteria for evaluating environmental policies

- Cost efficiency and cost effectiveness.

Economic Valuation

- Concepts and measurement of value for decision making
- Direct method of valuation and indirect method of valuation
- Contributions of non-market valuation methods,
- Hedonic models.

Sustainability and Development

- Limits to growth
- The origins of the sustainability problem
- The pursuit of sustainable development.

Input-Output Analysis, Technology and Environment

- Origin, derivation, and usefulness of the model.

Global Environmental Problems

- Global environmental problems
- Role of international environmental treaties in control of global pollution.

RECOMMENDED BOOKS

- Nick Hanley, Jason F. Shogren and Ben White. Environmental Economics in Theory and Practice, (2nd edition), Palgrave Macmillan.
- Perman, R., Yue M., Common M., Maddison, D., and Mcgilvray, J. (2011). Natural Resource and Environmental Economics, (4th Edition), Pearson Addison Wesley.
- Field, B. and Field, M. (2002). Environmental Economics: An Introduction, Boston, McGraw Hill.
- Tietenberg, T.H., and Lewis, L. (2012). Environmental and Natural Resource Economics, (9th Edition), Pearson Addison Wesley.



ECO-354 MATHEMATICAL ECONOMICS

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: LINEAR ALGEBRA

COURSE CONTENTS

The Nature of Mathematical Economics

- Pure and applied mathematics
- The use of mathematical tools in social sciences, particularly in economics
- Economic theory (logical argument) as description of relationship between variables
- Mathematical Support: Expression of theory in functional form
- Explaining properties of economic parameters like elasticity, propensity to consume etc.,
- Verification of hypotheses and the use of mathematical models, Parameters, and variables (dependent and independent)
- Linear and non-linear functions: quadratic, polynomial, circular
- Types of functions: constant, rational, non-algebraic, logarithms & exponential
- Rules of logarithms and exponents
- Functions of more than two independent variables
- Graphs of various functions
- The importance and limitations of mathematical models.

Equilibrium Analysis

- Equation of a straight line: Intercept and Slope parameters and their economic interpretation
- Partial and general equilibrium analysis
- Single and Simultaneous equation models
- Examples from market models: Demand and supply equations
- Determination of price and quantity
- Calculation of elasticities at equilibrium.

Linear Models and Matrix Algebra

- Simultaneous equations models and the use of matrices
- Types of matrices: Square, identity, null, idempotent, diagonal, transpose, and their properties
- Laws of matrix operations: addition/subtraction, scalar, and vector multiplication
- Conditions for non-singularity of a matrix
- Determinant & its properties, Minors, and cofactors, Ad-joint and inverse of a matrix
- Properties of inverse of a matrix
- Solution of linear equations: the Gaussian method, the Cramer's rule, and Inverse matrix method
- Economic applications: Solution of market models, national income models.

Differentiation

- The concept of derivations



- Functions of one variable and rules of differentiation
- Sum-difference, product and quotient rules, chain rule, power function rule, inversefunction rule, Implicit functions rule
- Combinations of rules, differentiation of logarithmic & exponential functions
- Higher order derivatives, Concept of maxima & minima
- First and second derivative tests, point of inflection
- Free and Constrained optimization, Partial differentiation & its rules
- Hessian and Jacobian determinants

Economic Applications of Differential Calculus

- Analysis of Utility
- Demand, Production, Cost and Supply functions
- Lagrange function: Profit maximization and cost minimization under perfect competition and monopoly
- Maximizing excise tax revenue in monopolistic competitive market
- Comparative static analysis: Partial equilibrium market model
- National Income model
- Partial and Substitution elasticities
- Optimization by using Cobb- Douglas, CES and Translog functions with interpretation of the results.

RECOMMENDED BOOKS

- Chiang, A. C. Fundamental Methods of Mathematical Economics, 3rd Edition (1984) McGraw Hill Publishing Company.
- Frank, Budnick. Applied Mathematics for Business, Economics and Social Sciences, 4th Edition or latest - McGraw Hill Publishing Company.
- Dowling, E. T. Mathematics for Economists, Schaum's Outline Series, 3rd Edition McGraw Hill Publishing Company.
- George, Alvery et. al. Essentials of Mathematics with Business Applications, 5th Edition, McGraw Hill Publishing Company.
- Weber, E. Jean. Mathematical Analysis: Business and Economic Applications, Latest Edition, Harper and Row Publishers, New York.



ECO-355 LABOUR ECONOMICS

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

COURSE CONTENTS

Introduction

- Introduction of the labour market
- Important actors of the labour market
- Importance of the understanding of the labour market.

Labour Supply

- Defining and measuring the labour force
- Factors behind labour supply
- Understanding the worker's preferences
- Derivation of labour supply curve
- Measuring the elasticity of labour supply

Labour Demand

- The production function
- Employment decisions by the firm and factors related to these decisions
- Cost adjustment and labour demand
- The effect of minimum wage on labour demand

Labour Market Equilibrium

- Labour market equilibrium in a competitive environment
- Competitive equilibrium across labour markets
- Economic impact of labour force migration
- The cobweb model in labour market
- Non-competitive labour markets

Compensating Wage Differentials

- The Market for risky jobs
- Hedonic wage estimation
- Safety and health regulations
- Compensating wage differentials
- Health insurance and labor market

Human Capital

- Education and labour market
- Present value of education
- The schooling model
- Education and earning
- On-job trainings

The Wage Structure

- The earnings distribution
- Explanation of wage inequality



- Family migration
- The job match
- Job turnover and retention policies

Labour Unions and Collective Bargaining

- Labour union: background and facts
- Determinants of union membership
- Unions and monopoly
- Efficient bargaining
- Strikes
- Wage and non-wage effects of union

Unemployment

- Types of unemployment
- Mismatching and unemployment
- Unemployment compensation
- Intervention in labour markets and unemployment

RECOMMENDED BOOKS

- Borjas, George J. (2008). Labor Economics. McGraw-Hill/Irwin.
- McConnell et al. Contemporary Labor Economics, (latest edition), McGraw-Hill/Irwin.
- R. Ehrenberg and R. Smith. Modern Labor Economics, (latest edition), Addison Wesley.

ECO-356 ENERGY ECONOMICS

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: Nil

COURSE OBJECTIVES

- 1) To provide a better understanding and analysis Global energy trends and current situation
- 2) To enable the students to combine the economic tools with the goals of energy policy.

COURSE CONTENTS

1. Introduction and Background

- Global energy trends and current situation
- Energy and the economy – biophysical foundations

2. Oil industry, history and market structure.

- Oil, gas, and coal resources – geology, discovery, development, production, refining etc.
- World distribution of oil resources and production



- Non-renewable resource scarcity theory
 - Oil markets, market structure, and pricing
 - Oil price shocks and the economy
- 3. Natural Gas, Nuclear and Coal Industry**
- World distribution of coal, gas, and uranium resources and production
 - Nuclear Energy
- 4. Supply and Demand for Electricity in the US, Pakistan and rest of the world.**
- 5. State Regulatory Model**
- 6. Economics of electric power production, linear programming and marginal costs**
- 7. Topics in electric tariff design**
- 8. Electric Industry Restructuring**
- 9. Renewable Resources and Portfolio Standards**
- Innovation and learning curve – analysis of alternative energy technologies
 - Renewable energy – wind, solar, geothermal etc.
 - Energy storage

TEXT AND REFERENCE BOOKS

- Bhattacharyya, S. C. (2011). Energy Economics Concepts, Issues, Markets and Governance, Springer-Verlag.
- Fouquet, R. (2013). Handbook on Energy and Climate Change, Edward Elgar Publishing, Cheltenham.
- Zweifel, P., Praktiknjo, A.J., and Erdmann, G. (2017). Energy Economics: Theory and Applications. Springer Publisher. ISBN: 978-3-662-53020-7

ECO-357 ISLAMIC FINANCE

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

COURSE CONTENTS:

- 1. Definition of Islamic Finance based on Shariah and Fiqh,**
- 2. Features of Islamic finance;**
 - Prohibition of Riba,
 - Prohibition of Gharar,
 - Prohibition of Mayser,
 - Prohibition of dealing in unlawful goods and services,
 - Desire for justice and equity based on business Ethics.
- 3. History and Development of Islamic Finance;**
 - During 650 AD – 750 AD,
 - During 750 AD – 1900 AD,
 - During 1900 AD – 2000 AD,
 - 2000 AD till date.
- 4. Shariah Compliant Islamic Finance Structures;**



- Barter Trading (Bay al-Muqayada),
- General Sale (Bay al-Mutlaq),
- Exchange Sale (Bay al-Sarf) ,
- Markup-Sale (Murabaha),
- Deferred Payment Sale (Bay' BithamanAjil)
- Monetization (Tawarruq),
- Ena Contract,
- Salam Sale (Bai Salam),
- Manufacturing Finance (Istisna),
- Partnership (Musharaka),
- Venture Capital (Mudaraba),
- Islamic Lease (Ijara),
- Pledge (Rahn),
- Guarantee (Kafala),
- Wakala,
- Hawala,
- Wadia,
- Muqassa,
- Urboun,
- Waad (Promise),
- Qard.

