Course Atlas
(Sophomores, Juniors & Seniors)
Fall 2011 Semester

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General Education Divisions

**Humanities**
Requirements (1 Course)
Islamic studies/ethics  (ISLM 101 or CRST 152)

Disciplines (2 courses; at least one NOT in Religious Studies)
Art
English
History
Music
Religious Studies

**Social or Behavior Sciences**
Requirements (1 Course)
Pakistan Studies  (PKST 101)

Disciplines: (2 courses; at least one NOT in Pakistan Studies)
Anthropology
Education
Pakistan Studies
Political Science

**Physical or Natural Sciences**
Disciplines: (3 courses with labs; at least one from each group)
Physical Sciences
Chemistry
Physics

Natural Sciences:
Botany
Zoology

**Mathematics and Information Technology**
Requirements: (1 Course)
A Computer Science course OR demonstrate competence in Computer Science.
** If competence is demonstrated, the student must take a course in this division to replace it**

Disciplines: (2 courses; at least one NOT in Computer Science)
Computer Science/Information Technology
Mathematics

Statistics

**Communications**
Requirements: (4 Courses)
Fundamental of speech  (MCOM 100)
English Writing /Grammar  (ENGL 101) or demonstrated competence
Advanced Writing Skills  (ENGL 103)
Communicative Urdu  (URDU 101)
If competence is demonstrated, the student must replace ENGL 101 with another course from the English Discipline. **
BIOLOGICAL SCIENCES

BIOL 101: Man and Environment (4 credits)
Only for students who have not studied biology in higher secondary school or A level or equivalent
Life on the earth revolves around the interaction of living organisms with their environment. This course emphasizes the role of plants, animals and environment as it relates to survival and welfare of mankind.

Section B  Monday, Wednesday, Friday 08:00-08:50  S-425  Ms. U. Mobeen
Lab  Tuesday 08:00-09:50  S-341

Section C  Monday, Wednesday, Friday 03:00-03:50  S-425  Dr. A. Khan
Lab  Thursday 11:00-12:50  S-433

Section D  Tuesday, Thursday 02:00-3:15  S-425  Dr. A. Khan
Lab  Friday 08:00-09:50  S-341

BIOL 102: Introductory Plant Biology (4 credits)
Only for students who have studied biology in higher secondary school/A level or equivalent
This course covers structure-function relationship of plants, basic principles of genetics and molecular genetics, biotechnology and its use in modifying plants. Ecosystem, environmental issues and the relevance of flowering plants in human life are also examined

Section B  Tuesday, Thursday 09:30-10:45  S-416  Dr. M. R. Siddiqi
Lab  Monday 08:00-09:50  S-331

BIOL 103: Elementary Human Biology (4 credits)
Only for students who have not studied biology in higher secondary school or A level or equivalent
Basic human anatomy; nutrition; genetics of blood groups; genetic diseases, an effect of environment on human health.

Section A  Tuesday, Thursday 12:30-01:45  S-410  Dr. W. George
Lab  Monday 10:00-11:50  S-341

BIOL 104: Life on Earth (4 credits)
Only for students who have not studied biology in higher secondary school or A level or equivalent
The science of biology and its various branches. Characteristics of life, organizational levels (from biological molecules and cells to organisms), ecology and evolution, a survey of various groups of organisms and their phylogenetic relationships.

Section A  Tuesday, Thursday 11:00-12:15  S-417  Ms. U. Mobeen
Lab  Wednesday 10:00-11:50  S-433

Section B  Monday, Wednesday, Friday 03:00-03:50  S-424  Dr. F. Iqbal
Lab  Wednesday 10:00-11:50  S-321

Section C  Tuesday, Thursday 08:00-09:15  S-410  Dr. F. Iqbal
Lab  Thursday 11:00-12:50  S-329

BIOL 105: General Zoology (4 credits)
Only for students who have studied biology in higher secondary school or A level or equivalent
The structure, functions, ecology and evolution of all major animal groups including invertebrates and chordates. The origin of multicellular forms and basic environmental factors affecting them.

Section A  Monday, Wednesday, Friday 10:00-10:50  S-425  Dr. K. Z. Rasib
Lab  Monday 08:00-09:50  S-341
BIOL 201: Cell Biology (3 credits)
This course will examine: the ultra structure of cell; the cell membrane, cytoskeleton, nucleus, mitochondria, chloroplast, ribosome, dictyosome, vacuole, microbodies & cell surface. Protein synthesis and secretion, chromosomal aberrations, mitosis, meiosis & cell cycle regulation will also be discussed.

Section A  Monday, Wednesday 02:00-02:50  S-410  Dr. Saba Butt
Lab  Friday 02:00-03:50  S-321
Section B  Monday, Wednesday 11:00-11:50  S-425  Dr. Saba Butt
Lab  Friday 08:00-09:50  S-331

BIOL 202: Diversity in Plants (4 credits)
This course deals with the classifications of organisms; survey of algae, fungi and various groups of plants with emphasis on evolutionary trends.

Section A  Monday, Wednesday, Friday 09:00-09:50  S-410  Dr. H. Saeed
Lab  Tuesday 11:00-12:50  S-341

BIOL 203: General Genetics (3 credits)
Introduction; concept of gene; Mendelian inheritance; sex-linked inheritance; linkage and crossing over; cytoplasmic inheritance; structure, chemistry, functions and types of DNA and RNA; recombination in viruses, bacteria, fungi and eukaryotes; Operon model; transposable elements; genetic code; variation in chromosomal number and structure; population genetics; problems related to the theoretical course.

Section A  Monday, Wednesday 03:00-03:50  S-410  Dr. M. Irfan
Lab  Wednesday 10:00-11:50  S-331

BIOL 205: Biostatistics (3 credits)
Introduction to statistics including mean, mode, median, standard errors and standard deviation, probability and test of significance, correlation, analysis of variance, regression and experimental design.

Section A  Tuesday, Thursday 08:00-08:50  S-416  Dr. S. Butt
Lab  Tuesday 11:00-12:50  S-321

BIOL 313: Biochemistry (3 credits)
Prerequisite for non-science students: CHEM 110
The course designed to provide solid understanding of organic structure of living systems. The topics include chemistry, structure, specific roles of carbohydrates, lipids, amino acids, protein and nucleic acids. General characteristics and properties of enzymes including enzyme kinetics will also be covered.

Section A  Monday, Wednesday, Friday 11:00-11:50  S-410  Dr. K Shoaib
Lab  Tuesday 08:00-09:50  B-329

BIOL 315: Fundamentals of Microbiology (3 credits)
This course deals with the study of microbial life and its function using pure culture techniques, microscopy, bacterial morphology, anti-microbial resistance and their applications in industry, biotechnology, environmental science and basic research.

Section A  Monday, Wednesday 10:00-10:50  S-410  Dr. Saba Butt
Lab  Thursday 11:00-12:50  S-321

BIOL 404: Conservation Biology (4 credits)
Prerequisite: BIOL 302
The philosophy and significance of wildlife conservation: effects of industrialization, agriculture and urbanization on wildlife; wildlife rules and regulations; wildlife sanctuaries, game reserves and national parks, endangered species; international conservations.

Section A  Monday, Wednesday, Friday 03:00-03:50  S-417  Ms. U. Mobeen
Lab  Thursday 02:00-03:50  S-331
**BIOT 201: Introduction to biotechnology**  (3 credits)
Brief history of biotechnology, different aspects of biotechnology and its future development as a cornerstone in human welfare.

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**BIOT 202: Protoplast, Cell & Tissue Culture**  (4 credits)

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**BIOT 301: Analytical Techniques in Biology**  (3 credits)
The course includes fundamental techniques in Biological Sciences involving vast array of methodologies that a biologist requires to step in any area of research. It includes various types of Chromatographies, Gel Electrophoresis, Staining procedures, Spectrophotometry, Microtomy and Microscopy.

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**BIOT 302: Fundamentals of Enzymology**  (4 credits)
The course covers a brief history of enzymes, the nature of the enzyme structure, an introduction to the amino acids that make up protein structure and determine function relationships, specificity of enzyme action, physical organization of enzymes (multienzyme complex), chemical and enzymatic kinetics, Enzyme-substrate interaction and the roles that enzymes play as fountain of life.

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**BIOT 307: Molecular Immunology**  (3 credits)
Introduction to immunology; the basic processes involved in triggering the immune system and rendering it resistant or susceptible to different infections. The study of molecular and biochemical events that influence immune responses. This course also include: innate (Non-specific) and adaptive (Specific) immunity, immunoglobulin; structure and functions, antigens, antibody formation and hypersensitivity.

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**BIOT 309: Microbial Biochemistry**  (3 credits)

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BIOT 313: Molecular Biology (4 credits)
Prerequisite: BIOL 201
History, structure and function of DNA, DNA replication in prokaryotes and eukaryotes, Structure, function and types of RNA, transcription, post transcriptional processing, translation, post translational processing in prokaryotes and eukaryotes, Control of gene regulation in prokaryotes and eukaryotes, Mutation and mutagens, DNA damage and repair, recombination and transposable elements.

Section A  Tuesday, Thursday 02:00-3:15  S-416  Dr. A. Maqbool
Lab  Friday 10:00-11:50  S-329
Section B  Monday, Wednesday Friday 08:00-08:50  S-424  Dr. N. Anwar
Lab  Friday 10:00-11:50  S-341

BIOT 314: Bionergetics and Metabolism (3 credits)
Prerequisites: BIOL 313
This course covers intermediate metabolism in biological systems. Pathways of breakdown and synthesis of biological molecules such as carbohydrates, lipids and nitrogenous compounds will be examined. Emphasis will be placed on the thermodynamics of the reactions and the regulatory mechanism of pathways.

Section A  Monday, Wednesday 10:00-10:50  S-424  Dr. A. Khan
Lab  Friday 10:00-11:50  S-321

BIOT 316: Fundamentals of Virology (4 credits)
Origin and nature of viruses, taxonomy and classification, ultra structure of viruses, virus isolation, purification and identification, models of viral replication, viral genome analysis, chemotherapy of viral infections, virus host interaction, immunity to viral infections, important viral families of human importance; family characteristics, transmission, epidemiology and pathogenicity.

Section A  Tuesday Thursday 09:30-10:45  S-410  Dr. N. Anwar
Lab  Tuesday 11:00-12:50  S-329

BIOT 407: Aquaculture Technology (4 credits)
Introduction, sources and quality of water, culture systems (open, semi-closed and closed system). Water flow and pumps, filtration and water treatment, culture methods for seaweed, molluscs, crustacean fishes and higher vertebrates, natural food and artificial feed, harvesting techniques. Policies on leasing.

Section A  Monday, Wednesday, Friday 02:00-02:50  S-416  Dr. W. George
Lab  Thursday 02:00-03:50  S-341

BIOT 408: Recombinant DNA Technology (4 credits)
It includes basic genetic engineering experiment, fundamental techniques and essential enzymes used in DNA technology. Cloning vectors; plasmids, phages, phagemids, M-13 vector, yeast artificial chromosomes, bacterial artificial chromosomes , P1 artificial chromosomes , expression vectors and cosmids. Cloning strategies with discussion of situations where these strategies would apply. Construction of DNA Libraries. DNA Restriction mapping. Studying the transcript of a cloned gene, efficient expression of cloned gene, Application of Recombinant DNA technology: Transgenic animals and plants and Gene therapy.

Section A  Monday, Wednesday, Friday 03:00-03:50  S-416  Dr. A. Maqbool
Lab  Friday 08:00 & 09:50  B-329
BIOT 411: Agricultural Biotechnology  (4 credits)
Prerequisite: BIOT 201
Introduction and origins of biotechnology, soil biotechnology; microbial interactions in agriculture, microbial control of fungal plant pathogens and importance of microorganisms for soil fertility, plant growth promoting rhizobacteria, secondary metabolites with antifungal activities, methods to produce transgenic plants biotic and abiotic resistance, genetic manipulation of fruit ripening, engineering plant protein composition for improved nutrition, genetic manipulation of crop yield by enhancement of photosynthesis, production of high value proteins in plants, vaccines from plants, biofuels.

Section A  Monday, Wednesday, Friday 12:00-12:50  S-417  Dr. K. A. Malik
Lab      Tuesday 11-00:12:50  S-331

BIOT 412: Medical Biotechnology  (4 credits)
Prerequisite: BIOT 313
Introduction to health biotechnology, cancer immunotherapy, gene therapy, stem cell biotechnology, knockout mice and gene inserts. siRNA, genetically engineered animals, infectious diseases, diagnostics and antibiotic resistance, biomaterials in regenerative medicine, vaccine technology, novel antimicrobial agents, their design and other future medical biotechnologies.

Section A  Monday, Wednesday, Friday 08:00-08:50  S-417  Dr. L. Johnson
Lab      Thursday 08:00-09:50  S-331

BTNY 207: Economic Botany  (3 credits)
The course will cover the study of plant from their economic point of view. The improvement of plants for better yield of their economic products and the strategies for the domestication and preservation of economic plants. Plants as a source of food; beverage, herbs and spices; medicinal plants; psychoactive plants; poisonous and allergy plants; fibers, dyes, tannins; hydrogel, latexes and resins, wood cork and bamboo. Cultural and molecular approaches to improvement of economic products and domestication and preservation of economic plants.

Section A  Monday, Wednesday 11:00-11:50  S-417  Dr. A. Khan
Lab      Tuesday 08:00-09:50  B-321

ENVR 301: Introduction to Environmental Sciences  (4 credits)
Prerequisite: Instructor's approval required
A survey of biological and physical environmental problems. Focusing on geological hazards. Water quality. Water supply, solid waste, introduced and endangered species, preservation of wetland ecosystem, social and political approaches to environmental management.

Section A  Monday, Wednesday, Friday 12:00-12:50  S-424  Dr. F. Iqbal
Lab      Tuesday 02:00-03:50  S-321

ENVR 402: Solid Waste Management  (3 credits)
Sources, classification, generations, onsite handling and storage, collection, transfer recycling and disposal techniques of municipal solid waste (MSW), land filling, thermal conservation, composting, concept of integrated solid waste management. Existing practices and their hazards. Economic evaluation of the systems, hospital waste management.

Section A  Monday, Wednesday 02:00-02:50  S-417  Dr. H. Saeed
Lab      Friday 10:00-11:50  S-331
ZOOL 305: Integrated Pest Management (4 credits)
Prerequisite BIOL 302
People, plants and pests, dynamics of pest populations, intensive agriculture, pest problems, concepts of IPM. cultural control, host plant resistance, parasitoids and predators, microbial control, botanical pest control, synthetic organic insecticides biotechnological approaches, bio-rational and other innovative approaches, IPM achievements, potential and challenges

Section A
Monday, Wednesday, Friday 12:00-12:50
S-445
Dr. K. Z. Rasib

Lab
Tuesday 02:00-03:50
S-341
BUSINESS MANAGEMENT

BUSN 101: Principles of Financial Accounting (3 credits)
Understanding of accounting records, entering transactions, applying accounting concepts, principles and practices; reading financial statements

Section A Tuesday, Thursday 08:00-09:15 E-025 Ms. Ayesha Naweed

BUSN 170: Principles of Management (3 credits)
Basic management concepts, tools, and techniques for improving organizational efficiency and effectiveness are introduced. Management process consisting of planning, organizing, staffing, directing, coordination, reporting and budgeting (PODSCORB) are covered.

