

**COMPULSORY COURSES IN ENGLISH FOR BS
(4 YEAR) IN BASIC and SOCIAL SCIENCES**

ENGLISH I (FUNCTIONAL ENGLISH)

Course Objectives:

Enhance language skills and develop critical thinking.

Course Contents:

- i. Basics of Grammar
- ii. English Tenses
- iii. Parts of speech
- iv. English Articles (Definite and Indefinite)
- v. Sentence and Types of Sentences (basis of structure and meaning)
- vi. Practice in unified sentence
- vii. Clause and its types
- viii. Phrases
- ix. Analysis of phrase, clause and sentence structure
- x. Active And Passive Voice
- xi. Direct and Indirect Narrations
- xii. Transitive and intransitive verbs
- xiii. Punctuation and spelling
- xiv. Transformations

Suggested Readings:

1. **Functional English**
 - a) Grammar
 1. Practical English Grammar by A.J. Thomson and A.V. Martinet. Exercises 1. Third edition. Oxford University Press. 1997. ISBN 0194313492
 2. Practical English Grammar by A.J. Thomson and A.V. Martinet. Exercises 2. Third edition. Oxford University Press. 1997. ISBN 0194313506

Everyday Science

Objectives:

To provide the students basic knowledge about science.

Science:

Introduction: History of Science, Achievements of some giants of science in the chronological order, Islamic Science, Some famous Muslim scientists (Al Khwarzmi, Jabir bin Hayan, Bu Ali Seena, Ibn Al Hatham) Nature of Science, Impact of Science on Society (Importance, scope, Applications, Horrors, Limitation of Science)

The Universe:

The Origin, The Big Bang, The Structure, Galaxies, The future of the Universe, Solar System and their characteristics , The Sun , Moon, Earth (Structure and Layers of Earth, Atmosphere Composition, The most amazing objects (Asteroids, Meteorites, Comets), The Green House effects (Earth thermostat, Global warming, Ozone's depletion, Acid rain) Earthquakes and their causes, Eclipses (Solar and Lunar)

Energy:

Energy, Units of Energy, Interconvertible form of Energy, Sources of Energy (Primary and Secondary)

The Communication System (Radio, Television, Telephone), Fertilizers, Pesticides, Camera, Plastic, Computers, Medicines, Vaccines.

Living Things:

Introduction, Classification: Oland Kingdom, Non-green Plants, Animal Kingdom, Invertebrates (Insects), Vertebrates (Fishes, Birds, Dolphins, Porpoises, Reptiles, Amphibians, Birds, Mammals), Origin of Life, Cells and different parts of cells, Diseases; Introduction, Infectious diseases (Cholera, Malaria, Typhoid, Pertussis), Bacteria, Viruses, Antibiotics, Chromosomes, Genes, Balance Food (Carbohydrates, Proteins, Fats, Minerals, Water), Vitamins.

Human phycology:

System of the human body, Skeletal, Muscular, Digestive, Excretory, Circulatory Nervous System.

Recommended Books:

1. "Every Day Science" by Prof Dr M. Akram Kashmiri (A.H Publishers)
2. "Every Day Science Advanced" by Imtiaz Shahid (Advance AP Publishers)

ECONOMICS-I (PRINCIPLES OF MICRO ECONOMICS)

Objectives:

Microeconomics studies the behavior of specific economic units that make up the economic aggregates. Microeconomics is the subject matter of this course explaining the behavior of specific economic units. The main focus will be on theories of consumption, production, distribution and role of the government. Topics include demand, supply, household behavior and consumer choice, the cost structure of the firms, market structures, market failures and externalities, economic regulations and Good governance. The course will rely heavily on graphical analysis and simple numerical calculations.

Introduction to Economics:

Studying Choice in a World of Scarcity :The No-Free-Lunch Principle , The Cost-Benefit Principle , Reservation Prices , Economic Surplus , Opportunity Cost , The Role of Economic Models , To What Extent should an Activity be Perused , Micro Economic Versus Macro Economics , Economic Naturalism , Positive Versus Normative Economics , Some common Pitfalls for Decision Makers , Conclusion.

Consumer Behaviour:

Cardinal Approach/Utility Analysis, Marginal Utility, Law of Diminishing Marginal Utility, 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 Conclusion.

Demand & Supply:

Demand Function, Law of Demand, Shift in Demand, Change in Demand Factors Affecting Demand, Supply Function, Law of Supply, Changes in Supply Price Equilibrium, Market Equilibrium.