5. Difference between Islamic finance and conventional finance. TEXT AND REFERENCE BOOKS:

- Ahmad, K. Studies in Islamic Economics, Leicester, The Islamic Foundation, United Kingdom, 1980.
- Ayub, M. Understanding Islamic Finance, John Wiley and Sons Ltd., The Atrium, Southern Gate, Chichester, West Sussex, England, 2007.
- Maududi, Sayyid Abul Ala. First Principles of Islamic Economics, Islamic Foundation, Markfield, United Kingdom, 2011.
- Usmani, M. Taqi. Islamic Finance, Maktaba Maariful Quran, Pakistan, 2005

ECO-358 ECONOMICS OF EDUCATION

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: Nil

COURSE OBJECTIVES:

1. To analyze the ways through which the education is organized and delivered to achieve economic growth in the most efficient ways.
2. To understand the efficacy of reforms pertaining to teacher salaries, student teacher ratio and charter schools.



3. To develop an understanding of the importance of education in economic growth of a country.

COURSE CONTENTS:

- Introduction: Defining economics and educational problem
- Importance of Schooling
- Econometrics overview, empirical research methods in the economics of education
- Human Capital theory: The basic economic perspective on education
- Education as a Signal: Signaling in the labour market
- Returns to education in developing countries, with special reference to
- Pakistan, social rate of returns to education
- Educational Production
- Education and health
- Education and inequality
- School Accountability and Standards
- Technology and Education
- Role of state in education
- Educational privatization

TEXT AND REFERENCE BOOKS:

1. Dominic J. Brewer, Patrick J. McEwan, Economics of Education, (latest edition) Elsevier,
2. Geraint Johnes, Jill Johnes, T. Agasisti and Laura, Contemporary Education Economics, (latest edition), Edward Elgar Publishing
3. Franklin G. Mixon, Richard J. Cebula New Developments in Economic Education, (latest edition), Edward Elgar Publishing

ECO-359 ECONOMIC GROWTH

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: Nil

COURSE DESCRIPTION:

This course explores theoretical developments in the analysis of economic growth and introduces current debates on evidence and policy relevant to the growth performance of both developed and developing economies.

COURSE OBJECTIVES

1. To introduce the theories of economic growth
2. To understand the issues and on-going debates on development economics.
3. To understand the mechanism of economic success and failures



COURSE LEARNING OUTCOMES:

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

- UNDERSTAND the insight of economic growth process
- SOLVE and MANIPULATE a variety of simple models in economic growth
- IDENTIFY applications and limitations of the various growth models

COURSE OUTLINES:

5. Introduction

- The Growth Game
- The economics of Growth: Capital, Labor and Technology
- The Historical Record: Kuznets Characteristics of Modern Economic Growth
- The Limited Value of Historical Growth Experience: Differing Initial Conditions

2. Concepts and Methods of Growth Theory and Growth Accounting

- Introduction
 - The Variables and Aggregation
 - Saving and Investment
 - Technology and the Economy
 - Rates of Growth
 - Steady Growth
 - A Brief History of modern Growth Theory
- ##### 3. The Harrod-Domer Model of Economic Growth

- Introduction
- The Harrod Model
- The First Harrod Problem
- The Harrod Stability Condition
- Domer's Model of Growth
- Harrod and Domer: Some Comparisons

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4. The Neoclassical/Solow-Swan Growth Model

- Introduction
- The Assumptions
- The Fundamental Equation of Neoclassical Economic Growth
- Fundamental Propositions of Neoclassical Economic Growth

5. Two Sector Models of Economic Growth

- Uzawa's Two Sector Growth Model
- The Fel'dman Model of Growth

6. The Cambridge Critics

- The Capital Controversy
- The Kaldor Model
- The Pasitti Model

7. Optimal Growth, Dynamic Efficiency and Welfare

- The Golden Rule of Accumulation
- Optimal Growth: Concepts and Problems
- The Keynes-Ramsey Rule

8. Theory and Models of Endogenous Growth

- Human Capital Model
- Research and Development Model



TEACHING METHODOLOGY

- Lectures
- In class activities
- Term paper (optional)

ASSESSMENT:

- Mid Term Evaluation: 50%
(Sessional Examination, Quizzes, Assignments, In-Class Activities)
- Final Examination: 50%

Note: The major share in mid-term evaluation will be of sessional examination.

The

share of mid-term evaluation and final examination can be 40:60 or 60:40, as approved by statutory bodies of university.

TEXT AND REFERENCE BOOKS:

- Jones, Hywel: An Introduction to Modern Theories of Economic Growth, Van Nostrand Reinhold (UK) Co. Ltd. (Southampton)
- Romer, D. (2006): Advanced Macroeconomics, McGraw-Hill (Boston)
- Robert J. Barro and Xavier Sala-i-Martin: Economic Growth, The MIT Press Cambridge, Massachusetts London, England.

Semester 6th

ECO-361 MACROECONOMIC THEORY

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: INTERMEDIATE MACROECONOMICS

COURSE CONTENTS

Macroeconomics: The Classical Framework

- Ingredients of the Classical model:
- The Says law of markets
- The Quantity theory of money
- The Marginal Productivity theory
- Equilibrium in the goods and money markets
- A critical appraisal of the Classical model
- Dichotomy in the economy.

The Demand Management Economy

- The Keynesian framework
- Characteristics of a depression economy
- The consumption functions
- The liquidity preference function
- Wage rigidity in the labour market
- The ISLM model, Mathematical derivation of the IS and LM functions
- The interaction of the goods and money markets in a closed economy
- The role of public sector investment



- The multiplier effects of fiscal and monetary actions
- Derivation of the aggregate demand curve/function
- Stabilization and the relative effectiveness of fiscal and monetary policies
- The Neoclassical critique of the Keynesian model
- The Keynesian-Neoclassical Synthesis.

The Supply Side Economics

- Demand for and Supply of Labour
- The wage rate determination
- Rigidity versus flexibility of nominal wage rate
- The short-run Production function
- Derivation of Aggregate Supply under the Classical and Keynesian assumptions
- The notions of full-employment and under-employment
- Scarcity of raw material and energy
- The supply side disturbances leading to stagflation

The Open Economy Macroeconomics

- Balance of Payments: Current and Capital account
- The Managed exchange rates system
- Determinants of the Exchange Rates
- Devaluation and its impacts for countries.

Macroeconomic Policy Debate

- Policy Actions: Active or Passive
- Distrust of Policy makers and Political Process
- Macroeconomics Policy: The Fiscal, Monetary and Commercial policies
- Policy formulation and implementation in a world of uncertainty
- Monetarists vs. Activists
- The short-run and long-run analysis of the Phillips Curve.

Growth and Business Cycles

- The accumulation of capital
- Acceleration principle and the concept of steady state growth path
- The steady state conditions
- The role of technical progress in growth
- Introduction to the theory of Real Business Cycles.

RECOMMENDED BOOKS

- Abel, Andrew, B., Bernanke, Ben S. & Croushore, D. Macroeconomics, Seventh Edition. Addison-Wesley.
- Froyen, Richard – Macroeconomics: Theories and Policies – 7 Edition (2002) Prentice Hall
- Branson, William – Macroeconomics: Theory and Policy – 3 Edition (1989) or latest Harper and Row, New York.
- Scarth, William, M – Macroeconomics: An Introduction to Advanced methods- 2(1996)- Dryden Press: Harcourt Brace & Company.
- Gupta, G.S.- Macroeconomics: Theory and Applications- 2 Edition (2004) Tata McGrawHill Publishing Company, New Delhi
- Romer, David - Advanced Macroeconomics -(2001)- McGraw Hills, New York.
- Mankiw, Gregory- Macroeconomics- 5 Edition (2003)- Worth Publisher,



New York.

- Scarth, William, M – Macroeconomics: An Introduction to Advanced methods- 2(1996)- Dryden Press: Harcourt Brace & Company.
- Romer, David - Advanced Macroeconomics -(2001)- McGraw Hills, New York.
- Mankiw, Gregory- Macroeconomics- 5 Edition (2003)- Worth Publisher, New York.

ECO-362 PUBLIC FINANCE

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

COURSE CONTENTS

Introduction

- The State and the Economy
- The Rationale for State Intervention

Fundamentals of Welfare Economics

- Market Efficiency
- Market Failure
- Efficiency and Equity

Analysis of Public Expenditure

- Public Goods
- Public Choice
- Public production and Bureaucracy
- Externalities
- Cost Benefit Analysis

Expenditure Programmes

- The Analysis of Expenditure Policy
- Cost Benefit Analysis

The Theory of Taxation

- Introduction to Taxation
- Tax Incidence
- Taxation and Economic Efficiency
- Optimal Taxation

Selective Topics

- Public Finance in a Federal System
- Deficit Finance

RECOMMENDED BOOKS

- Rosen Harvey S, Public Finance. McGraw Hill.
- Rosen Harvey S and Gayer Ted, Public Finance. McGraw Hill.
- Musgrave R. and P. B. Musgrave, Public Finance in Theory and Practice
- Stiglitz J. S, Economics of the Public Sector Norton, and Company.