Section A Tuesday, Thursday 09:30-10:45 E-025 Mr. M. Amin

BUSN 201: Intermediate Accounting (3 credits)
Prerequisite: BUSN 101
Develop a deeper understanding of the concepts, standards and principles underlying various accounting practices and techniques in order to develop higher level accounting competencies. It also looks at reporting requirements, group accounts, and corporate financing.

Section A Tuesday, Thursday 02:00-03:15 E-025 Mr. Bilal H. Awan

BUSN 206: Management Accounting and Control (3 credits)
Prerequisite: BUSN 101
Prepares students to use accounting information, especially costs, to make management decisions; cost accounting information; role of budgeting to facilitate rational decision-making. The course also introduces structures and systems for control.

Section A Tuesday, Thursday 12:30-13:45 E-025 Ms. Ayesha Naweed

BUSN 280: Marketing & Selling Skills (3 credits)
Prerequisite: BUSN 170
Basic tools and skills to develop an effective marketing orientation for developing and marketing products and services. Identifying problems and solutions and application of concepts is integral to the course. There is also a strong emphasis on the development of selling skills.

Section A Tuesday, Thursday 11:00-12:15 E-025 Ms. I. Nasir

BUSN 301: Financial Reporting (3 credits)
Prerequisite: BUSN 201
Prepares students to generate accounting information needed by different stakeholders, and includes leasing, stakeholder’s equity, earnings per share, and financial instruments such as government issues.

Section A Tuesday, Thursday 03:30-04:45 E-103 Mr. Bilal H. Awan

BUSN 321: Financial Management I (3 credits)
Prerequisite: BUSN 201
Introductory course focuses on tools, techniques and concepts of Finance, such as financial analysis, financing options, capital budgeting, risk analysis, and the role financial markets and intermediaries.

Section A Tuesday, Thursday 08:00-09:15 E-103 Dr. B. A. Khan
Section B Tuesday, Thursday 09:30-10:45 E-103 Dr. B. A. Khan
BUSN 360: Operations & Project Management I (3 credits)  
Prerequisite: BUSN 170  
This course focuses on evaluation and implementation of projects within organizations, as well as managing operational structures and systems to achieve organizational goals and objectives.

Section A  Tuesday, Thursday 11:00-12:15  E-103  Mr. M. Salim  
Section B  Tuesday, Thursday 12:30-1:45  E-103  Mr. M. Salim

BUSN 364: Production, Scheduling & Loading Operations (3 credits)  
Prerequisite: BUSN 360  
This course introduces critical operational processes from manufacturing. Scheduling and factory loading play a key role in meeting production targets, requiring constant supervision and monitoring.

Section A  Tuesday, Thursday 02:00-03:15  E-103  Mr. M. Salim

BUSN 380: Advanced Marketing & Sales (Marketing & Sales specialization only) (3 credits)  
Prerequisite: BUSN 280  
This course builds upon the tools, concepts and techniques of the introductory marketing course, and also introduces more advanced topics in international marketing, and marketing strategy.

Section A  Tuesday, Thursday 03:30-04:45  E-104  Ms. S. Ahmed

BUSN 401: Principles of Auditing (Accounting & Financial specialization only) (3 credits)  
Prerequisite: BUSN 301  
The fundamentals of auditing; issues of ethics; role of audit firms in conducting audits.

Section A  Tuesday, Thursday 12:30-1:45  E-105  Mr. A. Jameel

BUSN 404: Taxation (Accounting & Financial specialization only) (3 credits)  
Prerequisite: BUSN 201  
Focuses on analyzing the law pertaining to taxation and tax structure. The emphasis is on corporate taxation and related issues.

Section A  Tuesday, Thursday 11:00-12:15  E-105  Mr. A. Jameel

BUSN 460: Business Law (3 credits)  
Introductory course on laws pertaining to the functioning of business with strong emphasis on theory and practice in Pakistan. Includes, some elements of tax law and labor law.

Section A  Tuesday, Thursday 08:00-09:15  E-105  Ms. F. Khalid  
Section B  Tuesday, Thursday 09:30-10:45  E-105  Ms. F. Khalid

BUSN 461: New Product Development (3 credits)  
Prerequisite: BUSN 360  
This course covers the range of issues associated new productions: from conception to marketing, with a strong focus on satisfying customer needs. The importance of technological and management challenges is also addressed.

Section A  Tuesday, Thursday 02:00-03:15  E-105  Dr. F. A. Malik
BUSN 464: Total Quality Management (3 credits)
Prerequisite: BUSN 360
This is a critical course for operations specialists. It examines the philosophy of TQM focusing on continuous improvements for customer satisfaction. Key principles and concepts will be discussed with many real world examples.

Section A  Tuesday, Thursday 11:00-12:15  E-104  Dr. F. A. Malik

BUSN 480: Marketing Research (Marketing & Sales specialization only) (3 credits)
Prerequisite: BUSN 280
This course introduces students to qualitative and quantitative research methods used in marketing. There is a strong emphasis on the application of technical and conceptual tools to real world situations through projects and studies.

Section A  Tuesday, Thursday 12:30-01:45  E-104  Ms. I. Nasir

BUSN 484: Brand Management (Marketing & Sales specialization only) (3 credits)
Prerequisite: BUSN 280
This is a specialized course looking at creating and sustaining brands. The course uses all the tools and concepts of marketing and applies them to analyzing the evolution of brands. There is a very strong hand on focus to this course.

Section A  Tuesday, Thursday 02:00-03:15  E-104  Ms. S. Ahmed
CHEMISTRY

CHEM 100: Introduction to Chemistry  (4 credits)
Only open to students who have not taken chemistry at the F.Sc. and A-Level.
Introduction to various branches of chemistry, inorganic, organic and physical chemistry, fundamental concepts and their application in daily life including elements, compounds and mixture. Chemical reactions, stoichiometry and acid-base concepts.

Section A  Monday, Wednesday, Friday 09:00-09:50  S-216  Mrs. Shazma Azeem
Lab  Monday 10:00-11:00  S-138
Section B  Tuesday, Thursday 12:30-01:45  S-216  Mrs. Shazma Azeem
Lab  Tuesday, 11:00-12:15  S-138

CHEM 110: Introduction to Inorganic Chemistry  (4 credits)
Prerequisite: F.Sc or A-level Chemistry
Introduction to the foundations of chemistry including electronic structure of atoms, ions and molecules, quantum numbers, periodic classification, chemical bonding and theories i.e. VBT, MOT for simple homonuclear and diatomic heteronuclear molecules, VSEPR theory and shape of molecules; Chemical equilibria; acid-base chemistry and redox reactions and electrochemical series.

Section A  Tuesday, Thursday 08:00-09:15  S-215  Mrs. Shazma Azeem
Lab  Wednesday 10:00-12:00  S-138
Section B  Monday, Wednesday, Friday 10:00-10:50  S-215  Dr. M. N. Asghar
Lab  Thursday 11:00-12:15  S-138

CHEM 114: Introduction to Organic and Biochemistry  (4 credits)
Prerequisite: F.Sc or A-Level Chemistry
Chemistry of carbon, introduction to functional groups inter-conversion; study of hydrocarbons; study of hydrocarbons including additions to multiple bonds and substitution reactions of benzene; chemistry of food and its components including carbohydrates, proteins, lipids, vitamins and minerals.

Section A  Monday, Wednesday, Friday 09:00-09:50  S-216  Dr. M. Ikram Aujla
Lab  Tuesday 08:00-09:30  S-135
Section B  Monday, Wednesday, Friday 03:00-03:50  S-215  Dr. Seemal Jelani
Lab  Tuesday, 02:00-04:00  S-135

CHEM 117: Chemistry I  (4 credits)
Prerequisite: F.Sc or A-Level Chemistry or Chem 100
Thermochemistry and related concepts, quantum numbers, gases, molecules forces, liquids and some of its physical properties, solids, Bragg’s law, packing types and geometry of solids, miller indices, introduction to chemical kinetics.

Section A  Tuesday, Thursday 12:30-01:45  S-215  Dr. Athar Yasin
Lab  Monday 10:00-12:00  S-148

CHEM 218: Chemistry II  (4 credits)
Prerequisite: CHEM 117
Chemical equilibria, ionic equilibria, basic concepts in thermodynamics and the laws of thermodynamics, basic concepts in electrochemistry, electrical conductance and ionic transport, introduction to colloids.

Section A  Tuesday, Thursday 11:00-12:15  S-215  Dr. A. M. Khan
Lab  Wednesday 10:00-12:00  S-148
CHEM 221: Quantitative Analysis  
(4 credits)
Prerequisite: CHEM 110 OR CHEM 114 OR CHEM 117
Sample handling error analysis and statistical treatment of data. Solutions and standardization, measurement and calculations relevant to volumetric and gravimetric analysis, homogenous equilibria (acid base, oxidation-reduction and complexometry) heterogenous equilibria (gravimetric analysis, precipitation titration). Various chromatographic techniques.

Section A  Tuesday, Thursday 08:00-09:15  S-216  Mr. Saeed Iqbal
Lab  Wednesday 0800-10:50  S-138

CHEM 241: Organic Chemistry I  
(4 credits)
Prerequisite: CHEM 100 or 110 or 114
A review of covalent bonding and hybrid orbital, inter-conversion of functional groups leading to synthesis of various compounds; resonance and inductive effects; organic acids and bases; stereochemistry including conformational analysis, geometric isomerism, and stereo specificity and stereo selectivity.

Section A  Monday, Wednesday, Friday 11:00-11:50  S-215  Dr. Seemal Jelani
Lab  Thursday 11:00-12:15  S-135

CHEM 351: Physical Chemistry I- Thermodynamics and Electrochemistry  
(4 credits)
Prerequisite: CHEM 218
The kinetic theory of gases, distribution of molecular velocities, mean free path, critical phenomena, equations of state, advanced concepts in thermodynamics, advanced concepts in electrochemistry, phase rule and phase diagrams.

Section A  Monday, Wednesday, Friday 08:00-8:50  S-215  Dr. A M. Khan
Lab  Tuesday 12:30-01:45  S-148

CHEM 362: Analytical Chemistry  
(4 credits)
Prerequisite: CHEM 110 or 114
Introduction to analytical techniques and spectrochemical methods of analysis, ultraviolet, infrared, mass spectroscopy, nuclear magnetic resonance spectroscopy, and scope of analytical methods in every day chemistry (clinical, agriculture, pharmaceuticals etc.).

Section A  Monday, Wednesday, Friday 12:00-12:50  S-215  Dr. M. N. Asghar
Lab  Tuesday 02:00-03:15  S-138

CHEM 401: Environmental Chemistry  
(4 credits)
Prerequisite: CHEM 333
Introduction to environment, air pollution, water pollution, noise pollution, solid waste pollution and management, Ecotoxicology. Hazardous waste and its management.

Section A  Tuesday, Thursday 09:30-10:45  S-215  Dr. S. E. Benjamin
Lab  Friday 10:00- 12:00  S-138

CHEM 403: Power Sources  
(4 credits)
Prerequisite: CHEM 218
Fuel cells, batteries, photovoltaic and photo-electrochemical cells, hydrogen as energy source, its generation and storage, nuclear chemistry, hydroelectric power, solar energy.

Section A  Monday, Wednesday, Friday 08:00-08:50  S-216  Dr. Athar Yasin
Lab  Thursday 02:00-03:15  S-148
CHEM 407: Industrial Microbiology  (4 credits)
Prerequisite: CHEM 310
Classification of micro-organisms and their biochemical activities, fermentation, antibiotics and its mechanism, vitamins production by yeast, enzyme production by moulds, food microbiology, food toxins, food processing, microbiology of water and sewage, environmental microbiology and remedial measures.

Section A  Tuesday, Thursday 02:00-03:15  S-215  Dr. Seemal Jelani
Lab  Tuesday 09:30-10:45  S-135

CHEM 408: Pharmaceutical Chemistry  (4 credits)
Prerequisite: CHEM 310
Introduction, classification of drugs, pharmacologically active products, disease-causing viruses and bacteria, anti-cancer and antiviral compounds and their mode of action, rational drug design, basic concepts and illustrations, study of some important drugs and their mode of action.

Section A  Monday, Wednesday, Friday 11:00-11:50  S-216  Dr. M. I. Aujla
Lab  Thursday 08:00 & 9:15  S-135

CHEM 431: Inorganic Chemistry II  (4 credits)
Prerequisite: CHEM 331
Chemistry of transition elements, general characteristics, nomenclature, various theories and their applications, chemistry of carbonyl and nitrosyl compounds.

Section A  Monday, Wednesday, Friday 02:00-02:50  S-215  Dr. Saeed Iqbal
Lab  Thursday 02:00-04:00  S-135

CHEM 432: Coordination Chemistry  (4 credits)
Prerequisite: CHEM 110
Introduction to coordination chemistry, nomenclature, theories of coordinate bond, absorption spectra and magnetic properties; stereo chemistry, isomerism, stability, kinetics and reactions of complexes; applications of coordination compounds in various fields.

Section A  Tuesday, Thursday 09:30-10:45  S-216  Dr. C. Munir
Lab  Monday 10:00-12:00  S-135

CHEM 441: Spectroscopy of Organic Compounds  (4 credits)
Prerequisite: CHEM 241
Emphasis on use of spectral data interpretation to determine structure of organic compounds including discussion of infrared spectrophotometry, proton and carbon NMR (including two dimensional techniques, COSY, HETCOR, etc), mass spectrometry, data handling and presentation, and spectral database packages.

Section A  Monday, Wednesday, Friday 10:00-10:50  S-216  Dr. D. Ahmed
Lab  Tuesday 11:00-12:30  S-135

CHEM 443: Advanced Organic Chemistry  (4 credits)
Prerequisite: CHEM 241
Advanced reaction mechanism including reactive intermediates, pericyclic reactions, rearrangement reactions and oxidation-reduction reactions.

