NOTE: It is the student’s responsibility to read the atlas carefully. Not knowing this information is *NOT* an excuse. Failure to meet the prerequisites will result in withdrawal from the class.

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<tbody>
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<td>1.</td>
<td>Biological Sciences ..........</td>
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<td>3.</td>
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<td>Economics ....................</td>
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<td>6.</td>
<td>Education ....................</td>
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<td>English .....................</td>
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<td>Geography ...................</td>
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<td>10.</td>
<td>Health &amp; Physical Education ..</td>
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<td>11.</td>
<td>History and Pakistan Studies ..</td>
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<td>Mass Communication ...........</td>
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<td>Physics .....................</td>
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<td>Psychology ...................</td>
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<td>19.</td>
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<td>Statistics ...................</td>
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<td>21.</td>
<td>Urdu .........................</td>
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## General Education 2011-12 onwards

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<tr>
<th>Humanities</th>
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<td>1A. ISLM 101</td>
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<td>1B. CRST 152</td>
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<td>3. ENGL 101 Unless Exempt or replaced</td>
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<td>4. ENGL 103</td>
<td>Must Take all 4</td>
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<td>5. URDU 101</td>
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6th Course from below

| 1. English | 1 |
| 2. History | 1 |
| 3. Mass Communications | 1 |
| 4. Philosophy | 1 |
| 5. Urdu | 1 |
| 6. Christian Studies | 1 |
| 7. Islamic Studies | 1 |

## Social & Behavioural Sciences

<table>
<thead>
<tr>
<th>3 Courses</th>
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<tbody>
<tr>
<td>1. Pakistan Studies PKST 101</td>
<td>Must Take this</td>
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</table>

2nd and 3rd Courses from below

| 2 | 2 |
| 1. Education | 1 |
| 2. Political Science | 2 |
| 3. Economics | 2 |
| 4. Geography | 2 |
| 5. Psychology | 2 |
| 6. Sociology | 2 |

## Science and Mathematics

<table>
<thead>
<tr>
<th>5 Courses</th>
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<td>1A. Biology</td>
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<tr>
<td>1B. Chemistry</td>
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<td>1C. Physics</td>
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<tr>
<td>2. Math</td>
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<tr>
<td>3. Computer Science</td>
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5th Course from Below

| 1 | 1 |
| 1. Botany | 1 |
| 2. Zoology | 1 |
| 3. Biotechnology | 1 |
| 4. Biological Sciences | 1 |
| 5. Environmental Sciences | 1 |
| 6. Chemistry | 1 |
| 7. Philosophy | 1 |
| 8. Physics | 1 |
| 9. Mathematics | 1 |
| 10. Computer Science | 1 |
| 11. Information Technology | 1 |
| 12. Statistics | 1 |

## Foundations of University Education

<table>
<thead>
<tr>
<th>1 Course</th>
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<td>1. UNIV 100</td>
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## General Education on Old Catalogs 2008-2010

<table>
<thead>
<tr>
<th>Category</th>
<th>Courses</th>
<th>Credit Hours</th>
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<tr>
<td><strong>1. Humanities</strong></td>
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<td>1. ISLM 101</td>
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<td>1. Pakistan Studies PKST 101</td>
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<td>2nd and 3rd Course from below</td>
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<td>1. Education</td>
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<td>7. Pakistan Studies</td>
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<td><strong>3. Physical &amp; Natural Sciences</strong></td>
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<td><strong>4. Mathematics and Computer Sc./ IT</strong></td>
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</table>
BIOLOGICAL SCIENCES

BIOL 100: Introductory Biology (4 credits)
Only for students who have not studied Biology in higher secondary school or A level or equivalent
Basic concepts of Biology including cell as a building block, its function, reproduction, genetics and inheritance, basic concepts in evolution, ecology and principles of living systems, an overview of modern Biology and its importance in everyday life.

Section A  Monday, Wednesday, Friday 09:00-09:50  S-424  Dr. A. S. Khan
LAB  Tuesday 02:00-03:50  S-329
Section B  Monday, Wednesday, Friday 12:00-12:50  S-424  Dr. H. Butt
LAB  Tuesday 02:00-03:50  S-331
Section C  Tuesday, Thursday 08:00-09:15  S-424  Dr. H. Saeed
LAB  Tuesday 11:00-12:50  S-321
Section D  Tuesday, Thursday 02:00-03:15  S-416  Dr. F. Iqbal
LAB  Tuesday 11:00-12:50  S-321
Section E  Monday, Wednesday, Friday 10:00-10:50  S-425  Dr. H. Saeed
LAB  Wednesday 02:00-03:50  S-341
Section F  Tuesday, Thursday 09:30-10:45  S-424  Dr. W. George
LAB  Tuesday 11:00-12:50  S-341
Section G  Monday, Wednesday, Friday 02:00-02:50  S-410  U. Mubeen
LAB  Monday 10:00-11:50  S-321
Section H  Tuesday, Thursday 02:00-03:15  S-410  U. Mubeen
LAB  Thursday 08:00-09:50  S-331

BIOL 102: Introductory Plant Biology (4 credits)
Only for students who have studied biology in higher secondary school/A level or equivalent
Structure-function relationship of plants, basic principles of genetics and molecular genetics and Biotechnology and its use in modifying plants. Ecosystems, environmental issues, relevance of flowering plants in human life.

Section A  Monday, Wednesday, Friday 10:00-10:50  S-416  Dr. R. Siddiqi
LAB  Tuesday 11:00-12:50  S-331
Section B  Monday, Wednesday, Friday 12:00-12:50  S-425  Dr. F. Iqbal
LAB  Monday 08:00-09:50  S-331

BIOL 105: General Zoology (4 credits)
Only for students who have studied Biology in higher secondary school/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 11:00-11:50  S-424  Dr. K. Z. Rasib
LAB  Wednesday 08:00-09:50  S-329
BIOL 201: Cell Biology  
(3 credits)  
Ultra structure of cell, the cell membrane, cytoskeleton, nucleus, mitochondria, chloroplast, ribosome, dictyosome, vacuole, microbodies, and cell surface. Protein synthesis and secretion, chromosomal aberration, mitosis, meiosis and cell cycle regulation will also be discussed.

Section A  
Tuesday, Thursday 12:30-01:20  
S-417  
Dr. A. Maqbool

LAB  
Monday 02:00-03:50  
S-331

Section B  
Monday, Wednesday 08:00-08:50  
S-417  
Dr. M. Mohsin

LAB  
Friday 08:00-09:50  
S-321

BIOL 203: General Genetics  
(3 credits)  
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 and problems related to the theoretical course.

Section A  
Tuesday, Thursday 02:00-02:50  
S-417  
Dr. M. Irfan

LAB  
Wednesday 02:00-03:50  
S-321

Section B  
Monday, Wednesday 08:00-08:50  
S-424  
Dr. A. Maqbool

LAB  
Friday 08:00-09:50  
S-431

BIOL 204: Diversity in Animals  
(4 credits)  
Classification and phylogenetic relationship of various groups of animals, with an overview of all major groups of invertebrates and chordates (general survey of animal kingdom).

Section A  
Monday, Wednesday, Friday 12:00-12:50  
S-417  
Dr. K. Z. Rasib

LAB  
Tuesday 02:00-03:50  
S-341

BIOL 205: Biostatistics  
(3 credits)  
Introduction to statistics including mean, mode, median, standard error 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-431  
Dr. S. Butt

LAB  
Wednesday 08:00-09:50  
S-321

BIOL 211: Biosafety and Biosecurity  
(3 credits)  
Prerequisite: BIOL 102 or BIOL 105 or Biology in Intermediate  
Overview of biosecurity / biosafety and the practices, equipment and facilities for the safe and secure handling of dangerous pathogens in a laboratory setting.

Section A  
Monday, Wednesday 08:00-08:50  
S-410  
Dr. N. Anwar

LAB  
Friday 08:00-09:50  
S-341

Section B  
Tuesday, Thursday 08:00-08:50  
S-410  
Dr. H. Butt

LAB  
Tuesday 02:00-03:50  
S-329
BIOL 301: Plant Form and Function (3 credits)
Analysis of plant structure and function, overview of plant organization from cell to organismic level, and appreciation of physiological processes as they relate to the plant survival and adaptability.

Section A  Monday, Wednesday 11:00-11:50  S-331  Dr. R. Siddiqi
LAB     Friday 08:00-09:50  S-331

BIOL 302: Animal Form and Function (4 credits)
Comparison of animals with one another. Similarities and differences among the major phyla of animal kingdom. External and internal variations in organs and systems; adaptations that enable them to live successfully in their respective environments.