ECO-363 MONETARY ECONOMICS

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: PRINCIPLES OF MACROECONOMICS

COURSE CONTENTS

Introduction and Development of Monetary Mechanism

- Evolution of Money and Payment System
- Definition of Money
- Function of Money and Measurement of Money
- Demand for Money and Supply of Money
- Classification of Money, M1, M2, M3, etc.

Role of Money in the Economy

- Debate on neutrality and non-neutrality of Money
- Classical Dichotomy and Keynesian Integration of Nominal and Real Sectors
- Role of Money in the IS-LM Framework
- Money in Aggregate Demand and Aggregate Supply Analysis
- Keynesian vs Monetarist views of Equilibrium Output, Employment and Prices

Theory of Demand for Money

- Quantity Theory of Money
- Transaction Theories of Demand for Money
- Friedman's Restatement of Quantity Theory of Money.

The Money Supply Process

- Monetary Base
- Keynesian Liquidity Preference Framework
- Introducing the Money Supply Process
- Determinants of the Money Supply: Exogenous and Endogenous
- Understanding Movements in the Monetary Base
- Money Multiplier
- Velocity of Money
- Explaining Depositor and Bank Behavior: The Complete Money Supply Model.

The Conduct of Monetary Policy: Central Bank

- Structure and Functions of Central Bank
- Independence of Central Bank and its Role in Economic Growth
- Tools of Central Bank for Money Control
- The Conduct of Monetary Policy: Goals and Targets
- Tools of Monetary Policy and their Comparative Analysis



- Impact Analysis of Monetary Policy Tools Financial Intermediaries
- Targeting interest rate and inflation.

Money and Interest Rates

- Determinants of Interest Rates
- Kinds of Interest Rates
- Understanding and Measurement of Interest Rates
- Real and Nominal Interest Rates
- The Distinction Between Interest Rates and Returns
- Portfolio Choice: Theory of Asset Demand.

Money and Inflation

- Inflation, Kinds of Inflation and Causes of Inflation
- Demand – pull Inflation, Cost – push Inflation
- Stagflation and Hyperinflation
- Inflation as a Monetary Phenomenon
- The Philips Curve and Accelerating Inflation
- Situation Analysis of Inflation in Pakistan
- Historical Perspective, Causes of Inflation in Pakistan, Policies to Combat Inflation in Pakistan.

RECOMMENDED BOOKS

- Mishkin, Frederic S. The Economics of Money, Banking and Financial Markets. Pearson(11th edition).
- Cecchetti, Stephen and Kermit, Schoenholtz. Money, Banking and Financial Markets.McGraw-Hill. (4th edition).
- McCallum, Bennett T. Monetary Economics, Theory and Policy. McMillan. (LatestEdition).
- Laider, David E. W. The Demand for Money: Theories, Evidence and Problems. Pearson.(4th edition).
- Miller, R. L. and Van Hoose, D. Money, Banking and Financial Markets. ThomsonSouth-Western (Latest edition).
- Handa, J. Monetary Economics. Routledge. (Latest edition).



ECO-364 BASIC ECONOMETRICS

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

COURSE CONTENTS

Introduction

- Why Study Econometrics?
- Methodology of Econometrics
- Types of Econometrics
- Data types and its sources

The Classical Linear Regression Model (CLRM)

- Simple Regression function
- Population regression function
- Linear regression function
- Linearity in variables and linearity in parameters
- Simple Regression Analysis
- Estimation of regression equation using OLS
- Statistical properties of OLS estimators (BLUE)
- Classical Linear Regression Model (CLRM) and its assumptions
- Estimation of the coefficient of determination

The Multiple Linear Regression Model (MLRM)

- Multiple Regression Analysis
- Difference between simple and multiple regression analysis
- OLS estimation of multiple regression equation
- Properties of OLS estimators
- Coefficient of determination (R^2) and Adjusted R^2
- Testing the significance of Regression coefficients (t-test)
- Testing the overall significance (F-test) of the model

Econometric Modeling:

- Model Specification:
- Model selection criteria
- Types of specification errors
- Consequences of model specification errors
- Tests of specification errors
- Errors of measurement
- Model selection criteria
- Endogeneity and nature of Endogeneity
- OLS estimation in presence of Endogeneity
- Detection of Endogeneity
- BLUE estimators in the presence of Endogeneity
- Consequences of Endogeneity in OLS estimation
- Remedial measures.

Multicollinearity

- Nature and severity of the problem
- OLS estimation of regression equation in the presence of perfect multicollinearity
- Causes of multicollinearity



- Distinction between perfect and partial multicollinearity
- Detection and remedial measures.

Heteroscedasticity

- The nature of the problem with reference to economic theory
- Cross-section data and the problem of non-constant variances
- Consequences for OLS estimators
- Detection and remedial measures
- Introduction to the Generalized Least-Squares model (GLS).

Autocorrelation

- Autocorrelation and its causes
- Time-series data and emergence of the problem with reference to economic theory
- Serial correlation
- Consequences of autocorrelation for OLS estimators Detection and remedial measures

RECOMMENDED BOOKS

- Dougherty, C. Introduction to Econometrics, Oxford University Press.
- Gujarati, D. N. Basic Econometrics, McGraw-Hill Company.
- Hill, R.C., Griffiths, W.E. and C. Lim, G.C. Principles of Econometrics, John Wiley, New York.
- Stock H. J. and M. W. Watson. Introduction to Econometrics, Pearson Education.
- Wooldridge, J. M. Introductory Econometrics: A Modern Approach, South Western College.

ECO-365 HISTORY OF ECONOMIC THOUGHT

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

COURSE CONTENTS

Classical Economics

- Adam Smith; The framework of Classical Economics
- Thomas Robert Mathus; Elaborations and Cleavages within the Classical system
- John Stuart Mill; Postscript to Classical Economists

Marxian Economics

- Karl Marx and the Economics of Das Kapital; Post script to Marxian Economics

Neo-Classical Economics

- Alfred Marshall; Framework of Neo-Classical Economics
- Pre 1914 variations to Neo-Classical Themes; Postscript to Neo-Classical Economics

Keynesian Economics



- The Economics of Keynes general Theory
- Postscript to Keynesian Economics

Post Keynesian Economics

RECOMMENDED BOOKS

- William J. Barber, A History of Economic Thought, (latest edition), Wesleyan University Press, Middletown.
- Sandmo, A., Economics Evolving: A History of Economic Thought, (latest edition), Princeton University Press,
- Medema, S. G., and Samuels, W. J., A History of Economic Thought: The LSE Lectures(1998), Princeton University Press

ECO-366 POVERTY & INCOME DISTRIBUTION

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

COURSE OBJECTIVES:

1. To explain the distributional aspects of national income
2. To familiarize students with the effects of poverty and income inequality
3. To understand the technical issues in the measurement of poverty and inequality

COURSE CONTENTS:

1. Introduction:

- The concept of poverty, inequality & well-being
- Correlation between inequality & poverty
- Consequences of inequality & poverty
- Determinants / sources of poverty and inequality

2. Issues in the Measurement of Poverty & Inequality:

- Unit of well being
- Unit of measurement
- Sampling procedure
- Problems of grouped and survey data
- Issue of relative purchasing power

3. Empirical Analysis of Poverty:

- Defining and estimating poverty Lines
- Poverty measures
- Desirable qualities of good poverty measure
- Rigid and adjustable measures
- Sub group poverty analysis
- Welfare Interpretation of poverty measures



- Multidimensional Poverty (concept and measurement)
- 4. Empirical Analysis of Inequality**
 - Approaches to measure inequality
 - Desirable qualities of good inequality measure
 - Classification of inequality measures and details
 - Decomposition of inequality
- 5. Empirical Analysis of Welfare**
 - Approaches to measure welfare
 - Desirable qualities of good welfare measure
 - Classification of welfare measures and details
 - Decomposition of welfare
- 6. Issues in Poverty and Inequality:**
 - Migration, inequality and poverty
 - Fiscal measures, inequality and poverty
 - Economic development, Inequality and poverty
 - Globalization, inequality and poverty
- 7. Poverty and Inequality in Pakistan:**
 - Time series Analysis of inequality, welfare and poverty
 - International comparison

TEXT AND REFERENCE BOOKS:

- Cowell F.A. Measurement of Inequality, STICERD, London School of Economics and Political Science, London (2000)
- Anand S. Inequality and Poverty in Malaysia, Measurement and Decomposition, A World bank Research Publication, Oxford University Press. (1983)
- Kakwani, N. Income Inequality and Poverty: Methods of Estimation and Policy: Applications, A World bank Research Publication, Oxford University Press. (1980).