Section A  Monday, Wednesday, Friday 12:00-12:50  S-216  Dr. D. Ahmed
Lab  Wednesday 8:00-10:00  S-135
CHEM 463: Advanced Analytical Chemistry (4 credits)
Prerequisite: CHEM 362
Potentiometric and Conductometric methods, X-Ray diffraction analysis, Thermal methods of analysis

Section A  Monday, Wednesday, Friday 02:00-02:50  S-216  Dr. M. N. Asghar
Lab       Thursday 02:00-03:15       S-138

CHEM 471: Chemical Principles in Biology (4 credits)
Prerequisite: CHEM 310
Emphasis on the interconnections between Biology and Chemistry, and underlying chemical logic of biomolecules and metabolic pathways

Section A  Tuesday, Thursday 11:00-12:15  S-216  Dr. M. I. Aujla
Lab       Wednesday 02:00-04:00       S-135

CHEM 480: Current Topics in Chemistry (4 credits)
Prerequisite: CHEM 117, CHEM 241
It covers a more detailed description of current trends in Chemistry. Topics covered in other courses are not included in it.

Section A  Tuesday, Thursday 02:00-03:15  S-216  Dr. George Johnson
Lab       Monday 02:00-04:00       S-135
COMPUTER SCIENCE / IT

CSCS 100: Introduction to Computing (3 credits)
An introduction to the computer science discipline, including an introduction to computing environments, general application software, computing hardware, operating systems, desktop publishing, internet, software applications and tools and computer usage concepts; introducing software engineering and information technology within the broader domain of computing.

Section A  Monday, 01:00-02:50  S-320  Mr. Asher Imtaiz
Monday, 01:00-01:50
Section B  Monday, 09:00-10:50  S-218  Mr. Bilal Bajwa
Wednesday 09:00-09:50
Section C  Monday 09:00-10:50  S-320  TBD
Wednesday 09:00-09:50
Section D  Wednesday 12:00-01:50  S-319  Ms. S. Anwar
Friday 12:00-12:50
Section E  Tuesday 02:00-03:50  S-218  Mr. Shahid Mahmood
Thursday 02:00-02:50
Section F  Monday 02:00-03:50  S-218  Mr. Numan Sheikh
Wednesday 02:00-02:50
Section G  Tuesday 12:00-01:50  S-218  Ms. R. Aden
Thursday 12:00-12:50
Section H  Tuesday, Thursday 11:00-12:15  S-320  Mr. Asher Imtaiz

COMP 102: Programming I (3 credits, (2+2)
Introduces students to the basic skills of problem solving and programming. It emphasizes problem analysis, algorithm design, program development and testing. It provides a solid foundation in structured design techniques and introduces the object oriented thought process and basic tools.

Section A  Monday, Wednesday 11:00-12:50  S-218  Dr. I.H. Shah
Section B  Tuesday, Thursday 10:00-11:50  S-218  Ms. Zahra Shah

COMP 111: Programming II  (3 credits (2+2)
Prerequisite: COMP 102
Continues the topics begun in COMP 102, shifting the emphasis to object oriented principles and techniques. Classes, inheritance and class hierarchy and polymorphism are fully explored and basic data structures are introduced. Other topics include an overview of programming language principles, simple analysis of algorithms, basic searching and sorting techniques, and an introduction to software engineering issues.

Section A  Tuesday, Thursday 09:00-10:50  S-219  Mr Amjad Hussain Zahid

COMP 113: Discrete Mathematics  (3 credits)
Prerequisite: MATH 101 or A-Level or Intermediate Mathematics
Introduces the foundations of discrete mathematics as they apply to Computer Science, focusing on providing a solid theoretical foundation for further work. Further, this course aims to develop understanding and appreciation of the finite nature inherent in most Computer Science problems and structures through study of combinatorial reasoning, abstract algebra, iterative procedures, predicate calculus, tree and graph structures.

Section A  Tuesday, Thursday 12:00-01:15  S-317  Mr. Bilal Bajwa
COMP 200: Data Structures and Algorithms  (3 credits (2+2)
Prerequisite:  COMP 111, COMP 113
More sophisticated data structures, along with the algorithms required to manipulate them are introduced. Selection or construction of suitable data structures for a wide range of problems is emphasized, along with the analysis of the efficiency of chosen solutions. Standard problems such as sorting and searching are explored in detail. Students are exposed to the concepts of time and space complexity of computer programs.

Section A  Tuesday, Thursday 02:00-03:50  S-219  Mr Numan Sheikh

COMP 205: Introduction to Information Technology  (3 credits)
Prerequisite:  COMP 102, STAT 102

Section A  Tuesday, Thursday 10:00-11:15  S-316  Mr. Bilal Bajwa

COMP 206: Hardware Logic and Design  (3 credits (2+2)
Prerequisite:  Math 101 or A-Level or Intermediate Mathematics
This course is designed to introduced students to the fundamentals of Hardware system design, beginning at the digital logic level with bits, binary representations and basic binary operations. These are represented for hardware purposes using logic gates, and built up into combinational and then sequential logic circuits. Basic functional units are assembled from these circuits, and then combined to provide higher level computing functions. The basics of assembly language are introduced basic elements of some real life architectures are examined.

Section A  Monday, Wednesday, Friday 08:00-08:50  S-120  Dr.Khushro Shahookar

COMP 213: Database Systems  (3 credits (2+2)
Prerequisite:  COMP 200
This course introduces basic concepts of databases, various data models, data storage and retrieval techniques, and database design techniques. The major emphasis will be on the relational data model, the relational algebra as a basis for queries in SQL, and normalization techniques to optimize database structure.

Section A  Monday, Wednesday 10:00-11:50  S-319  Mr Amjad Hussain Zahid

COMP 220: Software Engineering I  (3 credits)
Prerequisite:  COMP 111
This course introduces the basics of Software Engineering, the terminologies involved and various principles, methods, tools and techniques used to produce quality software. Two fundamental approaches of software engineering, structural and object oriented are introduced. Based on the structural approach various software development models and phases of software development life cycle are described. Various techniques used for requirements engineering, system/software design, implementation, and testing are introduced. Fundamental issues of software measurement and project management are discussed.

Section A  Tuesday, Thursday 08:00-09:15  S-218  Ms. R. Aden
COMP 301: Operating Systems (3 credits)
Prerequisite: COMP 200, COMP 206
The objective of this course is to give students knowledge of construction and working of operating systems, and to enable students understand management and sharing of computer resources, communication and concurrency and develop effective and efficient applications and also to appreciate the problems and issues regarding multi-user, multitasking, and distributed systems.

Section A  Tuesday, Thursday 02:00-03:15  S-120  Dr. I. H. Shah

COMP 311: Computer Networks (3 credits)
Prerequisite: COMP 205, COMP 301
The course will briefly introduce the engineering concepts underlying computer communication, including analogue and digital transmission, circuit switching and packet switching. Logical network structure and operation including network layers, network models, (OSI, TCP/IP) and protocol standards will be a central theme. Emphasis is given to the understanding of modern network concepts.

Section A  Tuesday, Thursday 09:00-10:15  S-320  Dr. Khushro Shahookar

COMP 400: Senior Project (6 credits, 2 semesters, 3 credits each semester)
Prerequisite: COMP 213, COMP 220, Senior standing
The senior project requires students over the course of two semesters to research, conceive, plan and develop a real and substantial project related to computer science. It provides an opportunity to the student to realize his or her acquired professional competence in the form of a demonstrable software product or other tangible result. The student must also make an oral and written project presentation.

Section A  Monday, Wednesday 01:00-01:50  S-120  TBD

COMP 495: Special Topics in Computing (Mobile Application Development) (3 credits)
Prerequisite: COMP 200
This course will presents a very active area of study in the computing domain i.e. Mobile Computing. This course will be an introduction to the theory and practice of mobile application design and programming. Programs will mostly be written using Android or XNA platform.

Section A  Tuesday, Thursday 02:00-03:15  S-320  Mr. Asher Imtiaz

CSCS 302: Mathematics for Computing (3 credits)
Prerequisite: COMP 200
Introduction to groups, including basic group structure and finite groups. Elementary number theory, including divisibility, modular arithmetic and Fermat's Little Theorem. Formulation and solution of recurrence relations. Introduction to graphs, including trees and tree-based structures. Eulerian and Hamiltonian circuits in graphs. Planarity and graph coloring. Elements of discrete and continuous probability. Uniform, normal, Poisson and exponential distributions. Definition and properties of formal languages, and grammars. Regular expressions, finite automata, context free grammars and push-down automata. Pumping lemmas and normal forms. Turing machines.

Section A  Monday, Wednesday, Friday 09:00-09:50  S-317  Mr. N. Sheikh

CSCS 350: Introduction to Artificial Intelligence (3 credits)
Prerequisite: COMP 200
This course focuses on the set of computational tools and techniques which mimic the human decision-making process and capability.

Section A  Monday, Wednesday 02:00-03:15  S-219  Ms. Z. Shah
CSCS 440: Systems Programming (3 credits)
Prerequisite: COMP 301, CSCS 323
The course will demonstrate mastery of the internal operation of system software including assemblers, loaders, macro-processors, interpreters, inter-process communication.

Section A Tuesday, Thursday 12:00-01:15 S-219 TBD

CSIT 312: System and Network Administration (3 credits)
Prerequisite: COMP 205, COMP 311
A survey of the tools and techniques used in the administration and management of computing systems and networks. File systems and directory permission structures. User account administration, client administration, remote access and remote administration. Run levels and services. Networks services configuration. Defining security, firewalling defending against malicious users.

Section A Tuesday, Thursday 11:00-12:15 S-120 Mr. Amjad Hussain Zahid

CSIT 400: Human Computer Interaction (3 credits)
Prerequisite: COMP 205, COMP 220
Identical with CSSE 405. Students may earn credit in only one of the two courses
Uses insights from psychology and cognitive science to explore the differences in information processing by humans and machines. Focuses on the design of human-computer interfaces and systems involving both human and computer components.

Section A Monday, Wednesday, Friday 02:00-02:50 S-316 Mr. Shahid Mahmood

CSSE 301: Software Engineering II (3 credits)
Prerequisite: COMP 220
The course aims to provide the basis of the object oriented approach to software engineering, and basic concepts of agile methodologies, risk management, configuration management, re-engineering and quality assurance. The focus of this course is on UML based development of artifacts which include domain models, system sequence diagrams, contracts, real use cases, interaction diagrams supported by GRASP patterns, and class diagrams.

Section A Tuesday, Thursday 10:00-11:15 S-317 Mr. Shahid Mahmood

CSSE 350: Object Oriented Analysis and Design (3 credits)
Prerequisite: CSSE 301
Exploit the rich object-oriented modeling provided by Unified Modeling Language (UML). Adapt to changing requirements with iterative techniques and component-based design. Design solutions optimized for modern object-oriented languages and platforms. Apply proven design patterns, design heuristics, anti-patterns and refactoring techniques to refine analysis and design models. Construct unit and system tests to verify your implemented designs.

Section A Wednesday, Friday 09:00-10:15 S-319 Mr. S. Anwar

CSSE 400: Software Project Management (3 credits)
Prerequisite: CSSE 351
An opportunity to develop the ability to plan and manage software development projects successfully, maximizing the return from each stage

Section A Wednesday, Friday 11:00-12:15 S-316 Dr. Khushro Shahookar
ECONOMICS

**ECON 100: Basic Economics** (3 credits)
This is a basic course of Economics for all disciplines, which would educate students about micro as well as macro economics. The course shall help students to increase understanding about basic concepts of Economics such as demand supply, allocation of resources, opportunity cost, national income, inflation and unemployment etc.

Section A  Monday, Wednesday, Friday 02:00-02:50 E-214 Dr. B. Aziz
Section B  Monday, Wednesday, Friday 02:00-02:50 E-222 Ms. Uzma Hanif
Section C  Tuesday, Thursday 09:30-10:45 E-231 Mr. S. Ali Abbas
Section D  Tuesday, Thursday 12:30-01:45 E-231 Ms. Saira Majeed
Section E  Monday, Wednesday, Friday 09:00-09:50 E-323 Ms. Saira Majeed

**ECON 101: Microeconomics I** (3 credits)
Microeconomics I is a core course for majoring in Economics. It introduces the students to the basic method and subject matter of microeconomics. The course covers consumer behavior theory, producer theory and output and price strategies under perfect and imperfect competition market structure.

Note: An important objective of the course is to provide a base for other courses to be taken for major in Economics.

Section A  Monday, Wednesday, Friday 11:00-11:50 E-214 Dr. Shabib Haider Syed
Section B  Tuesday, Thursday 11:00-12:15 E-214 Ms. Saira Majeed
Section C  Monday, Wednesday, Friday 11:00-11:50 E-222 Ms. Uzma Hanif

**ECON 102: Macroeconomics I** (3 credits)
The primary goal of this course is to introduce key macroeconomics concepts. This course emphasizes national income accounting and determination of national income through Keynesian cross. Consumption, saving and investment theories; money supply and demand QTM, inflation and unemployment. The short period fluctuations in an economy and stabilization policies.

Note: An important objective of the course is to provide a base for other courses to be taken for major in Economics.

Section A  Monday, Wednesday, Friday 12:00-12:50 E-221 Dr. M. Akbar
Section B  Tuesday, Thursday 08:00-09:15 E-214 Dr. Rabia Aslam
Section C  Monday, Wednesday, Friday 10:00-10:50 E-214 Dr. M. A. Chaudhry
Section D  Monday, Wednesday, Friday 08:00-08:50 E-231 Mr. S. Ali Abbas
Section E  Monday, Wednesday, Friday 10:00-10:50 E-323 Mr. S. Ali Abbas

**ECON 103: Mathematics for Economists** (3 credits)
The nature of mathematical economics; Real number system; Set theory and economics; static analysis, Linear models and matrix algebra. Tools of algebra and calculus; Application of calculus in economics; Tools of comparative static, optimization of one and multivariable functions and its economic application. Optimization with constraints.

Section A  Monday, Wednesday, Friday 09:00-09:50 E-222 Mr. Ghulam Shabbir
Section B  Monday, Wednesday, Friday 10:00-10:50 E-231 Ms. Azma Batool
Section C  Monday, Wednesday, Friday 03:00-03:50 E-222 Ms. Azma Batool
Section D  Monday, Wednesday, Friday 11:00-11:50 E-323 Mr. Ghulam Shabbir
ECON 201: Microeconomics II  
Prerequisite: ECON 101, 103  
(3 credits)  
A continuation of microeconomics I using mathematical and empirical models to analyze consumer theory, producer theory, from behavior under perfect and imperfect market structure. Input markets with both perfect and imperfect competition. Game Theory.

Section A  Monday, Wednesday, Friday 08:00-08:50  E-221  Dr. Babar Aziz
Section B  Monday, Wednesday, Friday 10:00-10:50  E-221  Dr. Babar Aziz
Section C  Monday, Wednesday, Friday 12:00-12:50  E-323  Ms. Azma Batool

ECON 202: Macroeconomics II  
Prerequisite: ECON 102, 103  
(3 credits)  
This course emphasizes the classical and Keynesian economic theory policy. Derivation of AD and AS models and their implication for stabilization policies, short term and long term inflation-unemployment relationship; Consumption and investment theories; economic growth, growth accounting and convergence.