Section A  Monday, Wednesday, Friday 10:00-10:50  S-410  Dr. W. George
LAB     Wednesday 08:00-09:50  S-341

BIOL 303: General Ecology (3 credits)
Basic principles of Ecology such as interaction of organisms with their environment, species and population dynamics, community structure and human interactions with natural populations and ecosystems. Emphasis on local environment, flora and fauna.

Section A  Tuesday, Thursday 09:30-10:20  S-410  Dr. H. Saeed
LAB     Monday 08:00-09:50  S-321

BIOL 313: Biochemistry (4 credits)
Prerequisite for non-science students: CHEM 110
Understanding of organic structure of living systems including structure, specific roles of carbohydrates, lipids, amino acids, proteins and nucleic acids. General characteristics and properties of enzymes including enzyme kinetics.

Section A  Tuesday, Thursday 11:00-12:15  S-410  Dr. H. Butt
LAB     Thursday 02:00-03:50  S-329
Section B  Monday, Wednesday, Friday 09:00-09:50  S-425  Dr. M. W. Hussain
LAB     Monday 10:00-11:50  S-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  Tuesday, Thursday 11:00-11:50  S-417  Dr. S. Mehnaz
LAB     Tuesday 02:00-03:50  S-331

BIOL 473: Industrial Microbiology (4 credits)
Prerequisite: BIOL 315
Attributes of microorganisms and the application of modern techniques in the applied areas of industrial and environmental microbiology, applications of microorganisms in the industrial production of foods and other useful products.

Section A  Monday, Wednesday, Friday 12:00-12:50  S-416  Dr. S. Butt
LAB     Monday 02:00-03:50  S-321
BIOT 201: Introduction to biotechnology  
Brief history of biotechnology, different aspects of biotechnology and its future development as a cornerstone in human welfare.

Section A  
Monday, Wednesday 10:00-10:50  
LAB  
Wednesday 08:00-09:50  
S-417  
Dr. M. Irfan

Section B  
Tuesday, Thursday 12:30-01:20  
LAB  
Thursday 02:00-03:50  
S-424  
Dr. M. Mohsin

BIOT 202: Protoplast, Cell & Tissue Culture  

Section A  
Monday, Wednesday, Friday 11:00-11:50  
LAB  
Monday 08:00-09:50  
S-416  
Dr. H. Butt

Section B  
Tuesday, Thursday 11:00-12:15  
LAB  
Tuesday 08:00-09:50  
S-424  
Dr. M. Mohsin

BIOT 301: Analytical Techniques in Biology  
Fundamental techniques in Biological Sciences involving vast array of methodologies that a biologist requires to step in any area of research. Various types of Chromatographies, Gel Electrophoresis, Staining procedures, Spectrophotometry and Microtomy.

Section A  
Monday, Wednesday 09:00-09:50  
LAB  
Friday 08:00-09:50  
S-410  
Dr. S. Mehanz

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

Section A  
Wednesday, Friday 08:00-08:50  
LAB  
Monday 08:00-09:50  
S-416  
Dr. L. Johnson

BIOT 313: Molecular Biology  
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  
Monday, Wednesday, Friday 10:00-10:50  
LAB  
Monday 02:00-03:50  
S-424  
Dr. S. Mehnaz

Section B  
Tuesday, Thursday 11:00-12:15  
LAB  
Thursday 08:00-09:50  
S-425  
Dr. N. Anwar
BIOT 314: Bioenergetics and Metabolism  (3 credits)
Prerequisites: BIOL 313
Intermediate metabolism in biological systems. Pathways of breakdown and synthesis of biological molecules such as carbohydrates, lipids and nitrogenous compounds, thermodynamics of the reactions and the regulatory mechanism of pathways.

Section A  Monday, Wednesday 12:00-12:50  S-410  Dr. A. S. Khan
LAB  Wednesday 02:00-03:50  S-431

BIOT 315: Genomics and Tools and Bioinformatics  (4 credits)
Prerequisites: BIOT 313
Introduction to Genomics, techniques involved in studying of genomes i.e. manual and automated DNA sequencing, genotyping, mapping and assembling a genome, an introduction to pharmacogenomics, personal genomics, SNP, RFPL, microstellite DNA Markers, brief history and introduction of bioinformatics, use of online data banks for nucleic acids and protein analysis, prediction of attributes of proteins and nucleic acids on the basis of tabulated data, DNA microarray, proteomics and survey of a genome of a model organism using bioinformatics tools.

Section A  Monday, Wednesday, Friday 11:00-11:50  S-410  Dr. M. Irfan
LAB  Friday 02:00-03:50  S-321

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  Tuesday, Thursday 08:00-09:15  S-417  Dr. W. George
LAB  Thursday 02:00-03:50  S-341

BIOT 408: Recombinant DNA Technology  (4 credits)
Basic genetic engineering experiments, 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 gene therapy.

Section A  Tuesday, Thursday 09:30-10:45  S-425  Dr. A. Maqbool
LAB  Tuesday 02:00-03:50  S-321
**BIOT 411: Agriculture 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 micro-organisms 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 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 and biofuels.

*Section A*  
Tuesday, Thursday 12:30-01:45  
S-008  
Dr. K. A. Malik

**BTNY 403: Plant Physiology**  
(3 credits)  
Prerequisite for non-science students: BIOL 301  
Application of physical and biological principles; understanding of plant processes involved in assimilation, metabolism and regulation of growth and development.

*Section A*  
Tuesday, Thursday 12:30-01:20  
S-410  
Dr. A. S. Khan  
*LAB*  
Thursday 02:00-03:50  
S-321

**BTNY 463: Palaeopalynology**  
(4 credits)  
Prerequisite for non-Biology students: BIOL 202  
Introduction, scope and importance with emphasis on geological time scale. Rock types, polymorphs in oil and gas exploration, geochronology, vegetational analysis from pollen data, stratogeographic leak, post depositional alteration of palynomorphs, coal formation and classification of Gonwandaland palynofloristics.

*Section A*  
Tuesday, Thursday 09:30-10:45  
S-417  
Dr. F. Iqbal  
*LAB*  
Wednesday 02:00-03:50  
S-331

**ENVR 251: Living Green**  
(3 credits)  
Key environmental issues such as population explosion, air water, food, sanitation and climate change etc, remedies at local and individual level such as sustainable health, sustainable home, sustainable work place and sustainable energy future.

*Section A*  
Tuesday, Thursday 11:00-11:50  
S-416  
U. Mubeen  
*LAB*  
Tuesday 08:00-09:50  
S-331

**ENVR 406: Climate, Past, Present and Future**  
(3 credits)  
Climate-definition, early climates, factors controlling the climates, major climatic turnovers during Paleozoic, Mesozoic and Cenozoic eras, Pleistocene ice age, sub recent and recent climate, tropical, temperate and arctic climates, Palaeomagnetic calendar, role of climatic factors in shaping, generating and controlling evolutionary forces, major climatic upheavals, in the subcontinent and their signatures in the out crops, future climatic trends.

*Section A*  
Monday, Wednesday 11:00-11:50  
S-425  
Dr. F. Iqbal  
*LAB*  
Friday 10:00-11:50  
S-331
ZOOL 303: Animal Physiology and Endocrinology  (4 credits)
Intracellular organization and their integration, feeding, digestion and metabolism, internal transport and gas exchanges, mechanism of contractile system and movement, osmoregulation and disposal of metabolic wastes, neural signaling and regulation, mechanism of sensory receptors, hormone regulation and reproduction, development, growth and social behavior.

**Section A**
Monday, Wednesday, Friday 11:00-11:50  S-417  Dr. S. Butt
**LAB**  Friday 02:00-03:50  S-341

ZOOL 408: Entomology  (4 credits)
*Prerequisite: BIOL 302*
Origin of insects, morphology anatomy, natural habitat, social behavior, appendages, life histories and economic importance. Biological control of pest.

**Section A**
Tuesday, Thursday 12:30-01:45  S-425  Dr. K. Z. Rasib
**LAB**  Monday 02:00-03:50  S-341
BUSINESS

BUSN 121: Microeconomics (3 credits)
Fundamentals of economics including price theory and applications, industry and market structure, equilibrium analysis and welfare economics.

Section A & B Monday, Wednesday 09:30-10:45 E-025
Dr. M. Murphy / Dr. J. B. Jahangir

BUSN 160: Management Communications (3 credits)
Introduction to verbal and written communication theory and practice, with focus on individual oral and written skills in letter and memo writing use of emails, presentations and preparing reports.

Section A & B Tuesday, Thursday 12:30-01:45 E-025 Z. Bhutta

BUSN 225: Economic Applications for Business (3 credits)
Prerequisite: BUSN 121
Fiscal, monetary and regulatory policy frameworks including deregulation and liberalization from a perspective of application of theory to real world practices.