ECO-367 POLITICAL ECONOMY

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

COURSE CONTENTS

1. Introduction

- Meanings, Definitions and brief Introduction of basic Concepts of Political Economy
- Economic and Political Integration. Policy Reforms and Popular Organizations, key Social and Economic indicators, Political and Economic Institutions and their role



- in decision-makings
- Linkages of Politics and Economics, Conceptualizing the Changing Global Order.
- **Political Economy and the World Order**
 - Problem of Power and Knowledge: New Millennium, Knowledge, Politics and Neo-Liberal Political Economy
 - New Voices in the Globalization Debate: Green Perspective, Regional Phenomena and State Order, New State Actors, Theory of Economic and Political Exclusion
- 2. **Regional Dynamics**
 - Regionalism and Globalization, the Political Economy of European Integration: European Union and Brexit
 - Regionalism in the Asia-Pacific Political Globalization and the Competition State. Economic Blocks and Political Blocks: ASEAN, Shanghai Cooperation Organisation; SARC, GCC, OPEC etc.
- 3. **Political Economy of Economic Development**
 - International Politics and Transfer of Technology, Sector-Specific Development Limitation.
 - Agriculture and Industry, Political Slogans and their Implementation, International challenge of poverty,
 - The Political Economy of food grain prices, Rural Development. Regional Exporting Blocks and their Markets.
 - Political Economy of Foreign Aid, Foreign Private Investments and Foreign Trades
- 4. **Political Economy of Pakistan**
 - The Economics of Patronage and Elite Capture of the Resources
 - The Political Economy of Land Reforms, Nationalization and Privatization
 - The Elitist Economic Model. Strategies for self-preservation.
 - Civil-Military Relationships
 - Different Political Regimes and Economic Growth and Development Strategies
 - Centre, Provincial and Local Government Relationships
 - The Political Economy of Resource Distributions: NFC Awards, PFC Awards

TEXT AND REFERENCE BOOKS

- Azhar, H. Nadeem (2012). Pakistan: The Political Economy of Lawlessness. Karachi: Oxford University Press. 117
- Ahmed, Vaqar (2017). Pakistan's Agenda for Economic Reform. Karachi: Oxford University Press.
- Gupta, S. Dev (1997). The Political Economy of



Globalization: Kluwer Academic Publishers.

- Hagen Everett E., (1980) The Economics of Development, Richard D. Irwin, Inc.
- Kardar Shahid (1987) The Political Economy of Pakistan. Lahore: Progressive Publishers, Pakistan

ECO-368 POPULATION ECONOMICS

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

COURSE CONTENTS

Introduction

- Understanding Demography
- Importance of Demography
- Sources of Demographic Data
- Processes of Demography

Theories of Population

- Mercantilist Perspective
- Malthusian Theory of Population
- The Marxist Perspective
- John Stuart Mill
- Lujo Brentano's Theory
- Emile Durkheim's Perspective
- The Theory of Demographic Transition
- Theory of Relative Income

Fertility

- Understanding the Concept
- Measuring Fertility
- Period Measures of Fertility
- Cohort Measures of Fertility
- Fertility Trends
- Fertility & Population Growth in Pakistan

Mortality

- Components of Mortality
- Measuring Mortality
- Differentials in Mortality
- Estimates of Mortality in Pakistan

Migration

- Definition & Measurement
- Causes of Migration
- Internal Vs International Migration
- Individual & Social Consequences of Migration
- Migration Trends in Pakistan: Causes & Consequences



Population Composition: Age & Sex Composition

- Measuring the Age Composition
- Measuring the Sex Composition
- Impact of Population Processes on the Age Composition
- Impact of Age Composition on Population Processes
- The Dynamics of Age/Sex Compositions; Age-Stratification Theory

Population Growth & Ageing

- Demographic Composition of the Elderly
- Dynamic Scenarios, Biological & Social Aspects of Aging
- Implications for the Society

Urbanization

- Demographic Components of Urbanization
- Internal Rural-to-Urban Migration
- Impact of Population Processes and Urbanization in Pakistan

Population Policy

- Need of Population Policy
- Influencing Population Processes
- Case Studies of Pakistan

RECOMMENDED BOOKS:

- Weeks J. R, Population. An Introduction to Concepts and Issues (latest edition). Wadsworth Publishing Company, USA.

Poston D. L. & L. F. Bouvier. Population and Society: An Introduction to Demography, (latest edition), Cambridge University Press, UK

Semester 7th

ECO-471 ADVANCED ECONOMETRICS

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

COURSE CONTENTS

Nonlinear Regression Models

- Intrinsically linear and intrinsically nonlinear Regression models
- Estimation of nonlinear Regression models

Qualitative Response Regression Models

- The linear probability model
- Applications of linear probability model
- The logit model
- Estimation of the Logit model (Grouped and ungrouped data)
- The Probit model, Probit estimation with grouped data
- The Probit model for ungrouped or individual data



- The Tobit model

Pool and Panel Data

- Why panel data regression models
- Estimation of pool data regression models
- Common intercept method
- Fixed effects model
- Least Squares Dummy Variables Approach
- Random-effects model
- Fixed-effects model Vs. Random-effects model.
- Hausman Specification Test

Simultaneous Equation Models and Estimation Methods

- Simultaneous equation models
- Nature of simultaneous equations
- Examples of simultaneous equation models from economic theory
- Rules for identification
- Unidentified, exactly identified and over identified.
- Indirect least squares
- Two-stage least squares
- Instrumental Variables

Time-Series Econometrics

- Stationarity
- Tests for Stationarity
- Transforming Non-stationary Time Series
- ARMA and ARIMA Models
- VAR Model
- ARDL Model

RECOMMENDED BOOKS

- Dimitrios, A. and Hall, S.G. Applied Econometrics: A Modern Approach using Eviews and Microfit, Palgrave, Macmillan
- Gujarati, D. N. Basic Econometrics McGraw-Hill Company.
- Hill, R.C., Griffiths, W.E. and Lim, G.C. Principles of Econometrics, John Wiley, New York.
- Stock H. J. and M. W. Watson Introduction to Econometrics, Pearson Education.
- Wooldridge J. M. Econometric Analysis of Cross Section and Panel Data, The MIT Press, Latest edition



ECO-472 RESEARCH METHODOLOGY

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

COURSE CONTENTS

Introduction

- Basic Concepts, Definitions, Terminologies

Research types and designs

- Research Types; Advantages and disadvantages of different research types
- Research designs; Advantages and disadvantages of different designs

Literature review

- Formats, Finding research journals, journals by ranking, themes etc.
- Review styles; Summary of each paper vs. review of many papers under one theme[thematic review]
- Gap finding

Sampling

- Types of sampling
- Methods of sampling
- Determining the sample size
- Handling the issues

Data Sciences

- Data types: primary and secondary, Qualitative and Quantitative, Cross sectional, TimeSeries, and panel data

Data analysis

- Descriptive analysis, Regression, Data Visualization

Thesis /Report writings

- Elements of thesis / report; Abstract, Introduction, Review of Literature, Framework of Analysis, Estimation, Results and discussion, and Conclusion.
- References; APA, AMA, MLA, and other formats
- Plagiarism and its outcomes to researchers.

RECOMMENDED BOOKS

- Kothari,C.R. Research Methodology: Methods and Techniques, New Delhi, Wiley Eastern Limited. Latest Edition.
- Dawson, Catherine Practical Research Methods, New Delhi, UBS Publishers, LatestEdition.
- Kumar, Ranjit. Research Methodology: A Step by Guide for Beginners, Second Edition,Singapore, Pearson Education. Latest Edition.
- Etheridge Don E. Research Methodology in Applied Economics: Organizing, planningand Conducting Economic Research, 2nd Edition. Blackwell Publishing



ECON-473 INTERNSHIP

Credit Hours: 3 (3-0)

Contact Hours: 3-0

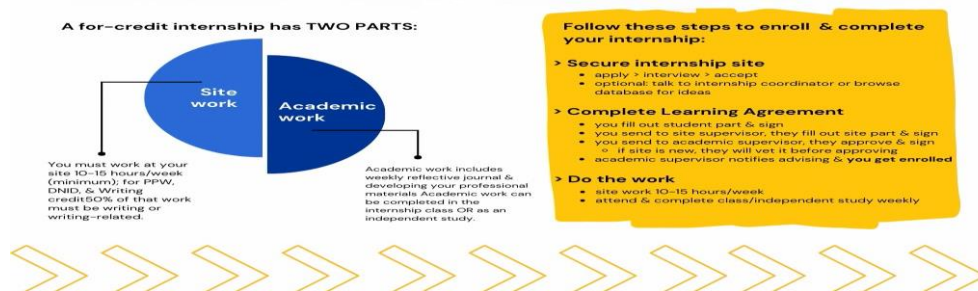
Pre-requisites: None

Course Description

An internship in the context of a Bachelor's degree in Economics typically refers to a structured and supervised work experience that students undertake as part of their academic curriculum. It provides students with the opportunity to gain practical, real-world experience in the field of economics while still completing their degree.