Section A  Tuesday, Thursday 12:30-01:45  E-221  Dr. Muhammad Aslam
Section B  Monday, Wednesday, Friday 11:00-11:50  E-221  Mr. S. Ali Abbas
Section C  Monday, Wednesday, Friday 03:00-03:50  E-323  Dr. Rabia Aslam

ECON 203: Statistics for Economists  
(3 credits)  
Descriptive statistics; measurement of central tendency and dispersion, random variable and discrete and continuous probability distributions, sampling and sampling distribution, estimation and confidence interval of small and large sample, maximum likelihood, hypothesis testing using one and two sample, analysis of variance.

Section A  Monday, Wednesday, Friday 10:00-10:50  E-222  Dr. Rizwan Ahmed
Section B  Tuesday, Thursday 08:00-09:15  E-222  Dr. Rizwan Ahmed

ECON 206: Banking and Finance  
(3 credits)  
Overview of financial system; Role of financial institutions (banking and non-banking). Role of central bank in monitoring and regulating the financial market. Determination of interest rate and yield curve. Financial assets and rates of return. Banking operations and credit creation. Major Banking instruments.

Section A  Tuesday, Thursday 08:00-09:15  E-221  Ms. Zeresh Mall
Section B  Tuesday, Thursday 09:30-10:45  E-222  Ms. Zeresh Mall
Section C  Monday, Wednesday, Friday 12:00-12:50  E-231  Ms. Zeresh Mall

ECON 300: Fundamentals of Econometrics  
Prerequisite: ECON 201, 202& 203  
(3 credits)  
Nature and methodology of econometrics; Regression analysis and ordinary least squares, Dummy variable regression models, relaxing the assumption of classical model, multicollinearity, Heteroscedasticity and Autocorrelation, WLS and GLS, model specification and diagnostic testing.

Section A  Monday, Wednesday, Friday 09:00-09:50  E-221  Dr. Tanvir Ahmed
Section B  Monday, Wednesday, Friday 03:00-03:50  E-221  Dr. M. Akbar

ECON 302: Research Methods and Computer Applications  
Prerequisite: ECON 300  
(3 credits)  
Methods and methodologies of Research used in Economics; techniques of investigation, data collection methods, Research design, Sampling Report writing and use of econometric softwares.

Section A  Monday, Wednesday, Friday 02:00-02:50  E-221  Mr. Abdul Jalil Khan
Section B  Tuesday, Thursday 09:30-10:45  E-214  Mr. Abdul Jalil Khan
ECON 303: Environmental Economics  
(3 credits)  
Prerequisite: ECON 201  
Efficiency and Welfare, Property rights, Externalities and Environmental problems their Solutions and Benefit-cost Analysis of Pollution Control. The command and control policy framework with reference to Pakistan; Efficient Policy Responses; Cost-effective Policies; Development, Poverty and Environment; Sustainable Development.

Section A  
Tuesday, Thursday 09:00-10:45  
E-221  
Ms. Uzma Hanif

Section B  
Tuesday, Thursday 12:30-01:45  
E-222  
Ms. Uzma Hanif

Section C  
Monday, Wednesday, Friday 12:00-12:50  
E-222  
Dr. Tanvir Ahmed

ECON 307: International Trade Theory and Policy  
(3 credits)  
Prerequisite: ECON 201, 202  
Theories of absolute and comparative advantage; Heckshoer-Ohlin and Rybsnsky theorem Factor endowments; Factor intensities, Factor prices and distribution; Tariffs, Quotas and dumping imperfect competition and Returns to scale. Commercial policies their objectives and impacts, trade agreements and trade control.

Section A  
Tuesday, Thursday 11:00-12:15  
E-231  
Mr. Ghulam Shabbir

Section B  
Tuesday, Thursday 08:15-09:15  
E-231  
Mr. Ghulam Shabbir

ECON 309: Econometric Methods  
(3 credits)  
Prerequisite: ECON 300  
Nonlinear regression models, Approaches to estimating nonlinear models, Qualitative esponse regression models; LPM, Logit, Probit. Panel data regression models, fixed effect approach and random effect approach. Simultaneous-Equation models; the simultaneous equation bias, Identification problem Approaches to estimation: ILS, 2SLAS.

Section A  
Monday, Wednesday, Friday 08:00-08:50  
E-214  
Mr. Zahid. Iqbal

Section B  
Tuesday, Thursday 11:00-12:15  
E-222  
Dr. M. Akbar

ECON 311: Development and Growth Economics  
(3 credits)  
Prerequisite: ECON 202  
Economics, Institutions and development; Diverse structures and common characteristics; Measurement of economic development models: classic and modern, Economics development and issues of poverty, inequality, population, urbanization education and health. Agriculture and rural development, Growth models of Harrod-Domer, Solow-Swan Kaldor and Joan Robinson. New growth theories.

Section A  
Monday, Wednesday, Friday 11:00-11:50  
E-231  
Dr. Rabia Aslam

Section B  
Tuesday, Thursday 11:00-12:15  
E-221  
Dr. Rabia Aslam

ECON 313: Monetary Theory  
(3 Credits)  
Prerequisite: ECON 202  
Nature of monetary economics, money supply process and definition of monetary aggregates. Theories of money demands, microeconomics determinants of demand for money, testing the demand for money, the weakness of the links between the theory of the demand for money and the testing of it. Monetary transmission mechanism. Price surprise central banking and the Money supply.

Section A  
Monday, Wednesday, Friday 12:00-12:50  
E-214  
Mr. Zahid Iqbal

Section B  
Monday, Wednesday, Friday 09:00-09:50  
E-214  
Mr. Zahid Iqbal

Section C  
Tuesday, Thursday 08:00-09:15  
E-323  
Mr. Zahid Iqbal
ECON 402: Project Planning and Appraisal  
(3 credits)
Prerequisite: ECON 201

Concepts used in project preparation, feasibility and evaluation such as discounting, field surveys, measurements, data analysis, and report writing. Sources of finance for development projects.

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<td>Monday, Wednesday, Friday</td>
<td>09:00-09:50</td>
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<td>Dr. Rizwan Ahmed</td>
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<td>Mr. Abdul Jalil Khan</td>
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EDUCATION

EDUC 110: Foundations of Education (3 credits)
Perspectives on economic, cultural, political, ideological, philosophical, aesthetic and psychological foundations of education. The history of education in Pakistan will also be covered.

Section A      Tuesday, Thursday 08:00-09:15      E-331      Dr. J. Shafi
Section B      Tuesday, Thursday 11:00-12:15      N-217      Dr. C.J. Dubash

EDUC 120: Educational Psychology (3 credits)
Principles of psychology as applied to the educational process; characteristics of the individual learner, the teacher, the classroom, methods and other relevant factors in the learning process; various stages of growth and development; brief introduction to psychological measurements and creativity in children.

Section A      Tuesday, Thursday 09:30-10:45      E-331      Dr. J. Shafi

EDUC 260: Teaching Exceptional Children (3 credits)
Prerequisite: EDUC 110, 120
Introduction to the teaching of exceptional children either exceptionally intelligent or with difficulties; strategies for use in a regular classroom setting; methods of identifying disabilities and giftedness; ways of finding available resources to facilitate the learning process.

Section A      Tuesday, Thursday 02:00-03:15      N-217      Ms. C. Burke

EDUC 320: Introduction to Research Methods in Education (3 credits)
Prerequisite: EDUC 110, STAT 101
Concepts and methods in research as applied to education; quantitative and qualitative research; criteria and procedures for selecting a problem; research methodologies with application for real life.

Section A      Tuesday, Thursday 12:30-01:45      N-217      Dr. C. J. Dubash

EDUC 350: Classroom Management (3 credits)
Prerequisite: EDUC 110
An understanding of the dual roles of the teacher as an instructor and manager. Strategies from various approaches in order to provide a rich repertoire of management choices; proactive, responsive and supportive classroom management strategies.

Section A      Tuesday, Thursday 11:00-12:15      E-331      Dr. J. Shafi
English

ENGL 101: Writing and Grammar  (3 credits)
Use of grammar structures in meaningful spoken and written communication; develop writing skills in organizing ideas, creating topic sentence, organizing paragraphs, using examples and details to support main ideas; making transitions; editing, revising and proof reading.

Section B    Monday, Wednesday, Friday 9:00-9:50  E-202    Ms. A. Waseem
Section C    Monday, Wednesday, Friday 10:00-10:50  E-202    Ms. A. Waseem
Section D    Monday, Wednesday, Friday 11:00-11:50  E-202    Ms. F. Zaheer
Section E    Monday, Wednesday, Friday 12:00-12:50  E-202    Mr. W. Azeem
Section I    Tuesday, Thursday 9:30-10:45  E-202    Ms. A. Waseem
Section J    Tuesday, Thursday 11:00-12:15  E-202    Dr. K. Ud Din
Section K    Tuesday, Thursday 12:30-01:45  E-202    Dr. Robert Reid

ENGL 103: Advanced Writing Skills  (3 credits)
Helps students perfect their skills in writing well-developed, coherent paragraphs and short essays with special attention to editing grammar. Proficiency in the skill of academic writing. Complex sentence structure and the relationship among sentence in extended texts. Common rhetorical forms will be practiced: narration, process description, classification, course-effect, and comparison-contrast.

Section A    Monday, Wednesday, Friday 8:00-8:50  E-203    Ms. F. Zaheer
Section B    Monday, Wednesday, Friday 9:00-9:50  E-203    Dr. Robert Reid
Section C    Monday, Wednesday, Friday 10:00-10:50  E-203    Dr. K. Ud Din
Section D    Monday, Wednesday, Friday 03:00-3:50  E-204    Dr. Ira Hassan
Section E    Monday, Wednesday, Friday 02:00-2:50  E-203    Ms. J. Austin
Section F    Monday, Wednesday, Friday 03:00-3:50  E-203    Ms. J. Austin
Section G    Tuesday, Thursday 8:00-09:15  E-203    Dr. N. Langah
Section H    Tuesday, Thursday 9:30-10:45  E-203    Dr. N. Langah
Section I    Tuesday, Thursday 11:00-12:15  E-203    Dr. Ira Hassan
Section J    Tuesday, Thursday 12:30-01:45  E-203    Mr. W. Azeem
Section K    Tuesday, Thursday 02:00-03:15  E-203    Mr. L. Masih

ENGL 201: Introduction to English Literature  (3 credits)
Basic questions on the nature and function of literature and how to interpret, discuss and evaluate literary texts through a diverse and rich variety of selections from English and American literature.
Section A    Monday, Wednesday, Friday 08:00-08:50  E-204    Dr. K. Ud Din

ENGL 207: Media and Literature  (3 Credits)
The focus of the course is to highlight the role of Media as a means of understanding literature. It will also explain the importance of language and literature with reference to specific social and cultural issues regarding the role of Media.
Section A    Monday, Wednesday, Friday 09:00-09:50  E-204    Dr. N. Langah

ENGL 210: Introduction to Classical Drama  (3 Credits)
This course will discuss the Greek and The Roman plays in their historical and cultural context.
Section A    Monday, Wednesday, Friday 02:00-02:50  E-204    Dr. Ira Hassan
ENGL 216: Language and Literature (3 Credits)
Literature is read and discussed from representation to image. The student reads selections from world literature learning to associate the images created by the writer or translator with the English language structure, vocabulary and grammar.
Section A Monday, Wednesday, Friday 11:00-11:50 E-204 Dr. Robert Reid

ENGL 301: The 19th Century English Novel (3 credits)
This is a representative course of 19th Century novel and will focus on the different characteristics of Victorian culture, literature and history and will also explore ambition, enlightenment, social, moral and economic issues of 19th century.
Section A Monday, Wednesday, Friday 12:00-12:50 E-204 Dr. Robert Raid

ENGL 303: Introduction to Linguistics (3 credits)
Theoretical concepts and empirical findings of modern linguistics on a non-technical level. Highlights the connection between linguistics and other disciplines and looks at how the study of language opens up new dimensions in the understanding of related disciplines.
Section A Monday, Wednesday, Friday 10:00-10:50 E-204 Dr. N. Langah

ENGL 309 Modern Poetry (3 credits)
This course attempts to analyze the purpose and scope of the 20th century modern poetry. It will discuss the global political, social and cultural influences on modern poetry and explain how this poetry deals with themes and techniques that highlight a unique poetic experience.
Section A Monday, Wednesday, Friday 11:00-11:50 E-203 Dr. K. Ud Din

ENGL 401: Modern Drama (3 credits)
Pre-Requisite: ENGL 210 or ENGL 307
A critical examination of major writers of modern drama such as Brecht, Beckett, Miller and Pinter with particular reference to themes such as absurdism, naturalism, expressionism and “political” drama.
Section A Tuesday, Thursday 08:00- 09:15 E-204 Dr. Ira Hassan

ENGL 403: Contemporary Literary Criticism: (3 credits)
This course specifically focuses on the latest trends in literary criticism and theory. With their background in classical theoretical concepts, the students will learn how the contemporary literary criticism influences and interprets with diverse literary genres.
Section A Tuesday, Thursday 11:00- 12:15 E-204 Dr. W. Anwar

ENGL 407: Pakistani and Indian Literature in English (3 credits)
This course offers a study of the sub continental Indo-Pak writers writing in English. In its own way the course details issues regarding identity and nationalism in relation to the colonial and post-colonial emerging conditions.
Section A Tuesday, Thursday 12:30- 01:45 E-204 Dr. W. Anwar
GEOGRAPHY

GEOG 101: Fundamentals of Geography (3 credits)
Builds perspective about geography as a discipline; familiarizes its thematic domains and fundamental concepts.

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GEOG 133: Geographical Profile of Pakistan (3 credits)
Major features of the physical environment, resources, culture, communications and trade of Pakistan. Analyses of the major problems confronted by Pakistan relating to cross cultural relationships, socio-economic viability, environmental conservation, resource sustainability and development.

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<td>Mr. S. Ahmad</td>
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GEOG 210: Earth's Physical Realms (3 credits)
The spatial and functional dynamics of major physical phenomena relating to the planet Earth, its evolution, interior state, atmosphere, lithosphere, hydrosphere and eco-sphere. Explores physical phenomena and related cycles, and man-environment interactions.

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GEOG 220: Human Domains of Geography (3 credits)
Concepts relating to the spatial and systematic organization of economic, cultural, political, demographic and occupancy milieu, arising out of human use of the earth's environment. Importance of human attitudes and values in resource use and shaping of the patterns.

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GEOG 221: Geography of Tourism (3 credits)
Physical and cultural factors affecting the location & relative importance of recreational areas and tourist attractions. Spatial analysis of tourist flow, modes of transportation, effects on regional economics, and impacts on environments.

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GEOG 270: Maps and their Interpretation (3 credits)
Builds up capability to understand & interpret different types of maps and their applications.