Elasticity of Demand & Supply:

Price Elasticity of Demand & Supply, Point Elasticity of Demand & Supply Arc Elasticity of demand & Supply, Income Elasticity of Demand & Supply, Cross Elasticity of demand & Supply, Conclusion.

Efficiency and Exchange:

Market Equilibrium and Efficiency, Economic Surplus, the Cost of Preventing Price adjustments, Taxes and Efficiency, Conclusion.

The Theory of production & Theory of Cost:

The Production Function , Total, average and marginal product, Laws of Returns to Scale , Short run Theory of Cost , Seven family cost curves, Relationship between Production and Cost Curves. Long-run Theory of Cost: Graphical Representation of Long Run Cost Economies, Diseconomies and Constant Returns to Scale.

Market Structure:

Perfect Competition vs. Pure Competition, Different Possibilities of SR firm Equilibrium, Profit Maximization in the Short-run and long-run Monopoly: Short run and Long run Equilibrium under Monopoly. Conclusion (Comparison of both) Imperfect Competition: Monopolistic Competition, Price and output determination in monopolistic competition, Comparison perfect competition with monopolistic competition Oligopoly: Definition, Strategic behavior and game Theory, Price Rigidity and the kinked demand curve, Conclusion (Comparison of both) Labor Markets The Market Demand for Labor, Supply of labor, Shifts in the market demand for and supply of labor, Inefficiency wages, monopsony

Textbooks & Supplies:

1. **Mankiw**, “Principles of Economics” 7th Edition, (2008), Southwest Publishers
2. **Miller, R. L** –Economics Today-14th Edition (2005) Addison Wesley

Supplementary Material:

Samuelson Nordons –Economics -18th edition (2004), McGraw-Hill, Inc. McConnell and Bruce- Principles of Economics -17th Edition, (2006), McGraw- Hill.

INTRODUCTION TO SOCIOLOGY

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
 - a. Definition, Scope, and Subject Matter
 - b. Sociology as a Science
 - c. Historical back ground of Sociology
 - d. Relationship of sociology with other social sciences
2. Basic Concepts
 - a. Group, Community, Society
 - b. Associations
 - i. Non-Voluntary
 - ii. Voluntary
 - c. Organization
 - i. Informal
 - ii. Formal
 - d. Social Interaction
 - i. Levels of Social Interaction
 - ii. Process of Social Interaction
 - a) Cooperation
 - b) Competition
 - c) Conflict
 - d) Accommodation
 - e) Acculturation and diffusion
 - f) Assimilation
 - g) Amalgamation
3. Social Groups
 - a. Definition and Functions
 - b. Types of social groups
 - i. In and out groups
 - ii. Primary and Secondary group
 - iii. Reference groups
 - iv. Informal and Formal groups
 - v. Pressure groups
4. Culture
 - a. Definition, aspects and characteristics of Culture
 - i. Material and non material culture
 - ii. Ideal and real culture
 - b. Elements of culture
 - i. Beliefs
 - ii. Values
 - iii. Norms and social sanctions
 - c. Organizations of culture
 - i. Traits

- ii. Complexes
- iii. Patterns
- iv. Ethos
- v. Theme
- d. Other related concepts
 - i. Cultural Relativism
 - ii. Sub Cultures
 - iii. Ethnocentrism and Xenocentrism
 - iv. Cultural lag
- 5. Socialization and Personality
 - a. Personality, Factors in Personality Formation
 - b. Socialization, Agencies of Socialization
 - c. Role and Status
- 6. Deviance and Social Control
 - a. Deviance and its types
 - b. Social control and its need
 - c. Forms of Social control
 - d. Methods and Agencies of Social control
- 7. Collective Behaviour
 - a. Collective behaviour, its types
 - b. Crowd behaviour
 - c. Public opinion
 - d. Propaganda
 - e. Social movements
 - f. Leadership

Suggested Readings:

1. Anderson, Margaret and Howard F. Taylor. 2001. *Sociology the Essentials*. Australia: Wadsworth.
2. Brown, Ken 2004. *Sociology*. UK: Polity Press
3. Giddens, Anthony 2002. *Introduction to Sociology*. UK: Polity Press.
4. Macionis, John J. 2006. 10th Edition *Sociology* New Jersey: Prentice-Hall
5. Tischler, Henry L. 2002. *Introduction to Sociology* 7th ed. New York: The Harcourt Press.
6. Frank N Magill. 2003. *International Encyclopedia of Sociology*. U.S.A: Fitzroy Dearborn Publishers
7. Macionis, John J. 2005. *Sociology* 10th ed. South Asia: Pearson Education
8. Kerbo, Harold R. 1989. *Sociology: Social Structure and Social Conflict*. New York: Macmillan Publishing Company.
9. Koenig Samuel. 1957. *Sociology: An Introduction to the Science of Society*. New York: Barnes and Nobel..
10. Lee, Alfred Mclung and Lee, Elizabeth Briant 1961. *Marriage and The family*. New York: Barnes and Noble, Inc.
11. Leslie, Gerald et al. 1973. *Order and Change: Introductory Sociology* Toronto: Oxford University Press.
12. Lenski, Gevbard and Lenski, Jeam. 1982. *Human Societies*. 4th edition New York: McGraw-Hill Book Company.
13. James M. Henslin. 2004. *Sociology: A Down to Earth Approach*. Toronto: Allen and Bacon.

Course Title: Introduction to Information & Communication Technologies (ICT) 3(3+0)

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.

Required Skills

These basic competencies are assumed on the first day of class. Students must assume responsibility for learning these skills if he/she does not already possess them. If an instructor finds that you do not have the required skills and knowledge, you may be asked to withdraw from the course.

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.
- 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.

Islamic History (571-661 AD)

(Life and Teachings of Prophet Muhammad (S.A.W) and Pious Caliphs)

3 Credit Hours

➤ **Pre-Islamic Arabia**

Geographical, Socio-Economic and Religious conditions of Pre-Islamic Arabia, especially of Hijaz

➤ **The Prophet Hazrat Muhammad (S.A.W)**

Early Life of the Prophet, declaration of prophet hood and preaching of Islam, Response of the Society, Migration to Ethiopia and Medina, Socio-economic and cultural conditions in Medina, contributions of *Ansar* and the system of 'Brotherhood', Charter of Medina, Wars of Badr, Uhad and Ahzab, Peace Accord of Hdaybia, Prophet's letters to the various rulers, Conquest of Makkah, Battle of Hunayn, Spread of Islam in Central Arabia, Tubuk Expedition, Prophet's first and last *Hajj* and the significance of the last Sermon, Achievements of the Prophet.

➤ **Hazrat Abu Bakr Siddiq (R.A) (632-634 AD)**

Early life and sacrifices for the cause of Islam, his election as a first Caliph; Movements of Apostasy, rise of false prophets, the refusal of *Zakat* payment, Consolidation of Centre, Conquest of Iraq, relations with Iran, Syria and Byzantine, Compilation of the *Quran*, his character and achievements.

➤ **Hazrat Umar Farooq (R.A) (634-644 AD)**

His early life and acceptance of Islam, his services to the cause of Islam, his role during the Caliphate of Hazrat Abu Bakr, his nomination as second Caliph, Conquests of Iran, Syria, Palestine, Egypt, Azerbaijan and Armenia, Expansion of Muslim power, Reforms and administration, development of state institutions and the projects of public welfare, his character and achievements.

➤ **Hazrat Usman Ghani (R.A) (644-656 AD)**

Early life, acceptance of Islam, his role during the life time of the Prophet, Hazrat Abu Bakr and Hazrat Umar, his election as third Caliph, Conquest of North Africa, Cyprus, Tabaristan, Tukharistan and Makran, the Sabite Movement, opposition of Hazrat Usman. His martyrdom and its consequences, his services to the cause of Islam, his character and achievements.

➤ **Hazrat Ali (R.A) (656-661 AD)**

Early life, his role during the life time of the Prophet, Hazrat Abu Bakr, Hazrat Umar and Hazrat Usman, Hazrat Ali as fourth Caliph, Battles of the Camel and Siffin, emergence of the Kharijites, Battle of Nahrawan, Hazrat Ali's martyrdom, his character and achievements. Nomination of Imam Hassan (R.A) as a Caliph and his abdication.

➤ **Administration and Structure of Government under the Pious Caliphs**

Administrative, financial and judicial systems under the Pious Caliphs, Status of the *Dhimmis* and the *Mawaliis*, social life of the Muslims, and an overview of the *Khalifat-i-Rashida*.