Section A Tuesday, Thursday 08:00-09:15 E-104 Dr. M. Murphy / Dr. J. B. Jahangir
Section B Tuesday, Thursday 09:30-10:45 E-104 Dr. M. Murphy / Dr. J. B. Jahangir

BUSN 230: Entrepreneurship (3 credits)
Prerequisite: BUSN 170
Entrepreneurial skills for successful formation and growth of companies including topics like team formation, concept generation, design thinking, marketing mix, etc.

Section A & B Tuesday, Thursday 11:00-12:15 E-025 M. Amin

BUSN 250: Individual & Group Dynamics (3 credits)
Prerequisite: BUSN 170
Impact of individuals, groups and structures on behavior within a formal organizational context and applies knowledge to improve the effectiveness of the organization. Concepts include leadership skills, team structures, managing interpersonal relationships and conflicts.

Section A Monday, Wednesday 09:30-10:45 E-104 Dr. A. Chughtai
Section B Monday, Wednesday 11:00-12:15 E-104 Dr. A. Chughtai
**BUSN 305: Corporate Governance**  
*(Accounting & Finance specialization only)*  
(3 credits)  
Prerequisite: BUSN 201  
Governance in corporations, spanning issues related to regulation, fiduciary responsibilities, agency problems and the structures and systems used to improve governance in organizations.

**Section A**  
Tuesday 12:30-01:45 & 02:00-03:15  
E-105  
S. Hamid

**BUSN 321: Financial Management I**  
(3 credits)  
Prerequisite: BUSN 201  
Tools, techniques and concepts of finance, such as financial analysis, financing options, capital budgeting, risk analysis and the role of financial markets and intermediaries.

**Section A**  
Tuesday, Thursday 11:00-12:15  
E-104  
TBD

**BUSN 322: Financial Management II**  
*(Accounting & Finance specialization only)*  
(3 credits)  
Prerequisite: BUSN 321  
Corporate finance, dividend policy, capital structure, international financial instruments, debt and equity valuation and the role, of hybrid securities.

**Section A**  
Monday, Wednesday 08:00-09:15  
E-103  
Dr. B. A. Khan

**BUSN 360: Operations & Project Management I**  
(3 credits)  
Prerequisite: BUSN 170  
Evaluations and implementation of projects within organizations, management of operational structures and systems to achieve organizational goals and objectives.

**Section A**  
Tuesday, Thursday 09:30-10:45  
E-103  
M. S. Bilal

**BUSN 361: Operational Excellence**  
*(Operation Management specialization only)*  
(3 credits)  
Prerequisite: BUSN 360  
Application of concepts and skills in a productions-related environment resulting in better work flow.

**Section A**  
Monday, Wednesday 11:00-12:15  
E-103  
M. Saleem

**BUSN 368: Productivity & Plant Management**  
*(Operation Management specialization only)*  
(3 credits)  
Prerequisite: BUSN 360  
Improvement in efficiency of manufacturing processes, optimal utilization of plant and equipment with the objective of improving profitability.

**Section A**  
Tuesday, Thursday 11:00-12:15  
E-103  
M. S. Bilal
BUSN 370: Management Information Systems (3 credits)
Prerequisite: BUSN 170 & For Junior and Senior Year students only
business and accounting applications of MIS, techniques for evaluating and implementing various management information system in an organization.

Section A  Monday, Wednesday 02:00-03:15  E-103  S. Mazhar
Section B  Monday, Wednesday 03:30-04:45  E-103  S. Mazhar

BUSN 382: Marketing Communications (Marketing & Sales specialization only) (3 credits)
Prerequisite: BUSN 280
Marketing channels, such as advertising and promotion management and means to promote and project products and brands.

Section A  Tuesday, Thursday 03:30-04:45  E-103  I. Nasir

BUSN 385: Consumer Behavior (Marketing & Sales specialization only) (3 credits)
Prerequisite: BUSN 280
Current trends in the world marketing its challenges and analysis, development of effective marketing programs and strategies.

Section A  Tuesday, Thursday 02:00-03:15  E-103  I. Nasir

BUSN 401: Principles of Auditing (Accounting & Finance specialization Only) (3 credits)
Prerequisite: BUSN 301
Fundamentals of auditing, issues of ethics, role of audit firms in conducting audits.

Section A  Tuesday, Thursday 02:00-03:15  E-104  B. H. Awan, ACA

BUSN 469: Project Management Processes (Operation Management specialization only) (3 credits)
Prerequisite: BUSN 361
Tools required to coordinate different activities which result in timely completion of projects.

Section A  Monday, Wednesday 12:30-01:45  E-103  Dr. F. A. Malik

BUSN 485: E-Business (Marketing & Sales specialization only) (3 credits)
Prerequisite: BUSN 380
Application of technology in the business world, electronic media and new channels for developing businesses, promotion of products and services.

Section A  Tuesday, Thursday 03:30-04:45  E-104  S. Mazhar
BUSN 490: Analysis of Institutions (3 credits)
Prerequisite: For Senior year Business Student only
Analysis of institutions in the public, private and not-for-profit sectors which have shaped the economic and corporate environment of Pakistan, economic history, public policy and interaction of different institutions that has shaped Pakistan as country.

Section A  Tuesday, Thursday 09:30-10:45  E-025  A. Naweed

BUSN 498: Business Strategy (3 credits)
Prerequisite: For Senior year Business Student only
This is the capstone course in the program: theories and concepts of strategy, real world problems and application of theory to practice through projects.

Section A  Monday, Wednesday 11:00-12:15  E-025  M. Amin
CHEMISTRY

CHEM 100: Introduction to Chemistry (3+1 credits)
Open for those students who have not taken chemistry at Intermediate or A. Level Chemistry as a basic science, matter and states of matter, elements and periodicity, atomic structure, concept of mole and elementary stoichionmetric calculations, acids and basis, elementary redox reactions and electrochemical cells, organic functional groups and major classes of organic compounds and their importance, and environmental aspects of chemistry.

Section A  Monday, Wednesday, Friday 08:00-08:50  S-215  Dr. M. N. Asghar
Lab       Tuesday 08:00-09:30       S-148
Section B  Monday, Wednesday, Friday 11:00-11:50  S-216  S. Azeem
Lab       Tuesday 11:00-12:30       S-148

CHEM 150: Introduction to Inorganic Chemistry (3+1 credits)
Prerequisite: F.Sc. or A-Level Chemistry
Various theories of bonding including valence bond theory, molecular orbital theory, Werner’s theory, crystal/ligand field theory, thee center bonds, bonding theory of metal and intermetallic compounds, bonding in electron deficient compounds, hydrogen bonding, shapes of molecules (VSEPR model).

Section A  Tuesday, Thursday 12:30-01:45  S-216  S. Azeem
Lab       Thursday 11:00-12:30       S-138
Section B  Monday, Wednesday, Friday 02:00-02:50  S-215  Dr. M. Al Rashida
Lab       Tuesday 02:00-03:45       S-138
Section C  Monday, Wednesday, Friday 10:00-10:50  S-116  Dr. M. N. Asghar
Lab       Tuesday 11:00-12:30       S-138

CHEM 160: Introduction to Organic and Biochemistry (3+1 credits)
Prerequisite: F.Sc. or A-Level Chemistry
Bonding and structure of organic compounds, study of hydrocarbons including additions to multiple bonds and substitution reactions of benzene, petroleum products, chemistry of food and its components including carbohydrates, proteins, lipids, nutrition and caloric intake.

Section A  Monday, Wednesday, Friday 08:00-08:50  S-216  Dr. S. Jelani
Lab       Tuesday 08:00-09:30       S-135
**CHEM 170: Introductory to Physical Chemistry** (3+1 credits)
Prerequisite: F.Sc. or A-Level Chemistry

*Section A*  
Monday, Wednesday, Friday 12:00-12:50  
**S-216**  
Dr. A. M. Khan

*Lab*  
Friday 02:00-03:45  
**S-148**

**CHEM 250: Chemistry of Main Groups Elements** (3+1 credits)
Prerequisite: F.Sc. or A-Level Chemistry
Structural characteristics, reactivities, simple compounds, coordination compounds, metal crowns, organometallic compounds of s and p block elements, noble gases and their compounds, interhalogens, pseudohalogenes and polyhalides, Anomalies in periodicity, the use of d-orbitals by non-metals, reactivity and d-orbital participation, Pπ-dπ bonds, multicenter bonding in electron deficient molecules, three-centre-two electron and three center fur electron bonds.

*Section A*  
Monday, Wednesday, Friday 09:00-09:50  
**S-215**  
Dr. M. Al Rashida

*Lab*  
Tuesday 08:00-09:30  
**S-138**

**CHEM 261: Organic Chemistry I** (3+1 credits)
Prerequisite: CHEM 160 or CHEM 260
Reaction mechanisms including free radical, eletrophillic and nucleophillic substitution addition and elimination reaction; chemistry of alkyl halides, amines and organometallic compounds, catalytic reactions and their importance.