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GEOG 274: Fundamentals of Cartography and Field Surveying

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<td>Ms. Z. Jamil</td>
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GEOG 274: Fundamentals of Cartography and Field Surveying

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GEOG 311: Principles of Atmospheric and Hydrospheric Dynamics (3 credits)
Prerequisites: GEOG 101 or 210
The course examines elements and forces generating weather phenomena, their dynamic and impact; climatic system and their classification. Features and dynamics of marine masses are also discussed and a generalized appraisal of the water resources on land is reviewed.

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GEOG 325: Political Geography (3 credits)
The course emphasizes on the comparative study of global political regions and related systems. Varied approaches are explored such as power analysis, genetic analysis, functional analysis, hemetic analysis and ethnic analysis of political units.

Section A  Monday, Wednesday, Friday 02:00-02:50  E-103  Mr. S. Ahmad

GEOG 417: Global Water Profile and Management Issues (3 credits)
An in-depth analysis of the global and regional water profiles with special reference to south and related management issues.

Section A  Tuesday, Thursday 09:30-10:45  A-3  Mr. S. Ahmad

GEOG 491: Directed Project (3 credits)
Prerequisite: Knowledge of computer software applications is preferred.
A session on orientation / hands on training in techniques of project planning, designing, operational management, report preparation and presentation after junior year followed by independent / participated research in field, laboratory, or library under supervision of a member of geography faculty (appointed by the chair) and preparation, presentation and open defense of research report / thesis.

Section A  Tuesday, Thursday 11:00-12:15  A-2  TBD
HEALTH AND PHYSICAL EDUCATION

**HPED 101: Cricket (Only for boys)**  
(1 credit)  
The course of Cricket is both an art and science. It involves techniques of batting, bowling, fielding, and running. All these activities have often to be performed at speed agility and endurance. These individual skills are very important but it should not be forgotten that it is team game and the players have to work together in offence or defense. The course of Cricket contains physical challenges.

- **Section A**  
  Tuesday, Thursday 11:00-11:50  
  Lucas Center  
  Mr. S. Nasir

**HPED 102: Football (for girls)**  
(1 credit)  
Day by day females are also taking interest to learn & play football. In its skill techniques involve dribbling, running, passing, kicking, tackling, heading and controlling the ball. Students will learn defense & offense with the co-ordination of physical fitness components.

- **Section A**  
  Monday, Wednesday 1:00-2:00  
  E-205  
  Mr. U. Yousaf

**HPED 103: Hockey (for boys)**  
(1 credit)  
This course of Hockey is knowledge about the basic rules and regulations. It involves the technique of passing, dribbling, dodging, and pushing with agility, speed and endurance. The course aims to equip them with the necessary knowledge of the game.

- **Section A**  
  Tuesday, Thursday 10:00-10:50  
  Lucas Center  
  Mr. Babar Kamil

**HPED 105: Volleyball (for girls)**  
(1 credit)  
Volleyball is very good and interesting team game for females. The students will learn passing, blocking and smashing the ball with the implementation of agility, strength, endurance, speed and flexibility.

- **Section A**  
  Tuesday, Thursday 12:00-1:00  
  E-205  
  Mr. U. Yousaf
MASS COMMUNICATION

MCOM 100: Fundamentals of Speech (3 credits)
Study of the basic principles and practices of good vocal production and oral communication. Examines texts, verse and prose in terms of vocal delivery. Explores the basic components of communication through analysis and practice in a variety of oral presentations. Focus is on English speaking skills.

Section A  Monday, Wednesday, Friday 09:00-09:50  E-213  Ms. Naiila Sahar
Section B  Monday, Wednesday, Friday 10:00-10:50  E-213  Ms. Quratul Ain
Section C  Tuesday, Thursday 09:30-10:45  E-213  Ms. Naiila Sahar
Section D  Tuesday, Thursday 11:00-12:15  E-213  Ms. Naiila Sahar
Section F  Tuesday, Thursday 11:00-12:15  E-228  Ms. Quratul Ain
Section H  Tuesday, Thursday 12:30-1:45  E-213  Ms. A. Fareed
Section J  Tuesday, Thursday 09:30-10:45  E-229  Ms. Quratul Ain
Section K  Monday, Wednesday, Friday 08:00-08:50  E-213  Ms. Quratul Ain
Section L  Monday, Wednesday, Friday 02:00-2:50  E-213  Ms. R. Hassan
Section M  Monday, Wednesday, Friday 11:00-11:50  E-229  Ms. A. Fareed
Section N  Tuesday, Thursday 12:30-01:45  E-229  Ms. R. Hassan
Section Q  Monday, Wednesday, Friday 12:00-12:50  E-213  Ms. A. Fareed
Section R  Tuesday, Thursday 12:30-01:45  E-228  Ms. R. Hassan

MCOM 101: Introduction to Print Journalism (3 credits)
Brief history of printing and publishing, types of print journalism, introduction to newspaper organization, reporting and sub-editing. Contents of newspaper. Definition of news, structure, values and sources. Journalism in Pakistan.

Section A  Monday, Wednesday, Friday 08:00-08:50  E-230  Dr. S. Abbas
Section B  Monday, Wednesday, Friday 10:00-10:50  E-229  Mr. J. Ghauri
Section C  Monday, Wednesday, Friday 10:00-10:50  E-230  Ms. F. Jabeen
Section D  Monday, Wednesday, Friday 11:00-11:50  E-230  Dr. Hanan

MCOM 102: Introduction to Electronic Media (3 credits)
Origin and development of radio and television in Pakistan; television and radio as effective medium of communication introduction to private radio and television channels; role and effects of electronic media on society.

Section A  Monday, Wednesday, Friday 12:00-12:50  E-230  Mr. J. Ghauri
Section B  Monday, Wednesday, Friday 02:00-2:50  E-230  Mr. M. Ali
Section C  Monday, Wednesday, Friday 03:00-03:50  E-230  Mr. M. Ali
Section D  Tuesday, Thursday 14:00-15:15  E-230  Dr R. Khan

MCOM 103: Introduction to PR & Advertising (3 credits)
Advertising and its role in the society; consumer culture; advertising and mass media marketing; public relations; selling and sales management. Process and tools of PR.

Section A  Tuesday, Thursday 09:30-10:45  E-230  Ms. A. Muzamil
Section B  Tuesday, Thursday 11:00-12:15  E-230  Mr. F Mahmood
Section C  Tuesday, Thursday 08:00-9:15  E-230  Ms. A. Muzamil
Section D  Tuesday, Thursday 12:30-1:45  E-230  Mr. A. Soomro
MCOM 202: Sub-Editing  
Prerequisite: MCOM 101, 102  
(3 credits)
Introduction, importance and process of the sub-editing; functions and qualifications of a sub-editor; source of news; techniques, types and new trends in headlines; technique, types, and new trends in make up; monitoring importance and techniques of radio and television; importance and techniques of picture editing and caption writing for pictorial display; journalistic terminologies.

Section A  
Monday, Wednesday, Friday 9:00-9:50  
E-230  
Mr. J. Ghauri

MCOM 203: Media and Peace Building  
Prerequisite: MCOM 101, 102  
(3 credits)
Introduction to peace building, introduction to interactive communication approach, tools of Mass Communication, understanding conflict, tools for conflict analysis, introduction to theater, role of music in peace building process, art for peace, vision and framework for peace and justice. The universal declaration of human rights, universal Islamic declaration of human rights, latest human rights reports (topics related to woman, minorities, democratic governance).

Section A  
Tuesday, Thursday 08:00-9:15  
E-228  
Ms. F. Jabeen

Section B  
Monday, Wednesday, Friday 08:00-8:50  
E-229  
Mr. S. Abbas

MCOM 302: Opinion Writing  
Prerequisite: MCOM 101, 102  
(3 credits)
Contents and importance of editorial page; definitions and functions of editorial writing; qualification of editorial writers; topic selection, sources of material, types and structure of editorials; importance and selection of letters to the editor; definitions, structure types and importance of column and feature.

Section A  
Monday, Wednesday, Friday 02:00-2:50  
E-229  
Mr. J. Ghauri

MCOM 303: Public Relations  
Prerequisite: MCOM 103  
(3 credits)
Definition and purpose; tools of public relations in Pakistan; duties of a PR organization; definition and basic ingredients of a press release, press note, handout, press communiqué and press conferences; structure and functions of DGPR.

Section A  
Monday, Wednesday, Friday 02:00-2:50  
E-228  
Dr. R. Khan

Section B  
Monday, Wednesday, Friday 03:00-3:50  
E-228  
Dr. R. Khan

MCOM 304: Principles of Advertising  
Prerequisite: MCOM 103  
(3 credits)
Definition, scope, function, essentials and economic aspects of advertising. Advertising in Pakistan; advertising as a tool of marketing; advertising research; introduction to prominent advertising agencies of the world; advertising campaigns and their evaluation.

Section A  
Tuesday, Thursday 03:30-04:45  
E-228  
Mr. F. Mahmood

Section B  
Tuesday, Thursday 03:30-04:45  
E-229  
Dr. R. Khan

MCOM 306: Research Methodology  
Prerequisite: MCOM 103  
(3 credits)
This course is specifically designed to provide the students an understanding of research methodology; concept of research; kinds of research; elements of research design; technique to prepare a research proposal.

Section A  
Monday, Wednesday, Friday 08:00-8:50  
E-228  
Dr. Hanan

Section B  
Monday, Wednesday, Friday 09:00-9:50  
E-228  
Dr. Hanan
MCOM 307: Photo Journalism  
**Prerequisite:** MCOM 103  
(3 Credits)

Photojournalism history and evolution, photojournalism in print Media, Prerequisites of photojournalism, Dynamics of photojournalism, Importance of photojournalism, photojournalism and cyber media, Ethics of photojournalism.

Section A  
Tuesday, Thursday 02:00-03:15  
E-229  
Mr. F Mahmood

Section B  
Monday, Wednesday, Friday 03:00-03:50  
E-213  
Mr. F Mahmood

MCOM 402: Television: A Theoretical Introduction  
**Prerequisite:** MCOM 102  
(3 credits)

Set-up and working of news; duties of a news producer; sources of TV news; TV news film; basics of news film shooting and editing; drafting of TV news; compilation of bulletins; preparation of network bulletins; students will submit 5 news reports and two interviews of ten minutes duration each on CDs / DVDs.

Section A  
Monday, Wednesday, Friday 11:00-11:50  
E-228  
Dr. S. Abbas

Section B  
Tuesday, Thursday 02:00-03:15  
E-213  
Mr. M. Ali

MCOM 404: Community Journalism  
**Prerequisite:** MCOM 201  
(3 credits)

Status and issues regarding women, children, minorities and human rights in the local community with special emphasis on Pakistan; media coverage; NGOs and mass awareness campaigns in Pakistan; role of mass media in reporting human rights events.

Section A  
Monday, Wednesday, Friday 12:00-12:50  
E-229  
Ms. A. Muzamil

MCOM 405: Mass Communication Studies  
**Prerequisite:** MCOM 101, 102  
(3 credits)

Definitions, types, elements and model of communication and mass communication features and function of mass communication, media literacy, public opinion and propaganda, two-step flow of communication; barriers in communication; essentials of effective communication; gate-keeping and information control; the role of the opinion leader, current media trends, mass media and culture, mass media and society; mass media effects debates.

Section A  
Monday, Wednesday, Friday 10:00-10:50  
E-228  
Mr. A. Soomro

Section B  
Monday, Wednesday, Friday 12:00-12:50  
E-228  
Mr. A. Soomro

MCOM 409: Theories of Mass Communication  
**Prerequisite:** MCOM 405  
(3 credits)

This course will discuss theories and models of Mass Communication.

Section A  
Monday, Wednesday, Friday 09:00-09:50  
E-229  
Ms. F. Jabeen
MATHEMATICS

MATH 100: Quantitative Skills  
Basic Algebra, percentage, profit, Loss, commission, Ratio, Proportion, Zakat deduction, Unitary Methods, Time, Velocity, Distance, Area and other real life applications of Mathematics. Mean, Median, Mode, Data Interpretation, Introduction to Probability.

Section A  Monday, Wednesday, Friday 02:00-02:50  S-412  Dr. M. Hussain
Section B  Monday, Wednesday, Friday 03:00-03:50  S-412  Dr. M. Hussain
Section C  Monday, Wednesday, Friday 10:00-10:50  S-413  Mr. K. Azhar
Section D  Monday, Wednesday, Friday 09:00-09:50  S-413  Mr. K. Azhar
Section E  Monday, Wednesday, Friday 03:00-03:50  S-413  Dr. U. Hayat
Section F  Tuesday, Thursday 09:30-10:45  S-412  Mr. K. Azhar
Section G  Tuesday, Thursday 08:00-09:15  S-412  Dr. Z. R. Bhatti

MATH 101: Pre-Calculus & Trigonometry  
Fundamentals. Equations and Inequalities, Functions and Graphs, Polynomial, rational, Exponential and logarithmic Functions, trigonometric functions and their Graphs, trigonometric Identities, solution of right and oblique triangles. Matrices and solution of simultaneous equations using Matrices.

Section A  Monday, Wednesday, Friday 08:00-08:50  S-413  Mr. M. Asghar
Section B  Monday, Wednesday, Friday 09:00-09:50  S-412  Mr. M. Asghar
Section C  Tuesday, Thursday 08:00-09:15  S-413  Mr. M. Asghar
Section D  Monday, Wednesday, Friday 11:00-11:50  S-412  Dr. S. Malik

MATH 102: Calculus 1  
Prerequisite: MATH 101 or A-Level Mathematics or Intermediate Mathematics
Functions, Graphs of functions, Translation, stretching and compressing graphs, Lines, Limits, Continuity, Differentiability and Integration with application, introduction to definite integral, introduction to parabola, hyperbola and ellipse.

Section A  Monday, Wednesday, Friday 12:00-12:50  S-412  Mr. K. Azhar

MATH 103: Introductory Linear Algebra  
Prerequisite: MATH 101 or A-Level Mathematics or Intermediate Mathematics
Matrices, Determinants, System of Linear Equations, Homogeneous and Non-Homogeneous Systems, vector Spaces, Subspaces, Linear Independence, Basis and Dimensions, Linear Transformations.

Section A  Tuesday, Thursday 11:00-12:15  S-413  Dr. A. Qureshi

MATH 201: Calculus II  
Prerequisite MATH 102
Maxima and minima of functions of one variable, The definite integral evaluation techniques, Theorems related to definite integrals numerical integration, improper integrals, area and arc length in polar coordinates, Volume & surface of revolution, infinite series; power series; Taylor’s theorem, Conic section, modeling with first O.D.E.

Section A  Monday, Wednesday, Friday 08:00-08:50  S-412  Dr. Z. R. Bhatti

MATH 202: Ordinary Differential Equations  
Prerequisite MATH 102

Section A  Monday, Wednesday, Friday 11:00-11:50  S-413  Dr. A. Qureshi
MATH 203: Vector Analysis  
**Prerequisite:** MATH 102  
Scalars and Vectors, Product of two Vectors (scalar and vector) with applications, Product of more than two vectors, application of vector differentiation to differential Geometry and Mechanics, Divergence and Curl of a Vector, Gradient of a Scalar Function and their applications, Ordinary Vector Integration, Line Integrals and its applications like Green's theorem.