Prerequisite(s): Departmental Approval.

Duration: 6-8 weeks



ECO-474 APPLIED ECONOMICS

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

Introduction to MS Office, Composing Models and Mathematical Equations, graphs

PowerPoint and MS-Access (XP)

Database Concepts, File Linkages, Data Retrieval, Data Editing / Updating. Data Transferring.

SPSS and E-View

Menu, Tool Bars, File Linkages, Dialog Boxes. Data Analysis, Analysis of Variance. Simple and Multiple Regression Analysis, Formatting Reports, Creation and Modification of Chart, Line Area and Pie Chart. Output Navigator Printing, Data Editor Printing, Command Syntax Printing. Use of E-view for Model Estimation.

Estimation of Production Function

Use of Computer, SPSS, E-View, STATA to Estimate Production Functions.

Cob-Douglas Production Function, Constant Elasticity Production Function etc.



Computer Applications: Demand – Supply & Equilibrium

Estimation of Demand and Supply using E-View / SPSS. Aggregate Demand – Aggregate Supply and Equilibrium.

Model Building and Estimation

Building Simple Econometric Models and Estimation. Single Equation Models, Multiple / Simultaneous Equation Model. Interpretation of Computer Output.

Project Appraisal and Computer Application

Use of Computer Programming (Softwares), SPSS, Mintab, Stata and E-View etc. for Cost-Benefit Analysis, Estimation of Present Values, Estimation of Economic and Social Benefits. Project Appraisal Using E-View etc. Estimation of Cost Functions and Decision Making.

Econometric Analysis and Computer Applications

Regression Functions. Estimation with Qualitative Variables Confidence Interval and Hypothesis Testing. OLS, PDOLS. Estimation and Improving Model Estimates: Autocorrelation, Estimation of Simultaneous Equations. 2SLS, GMM. Estimation of VAR and ARIMA Models, ARDL, Data stationarity, Panel Data.

Recommended Books

- E-View Manual, (Learning help available with package (software)).
- Gimi, Carter and Annette, Marquis, with Karl Browning, Mastering Microsoft Office XP Premium, Selection B.P.B., Publishers, New Dehli , (2001).
- Robertson, D.F., Computer Applications and Programming, Har Brace Jovanovich

ECO-475 PROJECT APPRAISAL AND INVESTMENT ANALYSIS

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

COURSE CONTENTS

Introduction

Meaning of Project Appraisal, usefulness and significance

- Aspect of project appraisal with a special focus on economic versus



financial analysis

- Contours and Dimensions of a project and its essential Ingredients
- Project Vs. Plans
- Project Cycle

Project Cycle

- Phases of Project Cycle
- Identification
- Feasibility Report
- Preparation
- Appraisal
- Implementation and Evaluation

Project Identification

- Sources of Project Identification
- Steps of Project Identification

Feasibility Report & Project Planning

- Dimensions of a Feasibility Study
- Problems in Project Preparation
- Linking Projects to Resources

Project Appraisal

- Purpose of Project Appraisal
- Aspects of Project Appraisal: Technical, Managerial, Commercial, Financial and Economic Economic analysis in detail with pricing of inputs and output
- Identification and discounting of costs and benefits
- Techniques of project appraisal; undiscounted and discounted techniques
- Sensitivity analysis

Project Approval

- Rules of project approval

Project Implementation

- Monitoring Indicators
- Kinds of monitoring
- Monitoring and reviewing techniques

Project Evaluation

- Significance & Purpose
- Types and indicators of evaluation.

RECOMMENDED BOOKS

- Broadman et al. Cost Benefit Analysis: Concepts and Practices, Prentice Hall International (latest edition)
- Manual for Development Projects, Project Wing, Planning & Development Division, Islamabad. (Latest edition)



ECO-476 ISLAMIC ECONOMICS

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: Nil

COURSE DESCRIPTION:

The objective of studying social sciences is to help in achieving human wellbeing. However, framework in conventional economics is secular. Hence, the objective of every member in a society is to maximize his/her own material well-being. According to neo-classical paradigm individuals maximize the welfare of a society while maximizing private self-interest. In other words there exist no fallacies of composition. That is, whatever is in the self-interest of an individual, is also in the interest of a society as a whole. Hence, there is no need to motivate economics agent for behaving in line with the interest of society. Keynesians though believe on the clash between self and social interest and admit the existence of fallacies of composition such as 'paradox of thrift' and 'liquidity trap' however, they believe that such anomalies can be resolved by appropriate government intervention and not by changing the fundamental objective of individuals. Still we are observing many economic issues in the world. In this subject we will discuss how Islam provides a better alternative

COURSE OBJECTIVE:

The objectives of this course are:

1. To provide an introduction to the basic concepts and principles of Islamic economics.
2. A enable the students for comparative analysis of different economic systems.
3. To enable the students to understand the role of values in economy
4. To explain the theories and concepts of the Sharia'h compliant financial system in an Islamic economy.
5. To appraise the efforts undertaken in Pakistan and other Islamic countries at the state level as well as in private sector to revamp overall economy on the universal principles of Shariah.
6. To outline the challenges faced in transformation of contemporary interest based economy into interest free economy.

COURSE LEARNING OUTCOMES:

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

- DIFFERENTIATE between the major characteristics of the dominant conventional economic systems (capitalism and Communism/socialism) and one based on the fundamental principles of Islam
- UNDERSTAND the conditions that should be met for a just, well-balanced, stable, and growing economy under Islamic perspective.
- UNDERSTAND the Islamic principles governing Islamic financial system

COURSE CONTENTS:

1. Definitions and Basics

- Definitions, concepts and terminologies,
- Brief History of Islamic Economics,
- Rationale for Islamic Economics,
- Islamic Economic System,
- Sources of Islamic Laws,
- The Holy Qur'an, Sunnah & Hadith, Ijma Ijtihad/Qiyas/Reason



2. Islam and other Economic Systems

- Introduction,
- Capitalism, Socialism, Communism, Mixed Economic System, Comparison and contrast

3. Islamic Economics

- Defining Islamic Economics,
- Principles of Islamic Economics,
- Consumer behavior, Basic values of Islamic economic system,
- Philanthropic and other-regarding behavior

4. Factors of Production

- Land as a Factor of Production,
- Land Tenure System in Islam,
- Place of Capital in Islamic Socio-Economic set-up,
- Labour-Capital Relationship and Islam,
- Rent and Wages in Islam, Islamic Values and work life

5. Interest, its Prohibitions and Classifications

- Riba /interest definitions and its types,
- Riba in Quran, Riba in Hadith,
- Commercial Interest and Usury,
- The implications of interest

6. Islamic Financial System

- Islamic Contracts,
- Islamic Modes of Financing, Banking in Islam
- Financial system in Islamic Economy
- Applications of Islamic Financing,
- Project Financing,
- Working Capital Financing,
- Import Financing, Export Financing

8. Islamization of Economy

- Pre-modern Muslim thought on economics,
- Development of "Islamic economics" as an academic discipline,
- Achievements, Challenges,
- Islamization of financial institutions in Pakistan: Achievements, Problems and prospects.

9. Case Studies

- Islamic Financial Institutions (Bank/ Insurance),
- Islamization of economy [at least any two countries]

11. Emerging Trends and Recent Developments



TEXT AND REFERENCE BOOKS:

1. Asad Zaman Islamic Economics; A Survey of the Literature, IRI publications, IIUI, Islamabad (available online)
2. Syed Nawab Haider Naqvi, Perspectives on Morality and Human Well-being, Leicester (UK): Islamic Foundation, 2003.
3. M.A. Mannan, Islamic Economics, Theory and Practice (Latest Edition), Sh. Muhammad Ashraf Publisher, Lahore, Pakistan.
4. Abdul Hameed Dar and Muhammad Akram, Islamic Economics, Ilmikitab Khana, Urdu Bazaar, Lahore
5. Abbas Mirakhor, Zamir Iqbal, Hossein Askari , Introduction to Islamic Economics: Theory and Application, John Wiley & Sons

ECO-477 ISSUES IN WORLD ECONOMY

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

COURSE DESCRIPTION

This course offers a comprehensive analysis of various issues of global economy within the field of International Economics. It investigates the phenomenon of global economy and seeks to provide understanding of today's increasingly interdependent world. This course recognizes that economy cannot be treated separately from other domains of social studies so such topics as political economic theories and models, historical context, cultural phenomenon, role of information and communication technologies, and others will be discussed.

COURSE OBJECTIVES:

The basic objective of this course is to focus on major global economic issues that characterize the state of our current world. This course aims to give students a deep and a comprehensive understanding of what global economy is and how to manage domestic economy in the context of a dynamic global economy. This course introduces and critically examines the processes involving the increasing interconnection of the world and its effects on people's lives. The course provides an interdisciplinary perspective on major concepts in order to make sense of the changes taking place at a global scale. It also explores existing debates and case studies in order to illustrate the ongoing challenges that communities face.