Suggested Readings:

1. Abdul Hakim, Khalifah, *The Prophet and His Message*, Lahore: Institute of Islamic Culture, 1972.
2. Ali, Syed Ameer, *History of the Saracens*, Lahore: Sang-i- Meel Publishers, 1985.
3. Ali, Syed Ameer, *The Spirit of Islam*, Lahore: Sang-i- Meel Publishers, 1985.
4. Haq, Mazhur-ul, *A short History of Islam*, Lahore: Bookland, 1977.
5. Hamidullah, Muhammad, *The Muslim Conduct of State*, Lahore: 1977.
6. Hitti, Philip K., *History of the Arabs*, London, 1974.
7. Ibn-i-Hisham, *Sirat-un-Nabi Kamil*, tr. Abdul Jalil Siddiqi, Lahore, 1979.
8. Ibn Jarir, Abi Jaffar Muhammad, *Tarikh-i-Tibri*, tr. Muhammad Ibrahim Nadwi, Karachi, 1982.
9. Ibn-i-Ishaq, *Sirat-ul-Nabi*,
10. Lings, Martin, *Muhammad: His Life based on the earliest sources*, Lahore, 1983.
11. Lings, Martin. *The Caliphate, Its Rise, Decline and Fall*. Beirut, 1963.
12. Nadwi, Shah Moin-ud-Din Ahmad .*Tarikh-i-Islam*. Vol. I, Islamabad, 1975.
13. Nu'mani Shibli, *Sirat al-Nabi*. Lahore, Vol. I, 1975.
14. Shah, Pir Muhammad Karam, *Ziaul Nabi*, 7 Vols. Lahore: Ziaul Quran Publications. n. d.
15. Siddiqui, Abdul Hameed, *The Life of Muhammad (SAW)*, Lahore, 1981.
16. Siddiqi, Amir Hassan, *The Origin and Development of Muslim Institutions*, Karachi: 1969.
17. Siddiqui, Mazharuddin, *Development of Islamic State and Society*, Lahore, 1956.
18. Siddiqui, Naeem, *Muhsin i Insaniat*,
19. Watt, Montgomery, *Muhammad at Mecca*, Karachi, 1969.
20. Watt, Montgomery. *Muhammad at Madina*, Karachi, 1969.
21. Wellhausen, S. *Arab Empire and its fall*. Beirut, 1963.
22. *Naqush Rasool Number*
23. Maudoodi, *Khilafat o Malokiat*,
24. Urwa bin Zubair, *Almaghazi*, tran. Maghazi-e- Rasul Allah SAW, Idarah i Saqafat i Islamia, Lahore,

English II (Communication Skills)

Objectives: Enable the students to meet their real life communication needs.

Course Contents

- i. Language and Communication
- ii. Communication and its types
- iii. Components of communication
- iv. Process of Communication
- v. 7 Cs of Effective communication
- vi. Barriers of Communication
- vii. Topic Sentence
- viii. Paragraph Writing (Practice in writing a good, unified and coherent paragraph)
- ix. Essays and its Types
- x. CV and Job Application
- xi. Comprehension
- xii. Précis and Summary Writing
- xiii. Translation Skills
- xiv. Letter Writing
- xv. Email

Note: documentaries to be shown for discussion and review

Recommended books:

Communication Skills

- a) Grammar
 1. Practical English Grammar by A.J. Thomson and A.V. Martinet. Exercises 2. Third edition. Oxford University Press 1986. ISBN 0 19 431350 6.
- b) Writing
 1. Writing. Intermediate by Marie-Christine Boutin, Suzanne Brinand and Françoise Grellet. Oxford Supplementary Skills. Fourth Impression 1993. ISBN 019 435405 7 Pages 45-53 (note taking).
 2. Writing. Upper-Intermediate by Rob Nolasco. Oxford Supplementary Skills. Fourth Impression 1992. ISBN 0 19 435406 5 (particularly good for writing memos, introduction to presentations, descriptive and argumentative writing).
- c) Reading
 1. Reading. Advanced. Brian Tomlinson and Rod Ellis. Oxford Supplementary Skills. Third Impression 1991. ISBN 0 19 453403 0.
 2. Reading and Study Skills by John Langan
 3. Study Skills by Richard Yorke

Outlines of Courses for BS Degree in ENVIRONMENTAL SCIENCE

SEMESTER 1

COURSE 1: INTRODUCTION TO ENVIRONMENTAL SCIENCE 3 (3-0)

Objectives:

The objective of this course is to provide orientation on the evolution and scope of this emerging discipline and to motivate them to think beyond basic sciences to decision sciences. After completing this course, the students are expected to learn the importance of Environmental Science in human life, its relationship with various segments of society and sectors of development. The students are also expected to become familiar with current national, regional and global challenges for sustainable development.