Section A  
Tuesday, Thursday 12:30-12:45  
S-413  
Dr. S. Malik

MATH 209: Linear Algebra  
**Prerequisite:** MATH 103 and MATH 102  

Section A  
Tuesday, Thursday 11:00-12:15  
S-412  
Dr. W. Hussain

MATH 210: Set Theory  
**Prerequisite:** MATH 101 or Intermediate with mathematics or A-Levels with Mathematics  
Sets and Basic operations on Sets, Relations, Functions, Cardinal and Ordinal Numbers, Axioms of Choice, Zorn's Lemma, Well-ordering theorem

Section A  
Tuesday, Thursday 02:00-03:15  
S-413  
Dr. M. Hussain

MATH 305: Mechanics-II  
**Prerequisite:** MATH 203  
Introduction to cartesian tensors, kinematics of a rigid body, deformation of an elastic body in space, Lagrangian and Eulerian representations of deformations, fundamental theorem of continuum mechanics and applications.

Section A  
Tuesday, Thursday 12:30-12:45  
S-412  
Dr. W. Hussain

MATH 311: Topology and Metric Spaces  
**Prerequisite:** MATH 205  
Metric Spaces, Generalization of analysis, Topological spaces, continuity, compactness, connectedness, separation axioms, compactification, application to spaces of functions, completion of metric spaces.

Section A  
Monday, Wednesday, Friday 10:00-10:50  
S-412  
Dr. M. Asghar
HISTORY AND PAKISTAN STUDIES

PKST 101: Pakistan Studies (Compulsory)  (3 credits)
The Ideology of Pakistan, post War of Independence developments, the Two-Nation theory, Pakistan movement, important events and the creation of Pakistan. Initial problems of Pakistan, constitutional development, Islamization in Pakistan. Land of Pakistan, economic and industrial development in Pakistan. The Islamic World and Pakistan.

Section A  Monday, Wednesday, Friday 09:00-09:50  S-213  Ms. Saadia
Section B  Monday, Wednesday, Friday 09:00-09:50  S-212  Dr. Arifa Syeda
Section C  Monday, Wednesday, Friday 10:00-10:50  S-212  Ms. Saadia
Section D  Monday, Wednesday, Friday 10:00-10:50  S-213  Dr.Y K Bangash
Section E  Monday, Wednesday, Friday 08:00-08:50  S-213  Dr.Y K Bangash
Section F  Monday, Wednesday, Friday 12:00-12:50  S-212  Dr. Arifa Syeda
Section G  Monday, Wednesday, Friday 02:00-02:50  S-212  Dr. Younis
Section H  Tuesday, Thursday 08:00-09:15  S-212  Mr. K. Jawad

HIST 302: Survey of Modern Europe  (3 credits)
The geography, culture, social and political history of Europe, highlighting personalities, events and analyzing the politics. A study of the French Revolution, the Eastern Question, the unification of Italy and Germany. A study of the forces of nationalism, imperialism and totalitarianism as well as Europe's interaction with non-western cultures. Foreign policy of the big powers.

Section A  Tuesday, Thursday 12:30-01:45  S-213  Ms. M. Farooq

HIST 303: Modern International Relations since 1914  (3 credits)
International relations between the global powers and the rest of the world, highlighting events, personalities and wars in different continents of the world. Special emphasis will be laid on the period between the two world wars. A study of the role and the foreign policies of the super powers, Britain and the United States.

Section A  Tuesday, Thursday 11:00- 12:15  S-213  Ms. M. Farooq

HIST 304: History of the United State  (3 credits)
The American Revolution, the early national experience and the Civil War. A study of reconstruction, westward expansion, the development of political parties, diplomacy and economic development.

Section A  Monday, Wednesday, Friday 11:00-11:50  S-212  Dr.Arifa Syeda

HIST 402: Mughal Rule in India  (3 credits)
The state and society under the Mughal rule; the central and provincial administration, the military, economic development, art and culture.

Section A  Monday, Wednesday, Friday 11:00-11:50  S-213  Dr.Y K Bangash

HIST 405: Modern Muslim World (1945-2008)  (3 credits)
Modern history of Middle East: Turkey, Egypt, Saudi Arabia, Iran, Syria and Iraq.

Section A  Tuesday, Thursday 12:30-01:45  S-212  Mr. K. Jawad
PHILOSOPHY

PHIL 101: Introduction to Philosophy (3 credits)
Introduction to problems & field of philosophy through the study of major philosophers; Work and other philosophical texts; this course examines many of the basic questions of Philosophy and looks at the methods of philosophical inquiry

Section A  Monday, Wednesday, Friday 09:00-09:50  E-121  Dr. Miller
Section B  Monday, Wednesday, Friday 10:00-10:50  E-121  Dr. Miller

PHIL 201: History of Philosophy: Pre-Socrates to the Medieval Period (3 credits)
A study if the rise of critical thought in the pre-Socratic Greek world and its development through the issues related to deriving the morally right and individual significance by understanding the universe’s structure and function. The classic Platonic and Aristotelian worldviews are examined and evaluate by their Eastern And Western historical critics through the end of the medieval period.

Section A  Tuesday, Thursday 09:30-10:45  E-121  Dr. Miller

PHIL 331: Theories of Ethics (3 Credits)
The Ethical issues of objectivity vs. subjectivity in moral judgment, relativity vs. universalizability of moral principles, the logical foundation of moral perspectives, the scope and limits of moral language, etc., will be examined in the light of contemporary theories designed to resolve these issues.

Section A  Tuesday, Thursday 02:00-03:15  E-323  Ms. Ghazla Irfan

PHIL 341: Epistemology: Knowing How We know (3 credits)
This course provides a critical analysis of the foundations of knowledge. Classical theories will be examined but the emphasis will be on recent trends in substantiating belief and defining knowledge.

Section A  Monday, Wednesday, Friday 11:00-11:50  E-121  TDB

PHIL 401: Philosophical Investigations: The Ancients Period (3 credits)
Students will study in the thought, context, and impact of Aristotle of special interest will be his contributions to the theoretic reconstruction of science, ethics and theology.

Section A  Tuesday, Thursday 11:00-12:15  E-121  Dr. Miller
PHYSICS

PHYS 100: Introduction to Physics (4 Credits)
(Not to be opted WITH Phys 101 – Not for students who have studied Physics at Intermediate /A-levels)
Introduction to Physics lays emphasis on basic concepts that can be treated with elementary mathematics. These include applications of physics in everyday life to which the student can relate. Concepts to be taken up are: Scope of physics, kinematics and bodies in motion; Communication, Basic Electricity, Medical Physics and Elements of Astrophysics, Laboratory: familiarization with measuring instruments and related experimentation.

Section C  Tuesday, Thursday 08:00-09:15  S-007  Dr. P. J. Henderson
Lab: Thursday 10:00 - 11:50  S-029

PHYS 101: General Physics I (4 Credits)
Prerequisite: Calculus I or Physics at Intermediate/A - Level
Mechanics, wave motions and optics with emphasis on the fundamental principles of physics, laboratory

Section A  Tuesday, Thursday 08:00-09:15  S-109  Saqlain Abbas Shah
Lab: Monday 02:00-03:50  S-029

PHYS 103: Mechanics (4 Credits)
Prerequisite: PHYS 101 and Calculus I or Physics at Intermediate/A - Level
Study of physical phenomena in mathematical terms. Statics and dynamics of particles and rigid bodies; oscillatory and rotary motion; gravitation and fluid mechanics. Laboratory

Section A  Monday, Wednesday, Friday 12:00-2:50  S-109  Saqlain Abbas Shah
Lab: Monday 08:00-09:50  S-029
Section B  Tuesday, Thursday 11:00-12:15  S-027  Dr. Hamid Latif
Lab: Wednesday 10:00-11:50  S-039
Section C  Tuesday, Thursday 09:30-10:45  S-027  Saqlain Abbas Shah
Lab: Friday 08:00 - 09:50  S-029

PHYS 151: Introduction to Sources of Energy and Environment (3 Credits)
Prerequisite: Not recommended for first semester freshmen
Survey of conventional energy recourses; fossil fuels including petroleum, natural gas, coal and tar sands; the promise and problems of nuclear energy; Alternative energy sources; Wind, Solar, Bio - gas, tidal etc., energy conservation; environmental pollution and its global effects.

Section A  Tuesday, Thursday 09:30-10:45  S-016  Dr. Manzur Gill

PHYS 221: Electricity and Magnetism (4 Credits)
Prerequisite: PHYS 103
Electrostatics, magnetostatics, electric current, laws of magnetism, Maxwell’s Equations, electromagnetic energy and electromagnetic wave equations, Laboratory.

Section A  Monday, Wednesday, Friday 10:00-10:50  S-007  Dr Sadia Zaheer
Lab: Tuesday 11:00-12:50  S-029
PHYS 255: Introduction to Meteorology (3 credits)
Prerequisite: PHYS 102 or PHYS 103 or PHYS 151
Study of the physical processes of condensation, precipitation, radiation, and Radiative transfer; solar radiation, atmospheric motion measuring properties of the atmosphere, ionosphere and magnetosphere; Earth’s magnetic field and charge density movement in the atmosphere
Section A Monday, Wednesday, Friday 02:00-02:50 S-109 Dr Hamid Latif

PHYS 301: Classical Mechanics (4 Credits)
Prerequisite: PHYS 103
Study of the motion of particles and system of particles. Direct application of Newtonian mechanics: Langranian formulation: Hamiltonian formulation. Motion under an inverse force field; two body problems; planetary orbital motion; Legendre transformation; canonical transformations and their properties; Poisson’s brackets, theorems and invariances; Laboratory.
Section A Monday, Wednesday, Friday 12:00-12:50 S-016 Dr Hamid Latif Lab: Thursday 10:00 - 11:50 S-043

PHYS 321: Electrodynamics (4 Credits)
Prerequisite: PHYS 221
Emphasis on the unity of electric and magnetic phenomena. Introduction of electrostatics and magnetostatics; solution of boundary - value problems; time - varying fields; gauge transformations; Maxwell’s Equations and wave equations; electromagnetic wave propagation in lossless, lossy and metallic media; wave propagation through coaxial transmission lines; rectangular wave guides and radiation from oscillating dipoles; Laboratory.
Section A Tuesday, Thursday 09:30-10:45 S-007 Dr. M. Y. Zaheer Lab: Thursday 02:00-03:50 S-029

PHYS 322: Statistical Physics (3 Credits)
Prerequisite: PHYS 222
Introduction to the basic principles and concepts of statistical physics. A study of the behavior of large assemblies of particles. Phase space, physical systems, ensembles, classical and quantum mechanics, distribution functions, partition functions, thermodynamics functions and the principle of equipartition energy.
Section A Monday, Wednesday, Friday 11:00-11:50 S-007 Dr. M. Y. Zaheer

PHYS 331: Electronics I (3 Credits)
Prerequisite: PHYS 221
Study of the elementary physics of semiconductors, two - terminal devices, LEDs, lasers, Schottky diodes, three terminal devices and selected topics on metal contacts and device fabrication.
Section A Tuesday, Thursday 02:00-03:15 S-027 Syed Iftikhar Hussain

PHYS 451: Sources of Energy (3 Credits)
Prerequisite: PHYS 301
Study of the different sources of energy, including thermal, hydroelectric, solar, nuclear and thermo nuclear. Historical origination of the quantum theory, foundation of wave mechanics, Schrodinger wave equation and its solution for free
Section A Tuesday, Thursday 11:00-12:15 S-109 Dr. Fareeha Hameed

PHYS 452: Atmospheric Physics (3 credits)
Prerequisite: PHYS 222 or PHYS 255
General description of the atmosphere, atmospheric thermodynamics, solar and terrestrial radiation, atmospheric aerosol and cloud microphysical processes, atmospheric electricity and dynamics.
Section A Monday, Wednesday, Friday 09:00-09:50 S-027 Dr Hamid Latif
**PHYS 461: Quantum Mechanics I**  
*(3 Credits)*  
**Prerequisite: PHYS 301**  
Study of the different sources of energy, including thermal, hydroelectric, solar, nuclear and thermo-nuclear.

Section A  
Monday, Wednesday, Friday 02:00-02:50  
S-007  
Dr. Sadia Zaheer

**PHYS 481: Solid State Physics**  
*(3 Credits)*  
**Prerequisite: PHYS 221**  
Study of solids, crystal structure, direct and reciprocal lattices, types of bonding, lattice vibrations, the thermal, electrical and magnetic properties of solids and the effects of crystals.

Section A  
Tuesday, Thursday 09:30-10:45  
S-109  
Dr. Fareeha Hameed

**PHYS 483: Materials Science**  
*(3 credits)*  
**Prerequisite: PHYS 321**  
Study of the properties of materials; the internal structure of materials; the performance of materials during manufacture, production and processing; the performance of materials during service, crystal structures, crystal geometry, solidification, crystalline imperfections, diffusion in solids, thermodynamics and phase diagrams, and electrical materials.

Section A  
Tuesday, Thursday 11:00-12:15  
S-007  
Dr. M. Y. Zaheer

**PHYS 498 - Internship**  
*(6 credits)*  
**Prerequisite: Physics majors with 90 completed credit hours with CGPA 2.50 or above**  
Students will have to work in a well known industry/organization or University/Institute for 6 to 8 weeks during summer semester, and will observe the timings as prescribed by the host organization. Director Career Planning will act as a liaison officer between the department and the industry/organization University/Institute. The student will have a supervisor from the department as well as from the host organization. At the end of the completion of the training students will submit a written report to both the supervisors and will be evaluated by a departmental committee.

**PHYS 499: Senior Thesis Project**  
*(6 credits –spread over two semesters)*  
**Prerequisite: Physics majors with 90 completed credit hours with CGPA 2.50 or above**  
Each student works on an independent project under the supervision of a faculty member, with the expectations that the student will prepare a senior thesis and will present a seminar on his / her work.

**Note:** Students not taking PHYS 498 or PHYS 499 due to eligibility or otherwise have to take two additional physics courses in lieu of to make up the required credits for majoring/graduating.
POLITICAL SCIENCE

PLSC 101: Introduction to Political Science  (3 credits)
A survey of the area covered in Political Science including the nature of political science, the nature and forms of the state, structure of government, political dynamics, and the development of an appropriate political science vocabulary.

Section A  Monday, Wednesday, Friday 11:00-11:50  S-111  Ms. Shakila Sindhu
Section B  Monday, Wednesday, Friday 09:00-09:50  S-111  Dr. Ejaz
Section C  Monday, Wednesday, Friday 10:00-10:50  S-111  Mr. W. Waheed
Section D  Monday, Wednesday, Friday 02:00-02:50  S-111  TBD
Section E  Tuesday, Thursday 12:30-01:45  S-111  Ms. Shakila Sindhu

PLSC 102: Pakistan Government - National  (3 credits)
A history of the freedom movement and study of the main institutions of the national government and what makes the Pakistan government unique.