*Section A*  
Monday, Wednesday, Friday 10:00-10:50  
**S-215**  
Dr. M. I. Aujla

*Lab*  
Thursday 08:00-09:30  
**S-135**

**CHEM 270: Thermodynamics and Equilibrium** (3+1 credits)
Prerequisite: CHEM 150 or CHEM 170
Chemical Thermodynamics: Second and Third laws of thermodynamics, concepts of entropy, Helmholtz and Gibbs Energy functions, Spontaneity and equilibrium, chemical potential system of variable composition, interrelationship of thermodynamic functions. Pleaser equilibrium: Clapeyron equation, solid-liquid, liquid-gas, solid gas equilibria, Please diagrams, Phase rule. Solutions: Ideal and non-ideal solutions, Raoul:t:s law, Colligative properties, Osmotic pressure, depression of freezing point elevation of boiling point

*Section A*  
Tuesday, Thursday 11:00-12:15  
**S-216**  
Dr. A. Y. Khan

*Lab*  
Friday 08:00-09:45  
**S-148**
CHEM 271: Quantum Chemistry (3 credits)
Prerequisite: CHEM 150 or CHEM 170

Section A Monday, Wednesday, Friday 10:00-10:50 S-216 Dr. A. Y. Khan
Lab Thursday 08:00-09:30 S-148

CHEM 311: Fundamental Analytical Chemistry (3+1 credits)
Open to Junior and Senior Year Students
Gravimetric and volumetric methods of analysis including buffers, complexometric titrations, redox titration, non-aqueous titrations, Karl-Fischer titrations, UV / VIS spectroscopic analysis, IR Spectroscopy, treatment of measurement errors; usage and handling of standards, sampling precision, accuracy, signal-to-noise ratio, limits of detection and quantization, statistical evaluation of data; quality control and quality assurance.

Section A Tuesday, Thursday 08:00-09:15 S-216 S. Azeem
Lab Tuesday 09:30-11:00 S-138

CHEM 320: Industrial Chemistry (3+1 credits)
Open to Junior and Senior Year Students
Efficiency and yield, common chemical industries with special reference to Pakistan including cement, surfactants, paper and pulp, glass and ceramics, leathers, metallurgies of important metals, liquids crystals and inorganic polymers. Environmental industrial impacts and industrial environmental management.

Section A Monday, Wednesday, Friday 12:00-12:50 S-215 TBD
Lab Friday 02:00-03:45 S-138

CHEM 350: Coordination Chemistry (3+1 credits)
Prerequisite: CHEM 150 or CHEM 250
Historical background of coordination compounds, nomenclature and stability, geometry of complexes having coordination numbers 2 to 9, explanation of optical and magnetic properties of coordination compounds., Jahn-Teller effect, isomerism and stereochemistry, stabilities of coordination compounds, characterization and applications of coordination compounds, metal based drugs, metal carbonyls and nitrosyls, organic reagents used in inorganic analysis.

Section A Monday, Wednesday, Friday 11:00-11:50 S-215 Dr. M. S. Iqbal
Lab Thursday 12:30-02:00 S-138

CHEM 361: Organic Chemistry II (3+1 credits)
Prerequisite: CHEM 260 or 261
Study of carbonyl compounds including aldehydes, ketones, carboxylic acids, esters, amides, enolates and conjugate additions. Chemistry of vegetable oils and waxes.

Section A Tuesday, Thursday 09:30-10:45 S-215 Dr. D. Ahmed
Lab Wednesday 08:00-09:45 S-135
CHEM 413: Instrumental Methods of Analysis (3+1 credits)
Prerequisite: CHEM 311 or CHEM 370
Atomic spectroscopic techniques: atomic absorption and emission techniques. Thermal analysis: TGA, DTA, DSC. Chromatography: introduction to separation techniques, solvent extraction, chromatography (Paper, TLC, HPLC, GC, GPC) and electrophoresis. Hyphenated techniques: gas chromatography-mass spectrometry (GC-MS), liquid chromatography-mass spectrometry (LC-MS), MS-MS, LC-FTIR; inductively coupled plasmas-mass spectrometry, matrix-assisted laser desorption / ionization-time of flight (MALDI-TOF) mass spectrometry, tandem mass spectrometry, ion trap mass spectrometry, other topics of interest. Nuclear techniques: Neutron activation analysis, nuclear quadrupole resonance, isotope dilution methods, isotope ratio mass spectrometry, mossbuer spectroscopy, radio-immuno assay, x-ray techniques.

Section A  Tuesday, Thursday 11:00-12:15  S-116  Dr. M. Al Rashida
Lab  Monday 10:00-11:45  S-138

CHEM 430: Chemical Principles in Biology (3+1 credits)
Prerequisite: CHEM 310 or CHEM 330
Interconnections between chemistry biology and underlying chemical logic of biomolecules and metabolic pathways, genes and genomics.

Section A  Monday, Wednesday, Friday 02:00-02:50  S-116  Dr. G. Johnson
Lab  Tuesday 02:00-03:45  S-135

CHEM 440: Environmental Chemistry (3+1 credits)
Prerequisite: Open for Juniors And Seniors
Introduction to environment, air pollution, water pollution, noise pollution, solid waste pollution and environment, ecotoxicology, hazardous waste and its management.

Section A  Tuesday, Thursday 11:00-12:15  S-215  Dr. M. I. Aujla
Lab  Friday 08:00-09:30  S-135

CHEM 442: Green Chemistry (3+1 credits)
Prerequisite: Open for Juniors And Seniors
Green Chemistry, principles, evaluating materials, feed stocks and starting materials, types of reactions in chemical transformation, evaluation of methods to design safer chemicals, green chemistry and future trends.

Section A  Tuesday, Thursday 02:00-03:15  S-215  TBD
Lab  Wednesday 02:00-03:45  S-138

CHEM 450: Advanced Inorganic Chemistry (3+1 credits)
Prerequisite: CHEM 250 or CHEM 351
Non-aqueous solvents, chemistry of carbonyl and nitrosyl compounds, lanthanides and actinides.

Section A  Monday, Wednesday, Friday 09:00-09:50  S-216  Dr. M. S. Iqbal
Lab  Thursday 08:00-09:30  S-138
CHEM 453: Chemical Applications of Group Theory (3 credits)
Prerequisite: CHEM 250 or CHEM 350
Symmetry, symmetry elements and operations, point groups, matrices, group representation and character tables, reducible and irreducible representation, applications of group theory in bonding crystal field theory and IR etc.

Section A  Tuesday, Thursday 09:30-10:45  S-216  Dr. C. Munir

CHEM 465: Natural Products and Medicinal Chemistry (3+1 credits)
Prerequisite: CHEM 330 or CHEM 360 or Equivalent
Introduction to natural products and their medicinal importance, biosynthesis of terpenoids, alkaloids, flavonoids and steroids, total and partial synthesis of some representative natural products, chemistry of perfumes and aromatherapy, drug discovery.

Section A  Monday, Wednesday, Friday 12:00-12:50  S-116  Dr. S. Jelani
Lab  Friday 02:00-03:45  S-135

CHEM 470: Polymer Chemistry (3+1 credits)
Prerequisite: CHEM 261 or CHEM 370

Section A  Tuesday, Thursday 09:30-10:45  S-116  TBD
Lab  Monday 08:00-09:45  S-138

CHEM 473: Surface and Solid State Chemistry (3+1 credits)
Prerequisite: CHEM 270 or CHEM 370
Crystal structures, unit cells and Miller indices, X-ray diffraction, adsorption and desorption, Langmuir and BET isotherms, surface reactions and reactivity, ultrathin films and interfaces, techniques for the study of surfaces.

Section A  Tuesday, Thursday 02:00-03:15  S-216  Dr. A. M. Khan
Lab  Wednesday 02:00-03:45  S-148

ENVR 303: Environmental Analytical techniques (3 credits)
Instrumental methods of chemical and analysis in an overall context of sampling and evaluating sources of pollution, Analysis of contaminants both qualitatively and quantitatively in air, water, soil or plant materials

Section A  Monday, Wednesday 09:00-09:50  S-116  Dr. M. I. Aujla
Lab:  Friday 10:00-11:45  S-135
COMPUTER SCIENCE / IT

COMP 102: Programming I  (3 credits, (2+2)
Basic skills of problem solving and programming, problem analysis, algorithm design, program development and testing, structured design techniques, object-oriented thought process and basic tool.