COURSE LEARNING OUTCOMES:

Upon successful completion of the course, the student will:

- LEARN fundamentals regarding the dynamics of the global economy. They will explore characteristics of capitalist and socialist economies; examine new trends in global economy.
- Be AWARE OF data relating to global economic performance and will be able to interpret what they show.



- Have good KNOWLEDGE of the evolution of the world's monetary and trading systems.
- Be able to apply this theory to investigate and better understand contemporary world economic issues.

COURSE CONTENTS

- 1 Economic Geography: An Introduction
- 2 The Historical Development of Capitalism
- 3 Population
- 4 Resources and Environment
- 5 Theoretical Considerations
- 6 Agriculture
- 7 Manufacturing
- 8 Services
- 9 Transportation and Communications
- 10 Cities and Urban Economies
- 11 Consumption
- 12 International Trade and Investment
- 13 International Trade Patterns
- 14 Development and Underdevelopment in the Developing World

TEACHING METHODOLOGY:

- Lectures
- In Class Activities
- Written Assignments
- Group Discussion

ASSESSMENT:

- Mid Term Evaluation: 50%
(Sessional Examination, Quizzes, Assignments, In-Class Activities)
- Final Examination: 50%

Note: The major share in mid-term evaluation will be of sessional examination. The

share of mid-term evaluation and final examination can be 40:60 or 60:40, as approved by statutory bodies of university.

TEXT AND REFERENCE BOOKS

- Stutz, F. P., & De Souza, A. R. (1998). The world economy: Resources, location, trade, and development. Prentice Hall.
- Stiglitz, J. E. (2002). Globalization and its Discontents. New York.
- Dicken, P. (2007). Global shift: Mapping the changing contours of the world economy. SAGE Publications Ltd.
- Rosser, J. B., & Rosser, M. V. (2018). Comparative economics in a transforming world economy. MIT Press.
- Freidman, T. (2005). The world is flat. New York: Farrar, Straus and Giroux.
- Bhagwati, J. (2007). In defense of globalization: With a new afterword. Oxford University Press.



□ Stiglitz, J. E. (2008). Making Globalization Work. WW Norton & Company.

ECO-478 GENERAL EQUILIBRIUM AND WELFARE ECONOMICS

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: Intermediate Microeconomics

COURSE DESCRIPTION:

In this course, we extend the partial equilibrium analysis, studied in the basic microeconomics, to general equilibrium. Alternatively, here we study the equilibrium and their welfare consequences in case of many markets where the allocation of resources results from the interaction of several economic agents (consumers and producers). The basic structure is based the competitive forces with no externality and no information asymmetry accompanied by rational individuals (utility maximization of consumers and profit maximization of producers). The maximization behaviour of individual economic agents occur in such a way that all markets clear in a simultaneous way.

Second, the course includes the theory of social choice and welfare ranging from the measurement of welfare to the fundamental theorems of welfare. After the completion of course, the student should be able to understand the framework of general equilibrium and its welfare characteristics.

COURSE OBJECTIVES:

1. To Provide an Overview to Students how the Overall Economic System Works
2. To Introduce the Basic Concepts and Techniques related to the Equilibrium in the Overall Economy
3. To show the Welfare Characteristics of Overall Economy
4. To Show the Students some Applications of General Equilibrium Theory

COURSE LEARNING OUTCOMES:

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

- UNDERSTAND the aggregation of individual Preferences into Aggregate Preferences?
- IDENTIFY the interaction of Several Markets at the Same Time Work
- To APPLY the theory of General Equilibrium in Alternative Economic Structures

COURSE CONTENTS

1. Introduction to General Equilibrium

Complete Markets, Spot Market vs Forward Market, Partial versus general equilibrium, the Walrasian System, Exchange Economy, Production Economy

2. Exchange Economy

General equilibrium of Pure Exchange Economy, The Edgeworth Box Diagram, Offer Curves, Existence, Uniqueness and Stability of Equilibrium, Mathematical and Graphical Representation of General Equilibrium, Pareto Efficiency in Exchange Economy, Contract Curve, Core in Exchange Economy, Interaction between Equilibrium, Pareto Efficiency and Core

3. Production Economy

General equilibrium of production and consumption; A Robinson Crusoe Economy: One Consumer and One Producer Economy, Equation of Contract Curve, Production Possibility Frontier, ISO Welfare Line, Pareto Efficiency in Robinson Crusoe



Economy; General equilibrium in the two-sector model; The Production Economy in Edgeworth Box: 2x2 Model, Pareto Efficiency in 2x2x2 economy, general equilibrium and allocation of resources, Extension of the simple general equilibrium model to any number of Consumers, producers and factors

4. Application of General Equilibrium Theory

some applications like Heckscher-Ohlin Theory of Trade, Stolper Samuelson Theorems, Problems of the general equilibrium model

5. Welfare Economics

Meaning of welfare, measurement of social welfare, Utility Possibility Set, Social Welfare Function, Pareto Optimality, Theory of Social Choice, the Majority Rules, Condorcet's Paradox, Borda Count, Arrow's Impossibility Theorem, Maximization of social welfare, Welfare maximization and perfect competition, the First Fundamental Theorem of Welfare, the Second Fundamental Theorem of Welfare, Monopoly, Externalities, imperfect information, public goods, Some Criticism, Extension and Policy implication

TEXT AND REFERENCE BOOKS:

1. James C Moore, General Equilibrium and Welfare Economics: An Introduction (latest edition), Springer.
2. Layard, P.R.G and Walters, A.A Microeconomic Theory, Latest Edition.
3. Mas-Colell, Andreu, Michael D. Whinston, and Jerry R. Green. Microeconomic Theory
4. Eugene Silberberg and Wing Suen. "The Structure of Economics: A Mathematical Analysis

Semester 8th

ECO-481 INTERNATIONAL ECONOMICS

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

COURSE CONTENTS

Introduction

- International Economics and Economic theory
- The subject matter of International Economics
- Importance of international trade in the changing world

Theories of International Trade

- History of International trade, pre-classical theories of international trade-Mercantilism, and Physiocracy.
- Classical theories of International Trade - absolute advantage, comparative advantage, and reciprocal demand



- Neo-Classical theories of international trade- Opportunity cost theory
- Modern Theory of International Trade- H-O Theory, H-O-S Hypothesis
- Leontief Paradox. Alternative theories of trade-Human Skills. Technology and product cycle theories. Use of indifference curves, offer curves, and box diagrams for exposition of trade theory

International trade Policies

- Free trade vs protected trade
- Objectives of commercial policy
- Instruments of trade policies- tariff barriers, non-tariff trade barriers
- GATT, WTO

Trade policies in Developing countries

- Import substituting Industrialization
- Export oriented Industrialization

Economic integration

- Types and reason of economic integration
- The theory of customs union, static and dynamic effects of custom unions. Economic integration among the countries- EU and SAARC

The foreign Exchange Markets

- Definition and Functions
- Hedging and Speculation
- Types and determination of exchange rate

The Balance of Payments

- Balance of payments accounting
- Features of balance of payments.
- Components of balance of payments.
- Measuring the deficit or surplus of balance of payment

RECOMMENDED BOOKS

- Salvatore, D. International Economics, (latest edition). Wiley Global Education.
- Krugman, P. R. International Economics: Theory and policy, (latest edition), Pearson Education India.
- Francis Cherunilam. International Economics, (latest edition), The McGraw-Hill Companies



ECO-482 ISSUES IN PAKISTAN ECONOMY

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

COURSE CONTENTS

Quick Review of National Income Accounts

- GDP (Nominal and Real) and GNP
- Measure of Inflation and Employment
- Measures of Social Welfare
- Beyond GDP
- Basic Needs Approach
- HDI Approach

Agricultural Sector of Pakistan

- 1947-58: The Neglected Agriculture Sector
- The Green Revolution and its Impacts
- Evaluation of Green Revolution as Development Strategy
- Critical Analysis of Land Reforms in Pakistan
- Pakistan's Agricultural Sector: Historical Perspectives and Implications

Industrial Sector of Pakistan

- Composition of Manufacturing Sector
- Process of Industrialization from 1947-58
- The Development Decade of Ayub—1958-68
- The Experimental Regime of Bhutto—1972-77
- Zia Regime and back to the Basics—1977-88
- Industry after Structural Adjustment Program—1988-onwards
- Industrial Development in Pakistan: Factors and Development Programs

Fiscal and Monetary Policies and Inflation in Pakistan

- Fiscal Developments
- Structure and Trends in Revenue
- Structure of Expenditures and Trends of Fiscal Deficit
- Financing of Fiscal Deficit
- New NFC Award and Medium-Term Budgetary Framework
- Monetary Policy Management and Inflation in Pakistan
- Understanding Monetary Data
- Monetary Management
- Financial Sector Reforms
- Salient Features of Banking Sector
- Inflation and its Causes in Pakistan

Public and External Debts in Pakistan

- Difference between the two Debts
- Is Debt Creation Always Bad?
- Concerns Regarding Pakistan's Fiscal Deficit
- Reforms to Bring Debt under Control