Section A  Monday, Wednesday, Friday 12:00-12:50  S-111  Dr. Ejaz
Section B  Tuesday, Thursday 09:30-10:45  S-112  Dr. M. Younis

PLSC 201: Government of Western Europe and the United States  (3 credits)
Prerequisite: PLSC 101
A comparative study of the parliamentary, presidential, unitary and federal systems of major western nations.

Section A  Tuesday, Thursday 11:00-12:15  S-111  Dr. M. Younis

PLSC 301: Ancient, Medieval and early Modern Political Theory  (3 credits)
Prerequisite: PLSC 101
A study of political thought from early Greece through the 17th Century. Using original sources from philosophers including Aristotle, Plato, Hobbes, Machiavelli, Locke, Rousseau and Hegel.

Section A  Tuesday, Thursday 12:30-1:45  S-112  Dr. Hasnaat
Section B  Monday, Wednesday, Friday 09:00-09:50  S-112  Dr. Hasnaat

PLSC 304: Research Methodology  (3 credits)
Prerequisite: Stat 101
A basic study of the techniques and tools for significant research in the field of Political Sciences.

Section A  Tuesday, Thursday 09:30-10:45  S-111  Dr. Q. Memon

PLSC 305: Islamic Political Thought  (3 credits)
Prerequisite: PLSC 101
Covering the development of Islam political thought from ancient times to the present. The muslim thinkers Al-Faeabi, Al-Mawardi, Al-Ghazzali, Ibn Khaldun, Shah Waliullah and Allama Muhammad Iqbal will be examined.

Section A  Tuesday, Thursday 11:00-12:15  S-112  Dr. Hasnaat
PLSC 320: International Relations  
**Prerequisite: PLSC 101**  
(3 credits)  
Theory and practice of international relations using the distinction between realism and idealism as the basis for study. Attention will be given to power relationships, theories of war and conflict, international morality, collective security and terrorism.  
Section A  
Tuesday, Thursday 08:00-09:15  
S-111  
Dr. W. Waheed  
Section B  
Monday, Wednesday, Friday 03:00-03:50  
S-111  
Dr. Bokhari  

PLSC 321: Pakistan Foreign Policy  
**Prerequisite: PLSC 101**  
(3 credits)  
This course will provide a survey and critical evaluation of the status and relationships between Pakistan and the rest of the world with special emphasis upon relations with the Islamic World and the United States.  
Section A  
Monday, Wednesday, Friday 11:00-11:50  
S-112  
Dr. Bokhari  

PLSC 336: Public Administration  
**Prerequisite: PLSC 101**  
(3 credits)  
Includes the arts of administration, organizational aspects, management agencies, unity under the chief executive, departmental organization, organization, federal-provincial and headquarters field-relationships, line functions, fiscal management budgets strategy and tactics and government career service.  
Section A  
Monday, Wednesday, Friday 03:00-03:50  
S-112  
Dr. M. Younis  

PLSC 401: International Political Economy  
**Prerequisite: PLSC 101 & ECON 100**  
(3 credits)  
The primary goal of this course is to introduce students to a broad range of topics in contemporary political economy, i.e. in the study of phenomena that are both political and economic in nature. Although the works will discuss cover a variety of substantive issues, they share a unifying methodological and conceptual framework, commonly known as rational choice theory.  
Section A  
Tuesday, Thursday 02:00-03:15  
S-111  
Ms. S. N. Sindhu  

PLSC 403: Seminar and Major Political Science Research Paper  
**Prerequisite: PLSC 304**  
(3 credits)  
Major Paper (20 pages minimum) written under the direction of a political science professor.  
Section A  
Monday, Wednesday, Friday 10:00-10:50  
S-112  
Mr. Qalandar Memon  
Section B  
Monday, Wednesday, Friday 12:00-12:50  
S-112  
Mr. Qalandar Memon  

PLSC 412: Foreign Policy Analysis  
(3 credits)  
The course will involve studying approaches like game theories, ‘group think’ and others. Furthermore, this course will introduce students to different tools that states employ in order to implement their foreign policy. Along with this, this course will include five case studies in which students will analyze different crisis situation foreign policy decisions applying theories and tools investigated to this point.  
Section A  
Monday, Wednesday, Friday 02:00-02:50  
S-112  
Dr. Ejaz
PLSC 413: Critical Theory and Post Colonial Situation (3 credits)
This course offers a survey of the emerging trends in the contemporary theoretical field of Post-colonial studies which aims to conceptualize the interrelation of culture, power and knowledge in post-colonial societies. The course shall examine the works of Aijaz Ahmad, Ashis Nandy, Partha Chatterjee, Gayatri Spivak, Homi Bhabha, Gyan Parkash, Arif Dirlik, Kwame Appiab, Masao Miyoshi, Pal Ahluwalia and others to raise some fundamental questions about the scope, ambitions and epistemological transgressions of post-colonial theory.

Section A Tuesday, Thursday 02:00-03:15 S-112 TBD
PSYCHOLOGY

PSYC 100: Introduction to Psychology (3 credits)
A survey of the historical background and sub-fields of psychology, research methods, biological bases of behavior and psychological processes such as sensation, attention, perception, states of consciousness, learning, memory, motivation, emotions, intelligence, thinking and personality.

Section A  Monday, Wednesday, Friday 08:00-08:50  S-115  Mr. S. Samuel
Section B  Monday, Wednesday, Friday 09:00-09:50  S-115  Ms. Riffat Zahir
Section C  Monday, Wednesday, Friday 10:00-10:50  S-115  Ms. Saira Khan

PSYC 150: Developmental Psychology - I (3 credits)
Prerequisite: PSYC 100
Study of human development from conception to adolescence focusing on physical, intellectual and personality development, special emphasis on development in adolescence and the quest of identity. Research activities integrated into the course work.

Section A  Monday, Wednesday, Friday 11:00-11:50  S-115  Mr. Abdul Hameed

PSYC 305: Research Methods in Psychology (3 credits)
Prerequisite: PSYC 100 and PSYC 220
Basic understanding of research methodology. History of scientific approach, basic elements, methods, design and structure of research with emphasis on data collection, analysis interpretation; writing reports and ethics of social science research. A small research project will be required-individually or in a group.

Section A  Monday, Wednesday, Friday 12:00-12:50  S-115  Ms. Riffat Zahir

PSYC 310: Social Psychology (3 credits)
Prerequisite: PSYC 100
Nature, scope, historical perspective and research methods. Social perception, cognition and identity; interpersonal relationship, attribution, conformity, pro-social behavior, groups and leadership, attitude, prejudice and aggression. Facts and theories will be related to everyday social issues and concerns.

Section A  Tuesday, Thursday 09:30-10:45  S-115  Mr. Suneel Samuel

PSYC 350: Biopsychology (3 credits)
Prerequisite: PSYC 100
Study of behavior and mental processes from the biological perspective with particular emphasis on the role of neurochemical and endocrine factors in the function of the central nervous system; chemical and neural bases of sensory processes; motivation, emotion, learning, memory, language, sleep, reproduction, gender and psychopathology.

Section A  Tuesday, Thursday 11:00-12:15  S-115  Ms. Riffat Zahir

PSYC 360: Psychological Measurement and Testing (3 credits)
Prerequisite: PSYC 100
Functions, origins and basic concepts of psychological testing; test construction, ability/ intelligence and personality testing, application of psychological tests in educational, occupational and clinical contexts; ethical issues.

Section A  Monday, Wednesday, Friday 02:00-2:50  S-115  Ms. Saira Khan
PSYC 440: Counseling Psychology  (3 credits)
Prerequisite: PSYC 100 & PSYC 340 or permission from the Instructor
Introduction to theories, assessment and approaches to counseling; psychoanalytic, client-centered, behavioral, cognitive behavioral, transactional analysis and rational emotive approaches; educational and occupational counseling; counseling for emotional and sexual problems; family, marriage, and community mental health counseling; ethics in counseling.

Section A  Tuesday, Thursday 12:30-01:45  S-115  Ms Aisha Ateeq

PSYC 450: History and Systems of Psychology  (3 Credits)
Prerequisite: To be taken during the senior year by Psychology Majors or permission of the instructor
The course will explore the historical origin of modern psychology with a focus on Greek contribution, Muslim contribution, European philosophy, and physiology. Development of various schools of thought in Psychology including Structuralism, Functionalism, Associationism, Behaviorism, Gestalt psychology psychoanalysis, Cognitive Psychology, Humanistic Psychology, Evolutionary Psychology, and some current trends.

Section A  Monday, Wednesday, Friday 1:00-1:50  S-115  Mr. Abdul Hameed

PSYC 480 A: Senior Thesis  (3 Credits)
Prerequisites: PSYC 100, PSYC 220, PSYC 305 and permission of instructor
An independent research study on a topic chosen by the student. The research study will be supervised by a faculty member of Psychology Department. Open to seniors majoring in Psychology
Note: PSYC 480 consists of two parts (i.e., PSYC 480 A and PSYC 480 B. If you are studying PSYC 480 A in the Fall semester you need to study PSYC 480 B in the following (Spring 2011) semester.

Section A  Tuesday, Thursday 02:00-03:15  S-115  A. Ateeq & A Hameed
ISLM 101: Islamic Education  (3 credits)
This course is intended to provide an introductory understanding of Islam. Students learn much about Islamic Way of life in this subject. They study through this course logical and rational vindication of their fundamental beliefs. The course is quite helpful in improving character traits, personality strengths and social manners in the light of Islamic teachings. By taking this course students improve their inner conviction about their faith and are likely to become better Muslims. Basic emphasis is on ethical development and character building of the students.

Section A  Monday, Wednesday, Friday 08:00-08:50  E-122  Mr. A. U. Rehman
Section B  Monday, Wednesday, Friday 09:00-09:50  E-122  Mr. A. U. Rehman
Section C  Monday, Wednesday, Friday 03:00-03:50  E-122  Hafiz Abdul Ghani
Section D  Monday, Wednesday, Friday 12:00-12:50  E-122  Dr. F. Aziz
Section E  Tuesday, Thursday 09:30-10:45  E-122  Mr. A. U. Rehman
Section F  Tuesday, Thursday 12:30-01:45  E-122  Mr. Samiullah
Section G  Monday, Wednesday, Friday 10:00-11:50  E-122  Dr. F. Aziz
Section H  Monday, Wednesday, Friday 11:00-11:50  E-122  Dr. F. Aziz
Section J  Tuesday, Thursday 02:00-03:15  E-122  Dr. F. Aziz

ISLM202: The Quran--- Contents, Style and Interpretation  (3 Credits)
Prerequisite: ISLM101
This course is offered to assist the students in understanding the Holy Qur'an with its meaning and commentary. The course includes compilation of the Holy Quran, content types, and stylistic, selected readings from the Holy Qur'an, Ulum al-Qur'an (collection, exegesis, and I'jaz al-Qur'an) inimitability of the Qur'an, qualities of Mufassir and different types of Interpretations.

Section A  Tuesday, Thursday 11:00-12:15  E-122  Mr. Samiullah

ISLM302: Islamic Jurisprudence- I  (3 Credits)
Prerequisite: ISLM101/CRST152
This subject introduces students to the definition of law; Sources of Islamic Sharia: Qur'an, Sunnah, Ijma, Qiyas; Ijtihaad; Types of law; Islamic injunctions and their kinds, and family law. The course provides a broad perspective of Islamic law and jurisprudence and its development throughout history and examines the contemporary debate on its application. It reviews the evolution of Schools of Law and their impact on various Muslim societies.

Section A  Monday, Wednesday, Friday 02:00-02:50  E-122  Dr. F. Aziz

ISLM 304: Seerat-Un-Nabi  (3 credits)
Prerequisite: ISLM101
This course aims to provide an understanding of how the development biographical studies of the prophet Muhammad (PBUH) influenced Islamic thought throughout Islamic history. The course will examine the Prophet as an example to be followed; the difference between the Prophet’s tradition (Hadith) and his biography (seerah); the Prophet’s life before his mission; the early period of Makkah where he faced opposition; migration to Madinah; establishment of Islamic State in Madinah; treaties and relations with Non-Muslims; Ghazwaat and conquest of Makkah; last sermon and its impact on modern human life.

Section A  Tuesday, Thursday 08:00-09:15  E-122  Mr. A. U. Rehman
Modern western empirical science has surely been the most impressive intellectual development since the 16th century. Religion, of course, has been around for much longer, and is presently flourishing, perhaps as never before. The relation between these two great cultural forces has been tumultuous, many-faceted, and confusing. There are many important issues and questions in this neighborhood; this course concentrates on just a few. Perhaps the most salient question is whether the relation between religion and science is characterized by conflict or by concord. This question will be the central focus of this course. Other important issues to be considered are the nature of religion, the nature of science, the epistemologies of science and, in particular, of religious belief, and the question how the latter figures into the (alleged or actual) conflict or concord between religion and science.

Section A  Tuesday, Thursday 02:00-03:15  E-126  Mr. H. A. Ghani

Christian Studies

CRST 151: Introduction to Christian Thought  (3 Credits)
Introduction to Christian belief and practices; development and diverse forms of Christianity drawing on categories of the study of religion including ritual, narrative, art and theology.

Section A  Monday, Wednesday, Friday 12:00-12:50  E-126  Dr. H. McCartney

CRST 152: Christian Ethics  (3 Credits)
Biblical, theological, and philosophical foundation of Christian ethics

Section A  Monday, Wednesday, Friday 10:00-10:50  E-126  Dr. B. Wetmore
Section B  Monday, Wednesday, Friday 11:00-11:50  E-126  Dr. B. Wetmore

CRST 252: Christian History  (3 credits)
Prerequisites: CRST 151, CRST 152
This course is a survey of the rise of Christianity from the period immediately following the ministry of Jesus Christ to the contemporary worldwide Christian movement. This course will highlight Christians who made significant impact upon the Church, as well as investigating movements within the Church’s history which have molded the various expressions of Christianity known around the including a special emphasis on Christianity in South Asia from the missionary work of the Apostle Thomas to the present day.

Section A  Tuesday, Thursday 09:30-10:45  E-126  Mr. Eddie Robinson

CRST 451: Paul’s Life, Theology and Impact  (3 credits)
Prerequisite: CRST 152
An overview of Paul’s life and impact on Christianity within its cultural and historical setting; a survey of Paul’s thirteen letters in the New Testament, and an in depth examination of key letters

Section A  Tuesday, Thursday 08:00-09:15  E-126  Dr. B. Wetmore
SOCL 100: Introduction to Sociology  
(3 credits)
This course aims to develop an understanding of societal processes by critically thinking about oneself in relation to the various social structures and worlds at the individual, group and societal levels. The global focus of the course uses the tools of sociology to look at a variety of issues around the world. The course provides an opportunity to both learn about basic sociological approaches and to do some sociological research.