Section A  Monday, Wednesday 02:00-03:50  S-218  Dr. I. H. Shah

COMP 111: Programming II  (3 credits) (2+2)
Prerequisite: COMP 102
Classes, Inheritance, class hierarchy, polymorphism, basic data structures, analysis of algorithms, basic searching and sorting techniques.

Section A  Monday, Wednesday 11:00-12:50  S-219  Dr. N. Ashraf
Section B  Monday, Wednesday 02:00-03:50  S-219  Dr. N. Ashraf
Section C  Tuesday, Thursday 02:00-03:50  S-218  S. Anwar
Section D  Monday, Wednesday 09:00-10:50  S-218  TBD

COMP 113: Discrete Mathematics  (3 credits)
Prerequisite: MATH 101 or A-Level or Intermediate Mathematics
Foundations of discrete mathematics as they apply to Computer Science, understanding and appreciation of the finite nature inherent in most Computer Science problems and structures through study of Logic, Set Theory, Functions, Recursive relations, combinatorial reasoning, iterative procedures, predicate, calculus, tree and graph structures.

Section A  Monday, Wednesday, Friday 09:00-09:50  S-316  TBD
Section B  Monday, Wednesday, Friday 10:00-10:50  S-316  TBD

COMP 200: Data Structures and Algorithms  (3 credits (2+2)
Prerequisite: COMP 111, COMP 113
More sophisticated data structures and algorithms required to manipulate them, selection or construction of suitable data structures for a wide range of problems, analysis of the efficiency of chosen solutions, standard problems such as sorting and searching time and space complexity of computer programs,

Section A  Tuesday, Thursday 02:00-03:50  S-219  A. H. Zahid

COMP 205: Introduction to Information Technology  (3 credits)
Prerequisites: COMP 102

Section A  Monday, Wednesday, Friday 10:00-10:50  S-317  Dr. A. Aziz
COMP 206: Hardware Logic and Design  
(3 credits (2+2))
Prerequisite: Math 101 or A-Level or Intermediate Mathematic
Fundamentals of hardware system design, beginning at the digital logic level with bits, binary representations and basic binary operations, combinational and sequential logic circuits, basic functional units, higher level computing functions, hardware description languages, basic elements of some real-life architectures.

Section A  Tuesday, Thursday 12:30-01:45  S-316  Z. A. Shah

COMP 213: Database Systems  
(3 credits (2+2))
Prerequisite: COMP 200
Databases, various data models, data storage and retrieval techniques, and database design techniques, the relational data model, the relational algebra as a basis for queries in SQL and normalization techniques to optimize database structure.

Section A  Tuesday, Thursday 02:00-03:15  S-319  Dr. A. Aziz

COMP 220: Software Engineering  
(3 credits)
Prerequisite: COMP 111
Basic 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. Various techniques used for requirements engineering, systems / software design, implementation, and testing fundamental issues of software measurement and project management.

Section A  Tuesday, Thursday 08:00-09:15  S-317  S. Zehra

COMP 301: Operating Systems  
(3 credits)
Prerequisite: COMP 200, COMP 206
Construction and working of operating systems, understanding management and sharing of the computer resources communications and concurrency, developing effective and efficient applications, problems and issues regarding multi-user, multi-tasking, and distributed system.

Section A  Tuesday, Thursday 09:30-10:45  S-219  Dr. I H. Shah

COMP 311: Computer Networks  
(3 credits)
Prerequisite: COMP 301, STAT 102
Engineering concepts underlying computer communications, including analogue and digital transmission, circuit switching and packet switching, logic network structure and operations including network layers, network models (OSI, TCP / IP) and protocol standards, understanding of modern network concepts.

Section A  Tuesday, Thursday 09:30-10:45  S-218  B. A. Bajwa
COMP 400B: Senior Project (3 credits)
Prerequisite: COMP 213, COMP 220, Senior standing
Requires students to research, conceive, plan and develop a real and substantial project related to computer science over the course of two semesters. It provides an opportunity to students to realize their acquired professional competence in the form of a demonstrable software product or other tangible result. The students must also make an oral and written project presentations.

Section A  Monday, Wednesday 01:00-01:50  S-210  B. A. Bajwa

COMP 401: Ethics for Computing Professionals (1 credits)
Prerequisite: COMP 220
Introduction to ethical questions faced by designers developers, managers and users of information systems including intellectual property rights, privacy concerns, professional responsibilities and deliberate destructive use of IT recourses.

Section A  Wednesday 03:00-03:50  S-317  Dr. S. Abbasi

CSCS 100: Introduction to Computing (3 credits)
Not open to students registered in the BS (Computing) program
Introduction to computing environments, general applications software, computing hardware, operating systems, desktop publishing, internet, software applications and tools and computer usage concepts, introductions to software engineering and information technology within the broader domain of computing.

Section A  Monday, Wednesday, Friday 09:00-09:50  S-319  S. Zehra
Section B  Monday, Wednesday, Friday 10:00-10:50  S-319  TBD
Section C  Tuesday, Thursday 12:30-12:45  S-319  S. Zehra
Section D  Monday, Wednesday, Friday 12:00-12:50  S-218  Dr. A. Aziz
Section E  Monday, Wednesday, Friday 12:00-12:50  S-319  Z. A. Shah
Section F  Tuesday, Thursday 11:00-12:15  S-319  S. Mahmood
Section G  Monday, Wednesday, Friday 03:00-03:50  S-319  Z. A. Shah
Section H  Monday, Wednesday, Friday 08:00-08:50  S-219  S. Anwar

CSCS 303: Design and Analysis of Algorithms (3 credits)
Prerequisite: COMP 200
Basic notions of the design of algorithms and the underlying data structures, measures of complexity, structure, complexity and efficiency of algorithms, techniques of algorithms.

Section A  Tuesday, Thursday 11:00-12:15  S-316  Dr. S. Abbasi

CSCS 323: Computer Organization with Assembly Language (3 credits)
Prerequisite: COMP 111, COMP 206
Introduction to computer systems and usage of assembly language for optimization and control, low-level logic employed for problem solving while using assembly language as a tool, writing moderately complex assembly language subroutines and interfacing them to any high level language.

Section A  Monday, Wednesday, Friday 11:00-11:50  S-218  Dr. I. H. Shah
CSCS 451: Compiler Construction  (3 credits)
Prerequisite: CSCS 302
Organization of compilers, different types of translators, lexical and syntax analysis.

Section A  Tuesday, Thursday 02:00-03:15  S-317  Dr. S. Abbasi

CSCS 457: Computer Vision  (3 credits)
Prerequisite: MATH 103
Introduction of theory and applications of computer vision and current problems, techniques and applications, computer vision systems, interaction to different components in a complete system, writing programs to solve computer vision problems, through the use of several programming assignments and examples.

Section A  Tuesday, Thursday 03:30-04:45  S-319  Dr. N. Ashraf

CSCS 464: Visual Programming  (3 credits, (2+2)
Prerequisite: COMP 200
Introduction to graphical user interface (GUI) based programming and event driven paradigm, X language foundation classes / framework, application wizard and application studio, user interface controls, developing custom controls, graphics device interface, application architecture, files and serialization.

Section A  Tuesday, Thursday 12:30-01:45  S-218  S. Shahid

CSIT 210: Introduction to Multimedia  (3 credits)
Prerequisite: CSCS 100 or COMP 205
Introduction to multimedia, different media types and their uses, range of applications of multimedia, selection of tools available, for the production of multimedia applications hands-on practice in the production of simple multimedia applications.

Section A  Monday, Wednesday, Friday 11:00-11:50  S-319  A. H. Zahid

CSIT 301: Web Application Development  (3 credits)
Prerequisite: COMP 213, COMP 220
The course addresses the concepts methods, technologies, and techniques of developing web applications that collect, organize and expose information resources. Topics covered include web applications architectures, design methods and technologies, interface design, usability of web applications, accessibility. Testing metrics, operation, deployment and maintenance of web applications and security. It will prepare students for both current and future web technologies.

Section A  Tuesday, Thursday 11:00-12:15  S-218  S. Shahid
CSIT 421: Information Security (3 credits)
Prerequisite: COMP 311
Introduction to information security from a theoretical and practical perspective, details of different security vulnerabilities of information systems and computer networks, methods to defend against that attacks for vulnerabilities exploited by adversaries and hackers, cryptographic techniques and protocols, network security protocols and practices, digital signatures and authentication protocols and wireless network security.

Section A Tuesday, Thursday 09:30-10:45 S-317 A. H. Zahid

CSSE 313: Software Requirements Engineering (3 credits)
Prerequisite: COMP 220
Role of requirements engineering within the software life cycle, comparison, contrast and evaluation of structured, object-oriented, data-oriented and formal approaches to requirements analysis, gathering necessary requirements from a customer to develop specifications and software.