Performance of Pakistan on Foreign Economic Front

- Understanding BOP accounts
- Trends in BOP
- Composition of Exports and Imports



- Historical Directions of Pakistan's Trade Policy Regimes
- Impacts of Structural Adjustment Program on Trade Policy
- Dealing with Globalization and WTO
- Impacts of Globalization on Poverty and other Socioeconomic Indicators in Pakistan
- Exchange Rate Regimes in Pakistan
- The Weakening Currency of Pakistan

Recent Challenges Facing Pakistan Economy

- Law and Order Situation
- Energy Crises
- Rising Circular Debt

RECOMMENDED BOOKS

- Zaidi, Akbar. Issues in Pakistan's Economy, Oxford University Press, Karachi. (Latest edition)
- Ahmed, Vaqar (2017) Pakistan's Agenda for Economic Reform, Oxford University Press.
- Hussain, Ishrat (2007) Pakistan: The Economy of an Elite State, Oxford University Press, Karachi.
- Saeed, Khawaja Amjed. Economy of Pakistan. Oxford University Press, Karachi. (Latest edition).
- Economic Survey of Pakistan (various issues) Federal Bureau of Statistics, Government of Pakistan.
- Rashid, Amjed and Barki, Shahid Javed (2016) Pakistan Moving the Economy Forward. Oxford University Press, Karachi.

ECO-483 CAPSTONE PROJECT

Credit Hours: 3 (3-0)

Pre-requisites: None

Course Description

A research project for a Bachelor of Science (BS) final semester is typically an in-depth investigation into a specific topic within the chosen field of study. The purpose of such a project is to provide students with an opportunity to apply their theoretical knowledge and research skills to a real-world problem or question, thereby enhancing their understanding of the subject matter and preparing them for future academic or professional pursuits. Research projects at this level often require students to demonstrate their ability to gather, analyze, and interpret data, as well as to communicate their findings effectively.

Report Evaluation

a. The Research Report will be assessed by two examiners (one of them will be the supervisor and the second will be an external examiner). Or as per the university directives in vague.

Formatting: APA



ECO-484 URBAN ECONOMICS

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

COURSE DESCRIPTION:

This course is an introduction to urban economics. The focus will be on the main economic forces that lead to the existence of cities and regional clusters. It covers variety of topics including urbanization, housing, pollution, urban poverty and crime.

COURSE OBJECTIVES:

The basic objectives of this course are:

1. To analyze the economic forces that lead to the existence of cities and regional clusters,
2. To study the factors of local selection for firms and workers,
3. To study the economics of urban problems such as crime, poverty and insufficient housing,

COURSE LEARNING OUTCOMES:

Upon successful completion, the students should be able to:

UNDERSTAND the mechanism of the emergence of cities and regional clusters

IDENTIFY the root cause of regional disparities

KNOWLEDGE on role of local government in provision of public goods

COURSE CONTENTS:

1. Introduction
 - Emergence and existence of cities
 - Clustering of firms and workers
 - Expansion and growth of cities
2. Land Rent and Land Use Patterns
 - Urban land rent
 - Land use patterns
 - Neighbourhood choice
3. Urban Size and Growth
 - Population growth
 - Life expectancy rate
 - Mortality rate
4. Policy Topics
 - Education and crime
 - Transportation
 - Housing
 - Local Government
 - The role of local government
 - Local government revenue

TEACHING METHODOLOGY:

- Lectures
- In Class Activities
- Group Discussion



- Guest Lectures (optional)
- Term Paper (optional)

ASSESSMENT:

Mid Term Evaluation: 50%

(Sessional Examination, Quizzes, Assignments, In-Class Activities)

Final Examination: 50%

Note: The major share in mid-term evaluation will be of sessional examination.

The

share of mid-term evaluation and final examination can be 40:60 or 60:40, as approved by statutory bodies of university.

TEXT AND REFERENCE BOOKS:

1. Aurthor O'Sullivan, Urban Economics, (latest edition), McGraw Hill Education.
2. John F. McDonald , Fundamentals of Urban Economics (latest edition), Prentice Hall

ECO-485 DEVELOPMENT POLICY

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

COURSE CONTENTS

1. What is Development?

- Describing and analyzing the development landscape of developing countries
- Evolving thinking on development
- Endogenous and exogenous theories of growth, convergence
- Inclusive growth, human development
- Why some countries are rich and others poor?
- East Asian miracles and China

2. Growth and Development

- Millennium Development Goals (MDGs)
- Sustainable Development Goals (SDGs)
- Human Development paradigm for development: Beyond growth in income
- Pakistan's progress, Dimensions of development, Development policy beyond MDGs

3. Development policy and Governance



- Role of Institutions in Development

- Governance and Corruption

Globalization and Changing Role of State

4. Global Influences on Development Policy

- Policy debate on foreign aid, Pros and cons, and channels of foreign aid
- Trade and International Finance,
- World Trade Organization (WTO)

5. Poverty and Inequality

- Defining and measuring poverty, inequality
- Policies to manage poverty
- Income distribution and social welfare
- Middle-income trap,
- Vulnerability, trickledown effect
- Employment and Income Distribution
- Social Entrepreneurship, Role of Microfinance in poverty alleviation

6. Education and Healthcare

- The role of primary, secondary, tertiary and vocational education in development
- Human Capital Accumulation and Human Development Index

7. Environment and Sustainable Development

- Food security
- Agricultural Market Interventions and Reforms
- Agricultural Research and Extension
- Water Scarcity and Management
- Mineral Resources and their Exploitations

8. Migration, Urbanization, Issues facing Megacities

TEXT AND REFERENCE BOOKS

- Zaidi, S. Akbar, (2015). Issues in Economy of Pakistan. Karachi: Oxford University Press
- Ahmed, Vaqar, (2017). Pakistan's Agenda for Economic Reform. Oxford University Press



ECO-486 Economics of Climate Change

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

COURSE DESCRIPTION:

Climate change is a natural phenomenon associated with human livelihoods. The effects of climate change on different sectors of the economy particularly agriculture and other natural resources may vary across the diverse ecological regions. The major human induced factors causing environmental degradation are: mismanagement / over exploitation of natural resources, deforestation and unsustainable agricultural practices. Timely preparation to climate change is needed to reduce the adverse impacts of climate change in all sectors of the economy in general and agriculture, livestock, forest and water resources in particular.

COURSE OBJECTIVES:

Main objectives of this course are:

1. To impart basic understanding of the concepts of the climate change and its adaptation and mitigation measures.
2. To increase knowledge about the risks and vulnerabilities posed by climate change and its potential impacts for economic development and poverty.
3. To provide an up-to-date economic interpretation of climate change.
4. To discuss and compare the theoretical economic solutions to combating climate change.
5. To outline possible future climate policy issues and their solutions.

COURSE LEARNING OUTCOMES:

It is expected that a successful teaching of the course will result in the following outcomes:

- CLARIFICATION of the concept of climate change, its causes and consequences.
- UNDERSTAND the pertinent threats from the climate change to the global and local economy.
- RECOGNIZE the potential measures needed to minimize adverse impact of climate change to the economy.
- UNDERSTAND the ways and means of addressing climate change related research.
- ABILITY TO contribute in policy and development related dialogue pertaining to climate change.

COURSE CONTENTS

1. Introduction
 - Climate Change
 - Climate Change Factors
 - Global Warming
2. Causes and Consequences of Climate Change
 - Green House Gas Effect



- Trends in Global Carbon Emissions
- Trends and Projections for Global Climate
- 3. Economic Analysis of Climate Change
 - Cost-Benefit Studies of Global Climate Change
 - Climate Change and Inequality
- 4. Policy Responses to Climate Change
 - Adaptation and Mitigation
 - Climate Change Adaptation Studies
 - Climate Change Mitigation: Economic Policy Options
 - Carbon Taxes
 - Tradable Permits
 - Carbon Taxes or Cap and Trade
 - Other Policy Tools such as Subsidies, Standards, R&D, and
 - Technology Transfer
 - The Technical Challenge
- 5. Climate Change Policy in Practice
 - The Paris Agreement of 2015
 - How adequate or inadequate are the commitments
 - Regional, National and Local Actions
 - Water, Forests and Soils

TEACHING METHODOLOGY:

- Lectures
- In Class Activities
- Group Discussion
- Guest Lectures (optional)
- Term Paper (optional)
- Field Exposure (optional)

ASSESSMENT:

- Mid Term Evaluation: 50%

(Sessional Examination, Quizzes, Assignments, In-Class Activities)

- Final Examination: 50%

Note: The major share in mid-term evaluation will be of sessional examination. The share of mid-term evaluation and final examination can be 40:60 or 60:40, as approved by statutory bodies of university.