Section A  Tuesday, Thursday 08:00-09:15  E-324  Mr. A. Azeem
Section B  Monday, Wednesday, Friday 09:00-09:50  E-324  Mr. S. Rasheed
Section C  Monday, Wednesday, Friday 10:00-10:50  E-324  Mr. A. Azeem
Section D  Tuesday, Thursday 11:00-12:15  E-324  Mr. A. Azeem
Section E  Monday, Wednesday, Friday 11:00-11:50  E-324  Mr. S. Rasheed

SOCL 201: Sociological Research  
(3 credits)
Prerequisite: SOCL 100 or another introductory course in the Social Sciences
The objective of this course is to know about the major methodological approaches in social science research. Students become aware of the comparative advantages and limitations of a variety of research orientations, strategies and techniques. The class is also an experience in organized curiosity that provides an opportunity for students to do sociology. Experiments, field observations, unobtrusive research and surveys will be learned by lecture, discussion, and the review of examples. Then the class will become a research team using the basic methods and techniques of social research to carry out a group research project. As students participate in a series of activities they will develop skills in observation, interviewing, hypothesis building, theory building, questionnaire construction, computer data manipulation, data interpretation, research report writing, and client support.

Section A  Tuesday, Thursday 09:30-10:45  E-324  Ms. G. Clark

SOCL 223: Social and Cultural Anthropology  
(3 credits)
A study of races and cultures of our world with a special look at non-western cultures. It will provide tools for more effective inter-cultural communications as well as giving us a mirror in which to see our own cultural group more clearly. One key assumption of the class will be that we absorb cultural concepts most effectively through supervised fieldwork and exposure to ethnographic description.

Section A  Tuesday, Thursday 02:00-03:15  E-324  Ms. G. Clark

SOCL 301: Theoretical Perspectives in Sociology  
(3 credits)
Prerequisite: SOCL 100
This is an examination of the structure and scope of sociological theorizing. This class will attempt to build a quality of mind that will help us to “use information and to develop reason in order to achieve lucid summations of what is going on in the world and of what may be happening within ourselves” Wright Mills (1959:5). This “sociological imagination” will be developed by studying the theory, method and object of investigation of some “masters of sociological thought” as they tried to make sense out of the world around them.

Section C  Monday, Wednesday, Friday 02:00-02:50  E-324  Mr. S. Rasheed

SOCL 325: Sociology of Gender  
(3 credits)
Prerequisite: SOCL 100
A survey of the impact of cultural values, social institutions and sex roles in the construction of gender. Analyses gender inequality in contemporary societies and explores the social experience of gender across different cultures. It views roles, statuses, and social placement of gender as an outcome of socioeconomic and cultural environment.

Section A  Tuesday, Thursday 08:00-09:15  E-121  Ms. G. Clark
SOCL 410: Sociology of Art and Culture (3 credits)
Prerequisite: SOCL 100, 301
This course examines how cultural issues can be investigated sociologically. It introduces students to the main range of theoretical approaches to the sociology of culture and offers students the chance to explore sociological viewpoints on the nature of artistic creation and other forms of cultural activity. A particular feature of the course involves analysis of what the terms 'high culture' and 'popular culture' may mean, and the stakes that are involved in their use in different social contexts.

Section A Tuesday, Thursday 12:30-01:45 E-324 Mr. S. Rasheed

SOCL 465: Sociology of Sport and Leisure (3 credits)
Prerequisite: SOCL 100, 201 and 301
This course critically examines cultural and economic relations in the sport and leisure. Topics include outdoor recreation, spectator sport, informal play, tourism and other entertainment activities. Topics will be explored from both contemporary and historical perspectives with emphasis on the dynamics of power and identity.

Section A Monday, Wednesday, Friday 08:00-08:50 E-324 Mr. A. Azeem

SOCL 499: Final Year Independent Research Project (3 credits)
Prerequisite: Only available to sociology majors who have taken SOCL 100, 201 and 301.
An independent research on a topic chosen by the student which will be conducted under the supervision of a Sociology faculty member.

Section A S. Rasheed, A. Azeem, G. Clark
STATISTICS

STAT 100: BASIC STATISTICS (3 credits)
Sample and population, variables, collection and presentation of data, measures of central tendency and dispersion for ungrouped data, Index numbers, correlation and free hand line of trend.

Section A  Monday, Wednesday, Friday 08:00-08:50  S-421  M. Anwar Mughal
Section B  Monday, Wednesday, Friday 09:00-09:50  S-420  Mr. Muhammad Aslam
Section C  Tuesday, Thursday 08:00-09:15  S-421  Dr. Muhammad Azam
Section D  Monday, Wednesday, Friday 10:00-10:50  S-420  Dr. Muhammad Aslam
Section E  Monday, Wednesday, Friday 10:00-10:50  S-421  Ms. Nadia Mushtaq
Section F  Monday, Wednesday, Friday 11:00-11:50  S-420  Ms. Fariha Yasmin
Section G  Monday, Wednesday, Friday 12:00-12:50  S-421  Mr. Muhammad Aslam
Section H  Monday, Wednesday, Friday 03:00-03:50  S-420  TBD

STAT 101: STATISTICAL METHODS (3 credits)
Nature and scope of statistics, scales of measurements, measure of central tendency and dispersion for grouped data, moments, skewness and kurtosis, fundamental rules of counting, Basic probability, and moments in probability context.

Section A  Tuesday, Thursday 08:00-09:15  S-420  Ms. Nadia Mushtaq
Section B  Tuesday, Thursday 09:30-10:45  S-420  Ms. Fariha Yasmin
Section C  Tuesday, Thursday 09:30-10:45  S-421  Dr. Hillery McCartney
Section D  Tuesday, Thursday 11:00-12:15  S-420  Dr. Muhammad Azam

STAT 102: Probability and Probability Distributions (3 credits)
Basic set theory. Different approaches and laws of probability. Conditional probability, Bayes’ rule. Random variables, some standard discrete and continuous probability distributions

Section A  Monday, Wednesday, Friday 12:00-12:50  S-420  Dr. Mujahid Rasul
Section B  Monday, Wednesday, Friday 09:00-09:50  S-421  Dr. Hillery McCartney

STAT 103: Quantitative methods in social sciences (3 credits)
Application of Statistical methods in Social Sciences. Data analysis using SPSS.

Section A  Tuesday, Thursday 11:00-12:15  N-207  Mr. M. Anwar Mughal

STAT 201: Statistical Inference I (Pre-requisite: Stat 101 or 102) (3 credits)
Population and sample; Introduction to sampling distributions and their properties; point and interval estimation; testing of hypotheses about means, proportions and variances.

Section A  Tuesday, Thursday 12:30-01:45  S-420  Mr. Muhammad Aslam

STAT 202: Statistical Inference II (Pre-requisite: Stat 201) (3 credits)
Tests based on Chi-squared distribution. ANOVA and analysis of basic designs. Non-parametric tests.

Section A  Monday, Wednesday, Friday 08:00-08:50  S-420  Ms. Fariha Yasmin

STAT 301: Sampling techniques I (pre-requisite: Stat 201) (3 credits)
Basic sampling designs with applications, Estimation of means, proportions and variances. Ratio and Regression estimates.

Section A  Tuesday, Thursday 02:00-03:15  S-420  Dr. Muhammad Aslam
STAT 304: Distribution Theory *(pre-requisite: Stat 102)* *(3 credits)*  
Random variables and expectations of their functions. Theory and application of important discrete and  
continuous distributions.

Section A  
Tuesday, Thursday 11:00-12:15  
S-421  
Dr. Mujahid Rasul

STAT 305: Statistical Quality Control *(Pre-requisite: Stat 101)* *(3 credits)*  
Control charts for attributes and variables. Acceptance sampling plan, quality improvement procedures,  
Taguchi method of online or offline approach to quality improvement; signal-noise ratios using orthogonal  
arrays.

Section A  
Monday, Wednesday, Friday 11:00-11:50  
S-421  
Mr. M. Anwar Mughal

STAT 309: Regression Analysis II *(pre-requisite: Stat 303)* *(3 credits)*  
Generalized linear regression, Assumptions, Diagnostics and remedial measures, Inference about  
parameters. Simultaneous equation models. Model building.

Section A  
Monday, Wednesday, Friday 02:00-02:50  
S-420  
Dr. Muhammad Azam

STAT 310: Time Series Analysis *(pre-requisite: Stat 303)* *(3 credits)*  
Types of time series data, trends, seasonal and cyclical analysis of data, irregular series, short term  
forecasting, ARMA and ARIMA models, diagnostic checking, forecasts, Box-Jenkin’s approach, spectral  
analysis.

Section A  
Monday, Wednesday, Friday 02:00-02:50  
S-421  
Ms. Nadia Mushtaq

STAT 401: Stochastic Processes *(Pre-requisite: Stat 102)* *(3 credits)*  
Introduction, random walk and ruin problem, Markov chains and Markov processes, power spectra and  
linear systems, renewal theory, Brownian motion.

Section A  
Tuesday, Thursday 02:00-03:15  
S-421  
Dr. Hillery McCartney

STAT 407: Estimation and Hypothesis Testing *(Pre-requisite: Stat 304)* *(3 credits)*  
Interval estimation, Neyman-Pearson Lemma, power functions, Uniformly most powerful test. Deriving  
tests of hypothesis for parameters in Normal, Exponential, Gamma and Uniform distributions.

Section A  
Tuesday, Thursday 12:30-01:45  
S-421  
Dr. Mujahid Rasul

STAT 408: Biostatistics *(Pre-requisite: Stat 102)* *(3 credits)*  
Introduction, probability distributions of biological variables, probit and logit transformations, ANOVA in  
biostatistics, Developing G test, R x C test of independence.

Section A  
Monday, Wednesday, Friday 03:00-03:50  
S-421  
Dr. Muhammad Aslam

STAT 499: Research project *(6 credits)*  
Students with CGPA 2.5 or above will be eligible for research; students with CGPA less than 2.5 will have  
to take any other course from the list of electives.
URDU 101: Communicative Urdu (3 credits)
Communication and its different means; brief introduction to Urdu language; some fundamentals of Urdu grammar; functional Urdu; creative writing; journalistic Urdu.

Section A  Monday, Wednesday, Friday 08:00-08:50  E-328  Dr. Ali M. Khan
Section B  Monday, Wednesday, Friday 11:00-11:50  E-328  Mr. Atteeq Anwer
Section C  Monday, Wednesday, Friday 12:00-12:50  E-330  Ms. Noureen Khokhar
Section D  Monday, Wednesday, Friday 10:00-10:50  E-328  Dr. Ashfaq A. Virk
Section E  Monday, Wednesday, Friday 09:00-09:50  E-330  Dr. Ghafoor S. Qasim
Section F  Monday, Wednesday, Friday 11:00-11:50  E-330  Dr. Muhamamd Tahir
Section G  Monday, Wednesday, Friday 01:00-01:50  E-330  Ms. Noureen Khokhar
Section H  Monday, Wednesday, Friday 10:00-10:50  E-330  Dr. Muhamamd Tahir
Section J  Monday, Wednesday, Friday 08:00-08:50  E-330  Dr. Ghafoor S. Qasim
Section K  Monday, Wednesday, Friday 09:00-09:50  E-328  Dr. Muhamamd Tahir
Section L  Monday, Wednesday, Friday 12:00-12:50  E-328  TBD
Section M  Tuesday, Thursday 02:00-03:15  E-328  Ms. Noureen Khokhar
Section O  Tuesday, Thursday 02:00-03:15  E-330  Mr. Ateeq Anwer

URDU 104: A selection of Urdu Prose (3 credits)
Letters: Ghalib; Essays: Sir Syed Ahmad Khan, Wazir Agha, Mushtaq Ahmad Yousfi; Short Story: Prem Chand; Character Sketch: M. Abdul Haque; Extract of Travelogue; Begum Akhtar Raiz-ud-Din.

Section A  Tuesday, Thursday 08:00-09:15  E-328  Dr. Ali M Khan

URDU 201: A brief History of Urdu language and Literature (3 credits)
Introduction to Urdu language and theories regarding its origin; phases and trends in Urdu literature up till the 20th Century: Urdu in Delhi and Lucknow; evolution of Urdu Prose.

Section A  Tuesday, Thursday 09:30-10:45  E-328  Dr. Ali M Khan

URDU 202: Classical Urdu Poetry (3 credits)

Section A  Tuesday, Thursday 02:00-03:15  E-328  Dr. Ashfaq A. Virk

URDU 203: Introduction to Satire & Humor in Urdu Literature. (3 Credits)
Introduction to Satire & Humor in Urdu Literature, difference between Satire & Humor, a brief history and importance of Satire & Humor,
Prose: Patras Bukhari, Ibn e Insha, Mushtaq Ahmad Yousufi, Col. Muhammad Khan.
Poetry: Akbar Ilahabadi, Syed Muhammad Jafri, Syed Zameer Jafri, Anwar Masood

Section A  Tuesday, Thursday 11:00-12:15  E-328  Dr. Ashfaq Virk

URDU 208: Script Writing in Urdu (3 credits)
Documentary writing: Program scripts, Journalistic scripts, Business scripts, Drama and film scripts.

Section A  Tuesday, Thursday 12:30-01:45  E-330  Ms. Noureen Khokhar
URDU 301: Modern Urdu Poetry (3 credits)

Section A  Tuesday, Thursday 12:00-01:15  E-328  TBD

URDU 302: Criticism (3 credits)
Basic principles and definition of criticism; Oriental criticism; Western criticism; Practical criticism.

Section A  Tuesday, Thursday 11:00-12:15  E-330  Dr. Muhammad Tahir

URDU 405: Principles of Literary Research (3 credits)
Definition of importance of literary research; evolution of Urdu research uptil Aab-e-Hayat by M. Hussain Azad; principle and resources of research; terminology and preparation of research paper

Section A  Tuesday, Thursday 09:00-10:45  E-330  Dr. Ghafoor S. Qasim

URDU 406: Practical Research (3 credits)
A research paper of 50-100 pages on any topic regarding Urdu Language and Literature.

Section A  Dr. Ghafoor S. Qasim
COURSES/SECTIONS CANCELLED (2011FA)

- BIOL 101 A
- BIOL 301 A
- BIOL 302 A
- ENVR 306 A
- CHEM 220/MATH 211
- CHEM 480
- COMP 111 B
- COMP 311 B
- EDUC 120 B
- LANG 100 B, C, D, E
- LANG 110 C, D, H, J, K
- MATH 303
- GEOG 133 B
- GEOG 231 A
- MCOM 100 E, G, P
- CSCS 452 A
- CRST 354
- MATH 309
- MATH 310
- ECON 101 D, E