Section A Tuesday, Thursday 08:00-09:15 S-316 S. Anwar

CSSE 350: Object Oriented Analysis and Design (3 credits)
Prerequisite: COMP 220
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 Monday, Wednesday Friday 12:00-12:50 S-317 S. Mahmood

CSSE 351: Software Quality Assurance (3 credits)
Prerequisite: COMP 220
Quality assurance and verification, avoidance of errors and other quality problems, inspections and reviews, testing verifications and validation techniques, process assurance vs. product assurance, quality process standards, product and process assurance, problem analysis and reporting, statistical approaches to quality control.

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

ECON 100: Basic Economics  (3 credits)
Economics Juniors and Seniors are not allowed to register for this course. Students who have not studied Economics at Intermediate should register for this course before ECON 101, 102, students who have passed ECON 101 and/or ECON 102 are not allowed to register for his course. This course is counted towards General Education credits. Basic concepts of Economics such as demand, supply, allocation of resources, opportunity cost, national income, inflation, unemployment, international trade and development economics.

Section A  Tuesday, Thursday 11:00-12:15  E-213  A. Anwar
Section B  Monday, Wednesday, Friday 09:00-09:50  E-202  A. Anwar
Section C  Monday, Wednesday, Friday 02:00-02:50  E-202  Dr. U. Hanif
Section D  Tuesday, Thursday 08:00-09:15  E-203  Dr. T. Ahmed
Section E  Monday, Wednesday, Friday 09:00-09:50  E-213  Dr. U. Hanif
Section F  Tuesday, Thursday 08:00-09:15  E-202  A. J. Khan
Section G  Monday, Wednesday, Friday 11:00-11:50  E-202  A. Anwar
Section H  Monday, Wednesday, Friday 11:00-11:50  E-214  A. J.Khan

ECON 101: Microeconomics I  (3 credits)
Students cannot register for this course with or before ECON 100. Basic methods and subject matter of microeconomics, consumer behavior theory, producer theory, cost theory, output and price strategies under perfect and imperfect completion market structure.

Section A  Tuesday, Thursday 09:30-10:45  E-213  G. Shabbir
Section B  Tuesday, Thursday 08:00-09:15  E-221  Dr. R. Ahmed
Section C  Tuesday, Thursday 11:00-12:15  E-221  Dr. M. Akbar
Section D  Tuesday, Thursday 09:30-10:45  E-203  Dr. R. Martin

ECON 102: Macroeconomics  (3 credits)
Students cannot register for this course with or before ECON 100. Key macroeconomic concepts, national income accounting, productivity, standard of living growth and public policy issues, introduction to consumption, saving and capital formation, inflation, unemployment, monetary system, quantity theory of money, introduction to monetary and fiscal policies.

Section A  Monday, Wednesday, Friday 10:00-10:50  E-214  M. S. Ayyubi
Section B  Monday, Wednesday, Friday 02:00-02:50  E-221  S. A. Abbas
Section C  Tuesday, Thursday 02:00-03:15  E-214  L. Saeed
Section D  Tuesday, Thursday 11:00-12:15  E-202  Dr. R. Aslam
ECON 103: Mathematics for Economists  (3 credits)
基本工具的数学经济学和它们的应用于经济分析，数学经济学的本质，实数系统，集合论和经济学，比较静态分析，线性模型和矩阵代数，工具的代数和微积分，微积分在经济学的应用，优化的一个和多变量函数，优化与约束和经济应用的优化。

Section A  Tuesday, Thursday 12:30-01:45  E-213  A. Batool
Section B  Monday, Wednesday, Friday 10:00-10:50  E-213  G. Shabbir

ECON 201: Microeconomics II  (3 credits)
Prerequisites: ECON 101 and 103
微观经济学的继续使用数学模型来分析消费者理论，生产者理论，企业的行为在完全和不完全市场竞争结构下。输入市场具有两种不同的竞争。 

Section A  Monday, Wednesday, Friday 09:00-09:50  E-203  Dr. B. Aziz
Section B  Monday, Wednesday, Friday 11:00-11:50  E-203  Dr. B. Aziz

ECON 202: Macroeconomics II  (3 credits)
Prerequisites: ECON 102 and 103
古典和凯恩斯经济政策理论，AD和AS模型的推导及其对稳定化政策的影响，短期和长期通货膨胀失业关系，消费和投资理论和经济成长，成长会计和收敛。

Section A  Monday, Wednesday, Friday 12:00-12:50  E-202  M. S. Ayyubi
Section B  Tuesday, Thursday 12:30-01:45  E-214  S. A. Abbas

ECON 203: Statistics for Economists  (3 credits)
应用统计工具在经济学，基本概念和统计术语，数据的呈现，集中趋势的度量，分散，形状和关系，概率和概率分布，随机变量，概率密度函数的离散和连续随机变量，联合，边缘和条件概率密度函数，伯努利，二项，正态，泊松，t，F定义，性质和它们之间的关系，样本和 sampling distributions，统计推断：估价和检验假说。

Section A  Monday, Wednesday, Friday 10:00-10:50  E-221  L. Saeed
Section B  Monday, Wednesday, Friday 02:00-02:50  E-213  L. Saeed

ECON 300: Fundamentals of Econometrics  (3 credits)
Prerequisites: ECON 201,202 and 203
回归分析和普通最小二乘， dummy 变量回归模型，放松古典模型的假设，多重共线性，异方差，自相关，右手端内生变量，WLS和GLS，模型 specification and diagnostic testing。

Section A  Monday, Wednesday, Friday 12:00-12:50  E-203  Dr. M. A. Bhatti
Section B  Monday, Wednesday, Friday 11:00-11:50  E-213  Dr. M. A. Bhatti
**ECON 302: Research Methods and Computer Applications**  
(3 credits)
Prerequisite: ECON 300
Methods and methodologies of research used in Economics; Techniques of investigation; Data collection methods; Research design; Sampling; Report writing and use of econometric software.

*Section A*  
Monday, Wednesday, Friday 02:00-02:50  
E-214  
A. J. Khan

*Section B*  
Tuesday, Thursday 12:30-01:45  
E-221  
Dr. U. Hanif

**ECON 315: Advanced Mathematical Economics**  
(3 credits)
Prerequisite: ECON 103
Dynamics and integral calculus, definite and indefinite integral, proper and improper integral, economic application on integration, difference equation, differential equations and their economic applications, linear programming non-linear programming, Khun-tucker conditions and optimal control theory with applications.

*Section A*  
Monday, Wednesday, Friday 02:00-02:50  
E-203  
A. Batool

*Section B*  
Monday, Wednesday, Friday 09:00-09:50  
E-221  
A. Batool

**ECON 400: Issues in Pakistan Economy**  
(3 credits)
Prerequisite: ECON 202
Leading issues in the Pakistan economy, political economy, growth, income distribution and poverty, stat of inflation and unemployment, growth and development issues of major sectors, fiscal and monetary policy, balance of payments and budget deficits, foreign trade and aid, internal and external debt, money and capital markets, and human resource development.

*Section A*  
Tuesday, Thursday 12:30-01:45  
E-203  
Dr. M. Aslam Ch

*Section B*  
Monday, Wednesday, Friday 12:00-12:50  
E-221  
Dr. R. Ahmed

*Section C*  
Tuesday, Thursday 09:30-10:45  
E-202  
Dr. R. Ahmed

**ECON 403: Time Series Econometrics**  
(3 credits)
Prerequisite: ECON 300
time-series techniques in economics, dynamic econometric models, autoregressive and distributive lag models, estimation of autoregressive, causality in economics, approaches to economic forecasting, ARCH and GARCH models, vector auto-regression (VAR), co-integration and error correction modeling.

*Section A*  
Tuesday, Thursday 11:00-12:15  
E-214  
Z. Iqbal

*Section B*  
Monday, Wednesday, Friday 10:00-10:50  
E-202  
Dr. S. H. Syed

**ECON 407: Research Project and Paper Writing**  
(3 credits)
Prerequisites: ECON 302 and CGPA ≥ 3.3
Students will conduct a research project under the prearranged supervision of a faculty member of the department on a topic of economic significance. The student will have viva-voice examination before a committee.

*Section A*  
Tuesday, Thursday 11:00-12:15  
E-207  
Dr. S. H. Syed
ECON 411: Development Policy (3 Credits)
Prerequisite: ECON 311
International debt, aid / assistance, debt crises and BOP, resource mobilization and industrialization, rural development and migration, agricultural vs. industrial development, human capital and its development, development and crises, poverty and income distribution, environment and development.