TEXT AND REFERENCE BOOKS:

1. Frank, A., & Elizabeth, A. S. (2008). The Cost of Climate Change, Natural Resource Defense Council. www.nrdc.org/globalwarming/cost/cost.pdf.
2. Boden, T.A., Marland, G., & Andres, R. J. (2016). Global, Regional, and National Fossil-Fuel CO₂ Emissions, Carbon Dioxide Information Analysis Center (CDIAC), Oak Ridge National Laboratory.
3. Jeremy, C., & Fedor, D. (2016). Tracking Global Carbon Revenues: A Survey of Carbon Taxes versus Cap-and-trade in the Real World. Energy Policy 96: 50-77.
4. Simon, D., & Nicholas S. (2014). Endogenous Growth, Convexity of



Damages and Climate Risk: How Nordhaus' Framework Supports Deep Cuts in Carbon Emissions, Grantham Research Institute on Climate Change and the Environment, Working paper No. 159, June

ECO-487 FISCAL POLICY

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: Public Finance

COURSE DESCRIPTION:

The course is intended to equip students with theoretical and analytical issues of Fiscal Policy. Starting with basic topology of Fiscal interventions and its impact on macro variables. Then gradually moving towards Public Choice models and concluding at the fiscal deficit issues. Then we will move towards the stand alone topics such as fiscal federalism, Fiscal Policy in an Islamic Economy and collaboration of monetary and fiscal policy etc.

COURSE OBJECTIVES:

1. To understand the rationale of government interventions
2. To equip students with issues of fiscal policy

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COURSE LEARNING OUTCOMES:

Upon Successful Completion, the Students Should be able to:

- UNDERSTAND scope of fiscal policy issues
- ACQUIRE knowledge of analytical details in gauging the policy impacts
- UNDERSTAND fiscal policy mechanism of Pakistan

COURSE CONTENTS:

1. Fiscal Policy in Equilibrium Models
2. Goals of Macro-Economic Policy
3. Political Economy of Budget Deficits
4. Tax Smoothing
5. Fiscal policy instruments as Automatic Stabilizers
6. Deficits and Interest Rate
7. Government Budget Constraint
8. Ricardian Approach to Budget Deficits
9. Fiscal Sustainability
10. Fiscal Decentralization
11. Third World Debt Crisis
12. Fiscal Policy and Long run Economic Growth
13. Fiscal Policy in Pakistan
14. Fiscal Policy and Resource Allocation in Islam



TEXT AND REFERENCE BOOKS:

1. Froyen, Richard T., Macroeconomics: Theories and Policies, (latest edition) ,Prentice Hall International
2. Romer David, Advance Macroeconomics, (latest edition) Edition, McGrawHill Irwin
3. Brown C.V. & Jackson P.M., Public Sector Economics, (latest edition), Basil Blackwell,

ECO-488 ISLAMIC BANKING: THEORY AND PRACTICE

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: Nil

COURSE DESCRIPTION:

The course covers the topics on Islamic banking system with emphases on chronological development of Islamic banking system, Shariah compliant financial structures, and on Islamic retail, cooperate and treasury products.

COURSE OBJECTIVES:

The prime objectives of this course are;

1. To know the features, evolution, growth and development of the Islamic banking system in different periods,
2. To know the origin, legitimacy, Shariah principles, structure, mechanism and flows of different types of Islamic finance structures,
3. To know the Islamic retail, corporate and treasury products,
4. To know the various forms of an Islamic investment funds. Sukuk and Takaful.

COURSE LEARNING OUTCOMES:

After completion of this course students are expected to;

1. DEFEND Islamic banking practices on Shariah grounds and REMOVE misconceptions about similar functioning of dual banking systems
2. RECOGNISE and IDENTIFY the cooperate and investment banking products
3. APPLY various Islamic Finance structures to design Islamic retail products,
4. Practically CALCULATE the financials such as return, profit and instalment for each of the Islamic retail products, for Islamic cooperate and investment, treasury product, Sukuk and Takaful.
5. UNDERSTAND the key features, mechanism, operations and required documentations for Sukuk and Takaful (insurance).

COURSE OUTLINES:

1. Introduction to Islamic Banking

- Salient features of Islamic Finance/Banking based on Shariah&Fiqh;
- Prohibition of Riba,
- Prohibition of Gharar,
- Prohibition of Mayser,
- Prohibition of dealing in unlawful goods and services,
- Desire for justice and equity based on business Ethics.
- History and Development of Islamic Banking;
- During 650 AD – 750 AD,



- During 750 AD – 1900 AD,
- During 1900 AD – 2000 AD,
- 2000 AD till date.
- Difference between Islamic and conventional banking

2. Islamic Retail Products

- Islamic finance structures used for Home Finance,
- Islamic finance structures used for Vehicle Finance,
- Islamic finance structures used for Personal Finance,
- Islamic finance structures used for Good Finance,
- Ujrah based Credit Card,
- Islamic Bank Accounts (current, saving and investment accounts).

3. Islamic Coperate Products

- Islamic Bank Guarantee,
- Islamic finance structures based Letter of Credit,
- Coperate finance based on various Islamic finance structures,
- Working Capital finance based on various Islamic finance structures,
- Syndicate finance based on various Islamic finance structures,
- Current Account based on various Islamic finance structures.

4. Islamic Treasury Products for Liquidity Management

- Commodity Instruments based on various Islamic finance structures,
- Tawarruq Instruments based on various Islamic finance structures,
- Islamic Agency Instruments,
- Sukuk Instruments (Asset based Sukuk and Debt-based Sukuk).

5. Islamic Treasury Products for Risk Management

- Introduction to Risk Management,
- Islamic Profit Rate Swap,
- Currency Swap based on various Islamic finance structures,
- Mechanism of Islamic Options based on various Islamic finance structures.

6. Conventional Insurance Policy versus Islamic Takaful

- Takaful Models,
- Contractual Relationship,
- Takaful account,
- Takaful Indemnity,
- Takaful Surplus,
- Expiry of Takaful Policy,
- Difference between Insurance and Takaful.

7. Zakat Calculation in case of Islamic Banks

- Legitimacy of Zakat,
- Zakat on fixed and on liquid/current assets,
- Zakat on liabilities, provisions and reserves.

TEXT AND REFERENCE BOOKS:



1. Arif, M., and M. Iqbal. Foundations of Islamic Banking: The Theory, Practice and Education, Cheltenham, United Kingdom: Edward Elgar Publishing Ltd, 2011.
2. Ayub, M. Understanding Islamic Finance, John Wiley and Sons Ltd., The Atrium, Southern Gate, Chichester, West Sussex, England, 2007.
3. Hanif, M. Islamic Banking Theory and Practice, Ingram International Inc. ISBN 10: 1475233981 and ISBN 13: 9781475233988, 2012.

ECO-489 DYNAMIC OPTIMIZATION

Credit Hours: 3 (3-0)

Contact Hours: 3-0

Pre-requisites: None

COURSE CONTENTS

Complex Number and Circular Functions

- Imaginary and Complex Numbers
- Complex Roots
- Circular Functions.

Integral Calculus

- Comparative Dynamics and Integration
- The Nature of Indefinite Integrals
- Rules of Integrations and Operation: Substitution Rule, Integration by parts.
- Definite integrals and their properties
- Definite Integrals and Area under a curve
- Improper integrals
- Economic Applications of Integrals:
- Finding total functions from marginal functions Investment & capital formation etc.

Differential Equations

First Order Linear Differential Equations

- Meaning and Definition; Homogenous & non-Homogenous cases
- Solution of first order linear differential equations: with constant coefficient & constant term, with variable coefficient and variable terms
- Qualitative approach: Concept of phase diagrams
- types of time paths and the dynamic stability of equilibrium
- Exact differential equations: Solution and Verification
- Non-linear differential equations of the first order and first degree
- Bernoulli Equation
- Separable Variables.
- **Higher Order Differential Equations**
- Solution and Verification of second order linear differential equations with constant coefficients and constant terms
- Dynamic stability of equilibrium
- Economic applications: Market models with price expectations
- The Interaction of inflation and unemployment in continuous time.

Difference Equations

- **First Order Difference Equations**
- Meaning and definition



- First order linear difference equations: Solution and verification of results
- Conditions for dynamic stability of equilibrium, Types of time paths.
- **Higher Order Difference Equations**
- Solution and verification of second-order linear difference equations with constant coefficients and constant terms
- Real and imaginary roots
- Distinct, repeated, and complex roots
- The convergence and divergence of the time paths
- Economic applications: Models of business cycles
- The Multiplier-Acceleration interaction model
- inflation-unemployment model in discrete time
- Higher order difference equations and their solutions.

RECOMMENDED BOOKS

- Chiang, A.C. and Kevin Wainwright. Fundamental Methods of Mathematical Economics, 4th Edition, McGraw Hill Publishing Company.
- Gandolfo, G. Economic Dynamics: Methods and Models, Latest Edition, North Holland Publishing Company
- Weber E. Jean, Mathematical Analysis, Business and Economic Application, Latest edition, Harper and Row Publishers, Netherlands.
- Hoy M., Livermois J, Rees R, Stengos T. Mathematic for Economics, Addison & Wesley Publishers.