Course Outline:

Basic principles: about convergence of ecology with economic and sociology to evolve as environmental science, its nature, history, scope and the contribution to society. Environmental aspects: physic-chemical, biological, socio-economic, socio-cultural, moral and ethical, and philosophical thinking.

Environmental problems: local, regional and global level. Environmental challenges: Sustainability of resources for development: efficiency of energy and water resources, current and future trends in growth and resultant environmental pollution, poverty and resource depletion, development in industry, agriculture and urbanization.

Recommended Books:

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: working with the Earth*. 11th Ed. Miller, G., Tyler. Cengage Learning, 2005.

INTRODUCTION TO POLITICAL SCIENCE

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.

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 Sindhalogy, 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 Ilmi Kutub Khana, 1996.
5. R. C. Agarwal, *Political Theory (Principles of Pol. Science)*, New Delhi, S. Chand & Co., 2006.
6. Robert Jackson and Dorreen Jackson, *A Comparative Introduction to Political Science*, New Jersey, Prentice – Hall, 1997
7. Rodee Anderson etc. *Introduction to Political Science*, Islamabad, National Book Foundation, Latest Edition.
8. Roskin, Michael G., *Political Science: An Introduction*, London: Prentice Hall, 1997.
9. Shafi, Choudhry Ahmad, *Usul-e-Siyasiat (Urdu)*, Lahore Standard Book Depot, 1996.
10. V. D. Mahajan, *Political Theory- Principles of Pol. Science*, New Delhi, S. Chand & Co., 2006.

Note: One course will be selected from the following six courses of Mathematics.

COMPULSORY MATHEMATICS COURSES FOR BS (4 YEAR)

(FOR STUDENTS NOT MAJORING IN MATHEMATICS)

1. MATHEMATICS I (ALGEBRA)

Credit Hours: 3 + 0

Specific Objectives of the Course:

To prepare the students, not majoring in mathematics, with the essential tools of algebra to apply the concepts and the techniques in their respective disciplines.

Course Outline:

Preliminaries: Real-number system, complex numbers, introduction to sets, set operations, functions, types of functions. *Matrices:* Introduction to matrices, types, matrix inverse, determinants, system of linear equations, Cramer’s rule.

Quadratic Equations: Solution of quadratic equations, qualitative analysis of roots of a quadratic equations, equations reducible to quadratic equations, cube roots of unity, relation between roots and coefficients of quadratic equations.

Sequences and Series: Arithmetic progression, geometric progression, harmonic progression. *Binomial Theorem:* Introduction to mathematical induction, binomial theorem with rational and irrational indices. *Trigonometry:* Fundamentals of trigonometry, trigonometric identities.

Recommended Books:

1. Dolciani M. P, Wooton W, Beckenback E F, Sharron S, *Algebra 2 and Trigonometry*, 1978, Houghton & Mifflin,
2. Boston (suggested text)
3. Kaufmann J. E, *College Algebra and Trigonometry*, 1987, PWS-Kent Company, Boston
4. Swokowski E. W., *Fundamentals of Algebra and Trigonometry* (6th edition), 1986, PWS-Kent Company, Boston

SHAHEED BENAZIR BHUTTO UNIVERSITY, SHERINGAL

Associate Degree Contents for Urdu Language and Literature

اردو بحیثیت زبان و ادب

1. زبان

- ا۔ تعارف اور تفہیم
- ب۔ اردو بحیثیت تدریسی زبان
- س۔ اردو بحیثیت قومی زبان
- ج۔ اردو بحیثیت زبان و ادب
- د۔ معاشرتی و سماجی لحاظ و ادب کا مقام اور تعین

2. اردو شعراء کا خصوصی مطالعہ تعارف اور تفہیم

- ا۔ علامہ اقبال
- ب۔ مرزا غالب
- س۔ میر تقی میر
- ج۔ احمد فراز
- د۔ مومن خان مومن

3. اردو نثر کا خصوصی مطالعہ تعارف اور تفہیم:

- ا۔ علامہ اقبال کا فکر فلسفہ "فلسفہ خودی" کے حوالے سے۔
- ب۔ مرزا غالب کی نثر "خطوط غالب کے حوالے سے۔
- س۔ تنقید کیا ہے؟ الطاف حسین حالی کی تنقید "مقدمہ شعرو شاعری" یاشبلی کی "شعرالعجم" کے حوالے سے۔
- ج۔ طنز و مزاح کیا ہے؟ مشتاق احمد کی مزاحیہ اسلوب یا پطرس بخاری کی طنز و مزاح کے حوالے سے۔
- د۔ سر سید احمد خان کی نثری اسلوب "علی گڑھ تحریک" کے حوالے سے۔
- م۔ اردو ڈرامہ "انار کلی" اسلوب، کردار نگاری کے حوالے سے۔

ENGLISH III (TECHNICAL WRITING AND PRESENTATION SKILLS)

Objectives: Enhance language skills and develop critical thinking

Course Contents:

- i. Essay Writing
 - a. Process vs. Product
 - b. Brain Storming
 - c. Outlining
 - d. Proof Reading
 - e. Writing Persuasive Essays
 - f. Writing Narrative Essays
 - g. Writing Descriptive Essays
 - h. Writing Expository Essays

- ii. Research Proposal
 - a. Research proposal and its Importance
 - b. Choosing Research question for proposal
 - c. How to write a research proposal?
 - d. Parts of research proposal
 - e. Language, tense, and style

- iii. Report Writing
 - a. Types of reports
 - b. Stages in report writing
 - c. Components of report
 - d. Language, style, diction, presentation and layout of a report

- iv. Writing a Research/Term Paper
 - a. How to write a research paper/term paper (emphasis on style, content, language, form, clarity, consistency)

- v. Presentation Skills
 - a. Presentation Strategies
 - b. Presentation preparation, writing, delivery and audience questions
 - c. Choosing presentation topics
 - d. Knowing your audience in presentation
 - e. Delivery of a successful presentation
 - f. Role of dress, good speaking skills, voice, gestures and appearance
 - g. Motivation, interest and Anxiety
 - h. What NOT to do in presentation?
 - i. Audio-Visual Aids
 - j. Designing Material

Note: Extensive reading is required for vocabulary building

Suggested Readings:

Technical Writing and Presentation Skills

- a) Essay Writing and Academic Writing
 1. Writing. Advanced by Ron White. Oxford Supplementary Skills. Third Impression 1992. ISBN 0 19 435407 3 (particularly suitable for discursive, descriptive, argumentative and report writing).
 2. College Writing Skills by John Langan. McGraw-Hill Higher Education. 2004.
 3. Patterns of College Writing (4th edition) by Laurie G. Kirszner and Stephen R. Mandell. St. Martin's Press.
- b) Presentation Skills
- c) Reading

The Mercury Reader. A Custom Publication. Compiled by northern Illinois University. General Editors: Janice Neulib; Kathleen Shine Cain; Stephen Ruffus and Maurice Scharon. (A reader which will give students exposure to the best of twentieth century literature, without taxing the taste of engineering students).

Pakistan Studies

Course Title: Pakistan Studies (Compulsory)

Code: PS-311

Credit Hours: (3+0)

Introduction/Objectives:

- Develop vision of historical perspective, government, politics, contemporary Pakistan, ideological background of Pakistan.
- Study the process of governance, national development, issues arising in the modern age and posing challenges to Pakistan.

Course Outline:

1. Historical Perspective

- a. Ideological rationale with special reference to Sir Syed Ahmed Khan, Allama Muhammad Iqbal and Quaid-e-Azam Muhammad Ali Jinnah.
- b. Factors leading to Muslim separatism
- c. People and Land
- d. Indus Civilization
- e. Muslim advent
- f. Location and geo-physical features.

2. Government and Politics in Pakistan

Political and constitutional phases:

- a. 1947-58
- b. 1958-71
- c. 1971-77
- d. 1977-88
- e. 1988-99
- f. 1999 -2007
- g. 2008-2013
- h. 2013-2018
- i. 2018 onward

3. Contemporary Pakistan

- a. Economic institutions and issues
- b. Society and social structure
- c. Ethnicity
- d. Foreign policy of Pakistan and challenges

e. Futuristic outlook of Pakistan

Recommended Books:

1. Burki, Shahid Javed. State and Society in Pakistan, The Macmillan Press Ltd 1980.
2. Akbar, S. Zaidi. Issue in Pakistan's Economy. Karachi: Oxford University Press, 2000.
3. S.M. Burke and Lawrence Ziring. Pakistan's Foreign policy: An Historical analysis. Karachi: Oxford University Press, 1993.
4. Mehmood, Safdar. Pakistan Political Roots and Development. Lahore, 1994.
5. Wilcox, Wayne. The Emergence of Bangladesh., Washington: American Enterprise, Institute of Public Policy Research, 1972.