Section A  Monday, Wednesday, Friday 10:00-10:50  E-203  Dr. R. Aslam
Section B  Monday, Wednesday, Friday 12:00-12:50  E-213  Dr. R. Aslam
Section C  Tuesday, Thursday 09:30-10:45  E-221  Dr. A. Hussain

ECON 413: Monetary Policy (3 credits)
Prerequisite: ECON 313
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  Dr. T. Ahmed
Section B  Monday, Wednesday, Friday 11:00-11:50  E-221  Dr. T. Ahmed
Section C  Monday, Wednesday, Friday 09:00-09:50  E-214  S. A. Abbas

ECON 417: International Finance (3 credits)
Prerequisite: ECON 307
Balance of Payments (BOP), foreign exchange market, exchange rates, purchasing power parity theory, monetary approach to the BOP and exchange rates, elasticity approach to BOP, asset market model of exchange rates, macroeconomics of open economy and international monetary system, adjustments in BOP under fixed and flexible exchange rates systems, various adjustment policies to remove internal and external balances, impact of different policies (fiscal & monetary) on open economy through aggregate demand and aggregate supply curves under different exchange rate systems, evaluation of European Monetary and International Monetary Systems.

Section A  Tuesday, Thursday 11:00-12:15  E-203  G. Shabbir

ECON 422: Macroeconomics Analysis (3 credits)
Prerequisite: ECON 202
New-Keynesian, new-classical foundations and debate, Open Economy, Mundell-Fleming Model rational exceptions, Economic fluctuations and its sources in open economy, Fiscal-Monetary policy and economic stability, Catastrophe theory, random walk, real business cycle theory, dynamic consumption, investment, government debt and Richardian equivalence.

Section A  Tuesday, Thursday 08:00-09:15  E-214  Z. Iqbal
Section B  Tuesday, Thursday 09:30-10:45  E-214  Z. Iqbal
Section C  Tuesday, Thursday 12:30-01:45  E-202  Dr. M. A. Bhatti
EDUCATION

UNIV 100: Foundation of University Education  (3 credits)
(Not open for online Registration)
Prerequisites:  Lang 110 (or exempted from the Language Program)
This course is especially designed for university freshmen. All entering students must take University 100 during their first semester or after they have finished the Lang program. This course helps them to make the best use of their years of the university study at FC College (University). Each student will become more aware of his or her strengths and weaknesses in learning by working on a variety of skills. By examining their values and developing learning strategies this course will help students become successful in FCC’s liberal arts program. Transfers with 60 or more credits are exempt.

Section A  Monday, Wednesday, Friday 08:00-08:50  N-208  Dr. M. A. Khan
Section B  Tuesday, Thursday 08:00-09:15  N-208  S. Ayubi
Section C  Monday, Wednesday, Friday 08:00-08:50  N-209  R. Jalal
Section D  Tuesday, Thursday 08:00-09:15  N-209  K. Shukerkullah
Section E  Monday, Wednesday, Friday 11:00-11:50  N-208  S. Mushtaq
Section F  Tuesday, Thursday 12:30-01:45  N-209  M. Abbasi
Section G  Monday, Wednesday, Friday 11:00-11:50  N-209  S.Ayub
Section H  Tuesday, Thursday 12:30-01:45  N-209  Dr. M. N. Asghar
Section J  Monday, Wednesday, Friday 10:00-10:50  N-208  TBD
Section K  Tuesday, Thursday 09:30-10:45  N-208  A. Mubeen

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

Section A  Tuesday, Thursday 11:00-12:15  N-217  Dr. Dubash
Section B  Tuesday, Thursday 08:00-09:15  N-217  M. A. Arshad
Section C  Monday, Wednesday, Friday 10:00-10:50  N-209  A. Rashid

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  Monday, Wednesday, Friday 12:00-12:50  N-209  A. Rashid
Section B is open to Education Major and Minor only
Section B  Saturday 09:00-11:00  N-217  Dr. Dubash

EDUC 210: Education Policies of Pakistan  (3 credits)
Prerequisites: EDUC 110
Various education polices of Pakistan, analyses of the successes and failures of each with identification of probable causes, analysis of policies at the preschool, elementary, secondary, higher education and teacher education level.

Section A  Tuesday, Thursday 09:30-10:45  N-209  A. Rashid
EDUC 310: Curriculum Development  (3 credits)  
Prerequisites: EDUC 110  
A perception of what curriculum is as a progressive activity in the student’s and teacher’s lives, an international vision of curriculum and its wider application in global society.  

Section A  Tuesday, Thursday 11:00-12:15  N-209  M. A. Arshad

EDUC 350: Classroom Management  (3 credits)  
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 12:30-13:45  N-217  Dr. Dubash

EDUC 370: Teaching Language Arts at the Elementary Level  (3 credits)  
Prerequisites: EDUC 110  
Development of skills in reading, writing, speaking and listening from class 1 through Class 8, standards for each area in each year, planning classroom management and methods for incorporating language arts across the curriculum and the use of workshops for teaching language arts.  

Section A  Monday, Wednesday, Friday 02:00-02:50  E-323  C. Burke

EDUC 420: Senior Research Project  (3 credits)  
Prerequisites: EDUC 110, EDUC 320  
Student will select a problem from the field of education and go through the process of educational research under the guidance of a mentor. Research findings will be applied to actual scenarios.  

Section A  Monday, Wednesday, Friday 01:00-01:50  N-217  M. A. Arshad
ENGLISH

ENGL 101: Writing and Grammar (3 credits)
Teaching of English language through integrated skills (reading, writing, listening, speaking), training students to write coherent paragraphs by practicing short narrative, descriptive, expository and argumentative, essay writing.

Section A  Monday, Wednesday, Friday 08:00-08:50  E-204  F. Zaheer
Section B  Monday, Wednesday, Friday 09:00-09:50  E-204  A. Gill
Section C  Monday, Wednesday, Friday 10:00-10:50  E-204  A. Alphonce
Section D  Monday, Wednesday, Friday 11:00-11:50  E-204  A. Alphonce
Section E  Monday, Wednesday, Friday 12:00-12:50  E-204  R. John
Section F  Monday, Wednesday, Friday 02:00-02:50  E-204  A. Pervaiz
Section G  Monday, Wednesday, Friday 03:00-03:50  E-204  W. Azeem
Section H  Tuesday, Thursday 08:00-09:15  E-204  R. John
Section J  Tuesday, Thursday 09:30-10:45  E-204  A. Waseem
Section K  Tuesday, Thursday 11:00-12:15  E-204  S. Raees
Section L  Tuesday, Thursday 12:30-01:45  E-204  A. Pervaiz
Section M  Tuesday, Thursday 02:00-03:15  E-204  A. Maqbool

ENGL 102: Communication Skills (3 credits)
Develops practical communication skills through reading, writing, listening and speaking in real-life situations. One of the major objectives of this course is stimulate student to think about what, why and how they communicate. Emphasis is on verbal and non-verbal messages, identifying the main ideas of conversations, lectures and other spoken texts, deriving the meaning of new words from the context, note-taking skills for participating successfully in social conversation and academic discussions, interactive and effective listening, negotiation for meaning giving effective presentations, conducting seminars, chairing and participating in meetings, and writing emails, letters memos, CVs job applications and reports.

Section A  Monday, Wednesday, Friday 08:00-08:50  E-205  R. John
Section B  Monday, Wednesday, Friday 09:00-09:50  E-205  J. Austin

ENGL 103: Advanced Writing Skills (3 credits)
Prerequisite: ENGL 101
Proficiency in the skill of academic writing through research, development of a well-argued and well-documented academic paper with clear thesis statement, Critical thinking, argumentation and synthesis of information, using citation and bibliography.

Section A  Monday, Wednesday, Friday 10:00-10:50  E-205  A. Waseem
Section B  Monday, Wednesday, Friday 11:00-11:50  E-205  F. Syeda
Section C  Monday, Wednesday, Friday 12:00-12:50  E-205  S. Raees
Section D  Monday, Wednesday, Friday 02:00-02:50  E-205  Dr. I. Hassan
Section E  Monday, Wednesday, Friday 03:00-03:50  E-205  Dr. I. Hassan
Section F  Tuesday, Thursday 08:00-09:15  E-205  Dr. K. Ud Din
Section G  Tuesday, Thursday 09:30-10:45  E-205  Dr. K. Ud Din
Section H  Monday, Wednesday Saturday 11:00-11:50  E-231  S. Raees
Section J  Tuesday, Thursday 12:30-01:45  E-205  L. Masih
Section K  Tuesday, Thursday 02:00-03:15  E-205  L. Masih
Section L  Tuesday, Thursday 08:00-09:15  E-231  A. Gill
ENGL 201: Introduction to English Literature (3 credits)
This course is a prerequisite for all of the core course / requirements of English major and minor. Basic questions regarding the nature and functions of English literature that is now described as “Literatures” in English. Traces, in the simplest possible way, the significant elements and components of English literature and its various genres as they develop systematically along its history, and also explores the practical and critical aspects that address its abstract aesthetic.