ISLAMIC STUDIES (Compulsory)

Credit Hours: (3+0)

Objectives: To learn about Islam and its application in day to day life.

Content detail:

1. To provide Basic information about Islamic Studies
2. To enhance understanding of the students regarding Islamic Civilization
3. To improve Students skill to perform prayers and other worships
4. To enhance the skill of the students for understanding of issues related to faith and religious life.

DETAIL OF COURSES

INTRODUCTION TO QURANIC STUDIES

- 1) Basic Concepts of Quran
- 2) History of Quran
- 3) Uloom-ul -Quran

STUDY OF SELECTED TEXT OF HOLLY QURAN

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

STUDY OF SELECTED TEXT OF HOLLY QURAN

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

SEERAT OF HOLY PROPHET (S.A.W) I

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

SEERAT OF HOLY PROPHET (S.A.W) II

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

INTRODUCTION TO SUNNAH

- 1) Basic Concepts of Hadith
- 2) History of Hadith
- 3) Kinds of Hadith
- 4) Uloom –ul-Hadith
- 5) Sunnah & Hadith
- 6) Legal Position of Sunnah

SELECTED STUDY FROM TEXT OF HADITH

INTRODUCTION TO ISLAMIC LAW & JURISPRUDENCE

- 1) Basic Concepts of Islamic Law & Jurisprudence
- 2) History & Importance of Islamic Law & Jurisprudence
- 3) Sources of Islamic Law & Jurisprudence
- 4) Nature of Differences in Islamic Law
- 5) Islam and Sectarianism

ISLAMIC CULTURE & CIVILIZATION

- 1) Basic Concepts of Islamic Culture & Civilization
- 2) Historical Development of Islamic Culture & Civilization
- 3) Characteristics of Islamic Culture & Civilization
- 4) Islamic Culture & Civilization and Contemporary Issues

ISLAM & SCIENCE

- 1) Basic Concepts of Islam & Science
- 2) Contributions of Muslims in the Development of Science
- 3) Quran & Science

ISLAMIC ECONOMIC SYSTEM

- 1) Basic Concepts of Islamic Economic System
- 2) Means of Distribution of wealth in Islamic Economics
- 3) Islamic Concept of Riba
- 4) Islamic Ways of Trade & Commerce

POLITICAL SYSTEM OF ISLAM

- 1) Basic Concepts of Islamic Political System
- 2) Islamic Concept of Sovereignty
- 3) Basic Institutions of Govt. in Islam

ISLAMIC HISTORY

- 1) Period of Khlaft-e-Rashida
- 2) Period of Umayyads
- 3) Period of Abbasids

SOCIAL SYSTEM OF ISLAM

- 1) Basic Concepts of Social System Of Islam
- 2) Elements of Family
- 3) Ethical values of Islam

REFERENCE BOOKS:

- 1) Hameed ullah Muhammad, "**Emergence of Islam**", IRI, Isb.
- 2) Hameed ullah Muhammad, "**Muslim Conduct of State**"
- 3) Hameed ullah Muhammad, "**Introduction to Islam**"
- 4) Mulana Muhammad Yousaf Islahi,"
- 5) Hussain Hamid Hassan, "**An Introduction to the Study of Islamic Law**" leaf Publication Islamabad, Pakistan.
- 6) Ahmad Hasan, "**Principles of Islamic Jurisprudence**" Islamic Research Institute, International Islamic University, Isb. (1993)
- 7) Mir Waliullah, "**Muslim Jurisprudence and the Quranic Law of Crimes**" Islamic Book Service (1982)
- 8) H.S. Bhatia, "**Studies in Islamic Law, Religion and Society**" Deep & Deep Publications New Delhi (1989)
- 9) Dr. Muhammad Zia-ul-Haq, "**Introduction to Al Sharia Al Islamia**" Allama Iqbal Open University, Islamabad (2001).