Section A  Tuesday, Thursday 12:30-01:45  E-222  Dr. W. Anwar
Section B  Tuesday, Thursday 02:00-03:15  E-222  Dr. N. Langah

ENGL 207: Media and Literature (3 credits)
Introduction media as a means of understanding literature and offers a comparison between media and literature and the effectiveness of one over the other. Major emphasis on representation of literature through media, with particular focus on adaptation theory.

Section A  Monday, Wednesday, Friday 10:00-10:50  E-222  A. Maqbool

ENGL 213: Sociolinguistics (3 credits)
Focuses on the topics of language and culture, language and identity, code switching, bilingualism and monolingualism, pidgin, Creole, lingua franca, language and power, language planning, orality and speech, and speech communities. Discuss the relationship of this subject with other social sciences and the relationship between language use and social factors such as region, gender, age, ethnicity, covering basic theoretical models and methodologies.

Section A  Monday, Wednesday, Friday 09:00-09:50  E-231  A. Waseem

ENGL 301: The 19th Century English Novel (3 credits)
Through a close study of 19th century British novel, this course discusses British culture. Literature and history. Enables students to explore changes in themes, ideas and approaches towards social, economic and national issues in English culture by studying prominent authors like Emily Bronte, Charlotte Bronte, George Eliot and Thomas Hardy.

Section A  Monday, Wednesday, Friday 10:00-10:50  E-231  F. Zaheer
ENGL 304: Short Stories  
(3 credits)  
Introduces major short story writers in English to emphasize familiarity with the compositions, technique, style and thought process of a short story by understanding the elements that make it different among other forms of fictional and non-fictional pros.

Section A  Tuesday, Thursday 11:00-12:15  E-205  F. Syeda

ENGL 310: Romantic Poetry  
(3 credits)  
Critical study and analysis of late romantic poetry from the 18th to early 20th century, dealing with various literary trends and poetic traditions.

Section A  Monday, Wednesday, Friday 12:00-12:50  E-231  Dr. K. Ud Din

ENGL 320: American Poetry  
(3 credits)  
Critical study and analysis of American poetry starting from 1500 till 20th century post-modern poet.

Section A  Monday, Wednesday, Friday 02:00-02:50  E-231  N. Alam

ENGL 321: American Novels  
(3 credits)  
Explore the rise and development of the American novel. Students critically review different American novels and the concepts of the American dreams, self dependency and self explorations. Authors studied include Nathaniel Hawthorne, Harriet Beecher Stowe, Earnest Hemingway, Toni Morrison and William Faulkner.

Section A  Monday, Wednesday, Friday 03:00-03:50  E-231  A. Pervaiz

ENGL 325: American Drama  
(3 credits)  
different concepts, approaches, forms and techniques used in American Drama. Explores the socio-cultural context of selected texts, focusing on authors such as Arthur Miller, Eugene O Neil, Tennessee Williams, Edward Albee and Sam Shepard. The selection of the playwrights polishes the students’ ability to analyze and critically practice different types of texts in terms of their literary importance in history, representation and philosophical concerns.

Section A  Tuesday, Thursday 02:00-03:15  E-231  Dr. I. Hassan
ENGL 331: Research Methods for English Literature & Language (3 credits)
Prepares students for formal thesis writing. Focuses on the techniques of writing professional abstracts, developing a thesis statement and contention, finding appropriate topics for research papers, preparation and annotation of bibliographies, writing reviews from critical and analytical perspectives. A major objective is help students prepare a proposal for their final thesis course (ENGL 499) which is a requirement for all literature major.

Section A  Tuesday, Thursday 09:30-10:45  E-231  W. Azeem

ENGL 401: Modern Drama (3 credits)
Prerequisite: Only for English Major
Familiarizes students with the works of major modern dramatists; the emotional, social, cultural, economic and political context of their important works; and diversity in style, form and thought. Reviews the literary movements introduced by and influencing the dramatists. Plays taught are by G B Shaw, Henrick Ibsen, Anton Chekhov, Edward Bond, Bertolt Brecht, Samuel Beckett, Pinter, August Strindberg, Garcia Marquez, Lorca.

Section A  Monday, Wednesday, Friday 08:00-08:50  E-222  TBD

ENGL 404: English Poetry II (3 credits)
Focuses on post-World War II poetry from various poetic traditions and emphasizes texts by contemporary world poets.

Section A Tuesday, Thursday 10:00-10:50  English Seminar Room Library  Dr. N. Langah

ENGL 407: Pakistani and Indian Literature in English (3 credits)
Introduces students to selective works by Indo-Pak writers writing in English. Explores general issues and literary criticism related to the questions of identity, boundary, separations, segregation, co-existence and expression. Generates interest for these literary works by recognizing them as a significant addition to the English literary studies.

Section A  Tuesday, Thursday 12:30-01:45  E-231  Dr. N. Langah

ENGL 499: Thesis (3 credits)
Prerequisite: ENGL 331, ENGL 221 or ENGL 403
This mandatory course trains students for advanced academic writing and research. Students choose a topic of their interest approved by the supervisor and develop a thesis statement along with an abstract or proposal for literary, linguistic, critical or textual analysis. The statement is expanded into a longer essay of approximately 8000 words with bibliographies and other academic formatting requirements.

Section A  Tuesday, Thursday 11:00-12:15  E-231  Dr. W. Anwar
LANGUAGE (Not open for online Registration)

LANG 100: Language Skills I (12 credits)
BISE (Basic Interpersonal communication skills) in English, daily practice in the use of all four language skills, ways to improve vocabulary and comprehension.

Section A Monday to Thursday 10:30-01:00 N-213 F. Nagi
Friday 09:30-11:00 N-213

LANG 110: Language Skills II (12 credits)
BISE (basic interpersonal communication skills) in English with advanced levels of practice, varied materials to improve skills for better comprehension along with fluency and competency.

Section A Monday to Thursday 10:30-01:00 N-214 N. Hanif
Friday 09:30-11:00 N-214
GEOGRAPHY

GEOG 101: Fundamentals of Geography (3 credits)
Geography as a discipline, its thematic domains and fundamental concepts.

Section A  Monday, Wednesday, Friday 09:00-09:50  E-227  Z. Jameel
Section B  Monday, Wednesday, Friday 02:00-02:50  E-227  K. Shakrullah

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

Section A  Monday, Wednesday, Friday 09:00-09:50  A-002  S. A. Umar

GEOG 311: Principles of Atmospheric and Hydrospheric Dynamics (3 credits)
Prerequisites: GEOG 101 or GEOG 210
Elements and forces generating weather phenomena, their dynamics and impact, climatic system and their classification, features and dynamics of marine masses, water resources on land.

Section A  Tuesday, Thursday 11:00-12:15  A-002  K. Shakrullah

GEOG 314: Hydrosphere Resources (4 credits)
Prerequisites: GEOG 101 or GEOG 210
Origin, structure and shape of the ocean basins, compositions, thermodynamics, circulation and oscillations of marine water, maritime resources and their use by humans, water resources on land, their origin, distribution, availability and quality, use and conservation as a resource for mankind.

Section A  Monday, Wednesday, Friday 12:00-12:50  A-002  K. Shakrullah
Lab:  Tuesday 02:00-03:40  A-002

GEOG 322: Economic Geography (3 credits)
Principles of governing multivariate interactions underlying the evolution and distribution of various economic activities and functions, the role of temporal and spatial variables responsible for changes in the economic systems and regions.

Section A  Monday, Wednesday, Friday 11:00-11:50  E-227  S. A. Umar

GEOG 371: Digital Cartography (3 credits)
Prerequisite: GEOG 270 or GEOG 274, knowledge of computer software applications is preferred.
Skill development in computerized map making and interpretation / analysis.

Section A  Monday, Wednesday, Friday 08:00-08:50  S-120  Z. Jamil
GEOG 374: Aerial and Satellite Imaging 3 credits, (2+2)
Prerequisite: Knowledge of computer software applications; GEOG 274 or instructor permission.
Elements and interpretation processes pertaining to aerial photographs, remote sensing of earth resources and occupancy patterns, global positioning system (GPS), geographic information science and systems (GIS), digital image processing (DIP)

Section A    Monday, Wednesday 02:00-02:50     A-002     Z. Jamil
            Lab:    Thursday 02:00-03:40     S-120

GEOG 411: Sustainable Management of Natural Resources (3 credits)
Prerequisite: GEOG 240 or instructor permission
Parameters and principles of governing sustainability of the Earth’s resources, international and regional efforts to achieve sustainability.

Section A    Tuesday, Thursday 09:30-10:45     A-002     S. A. Umar

GEOG 499B: Directed Project (3 credits)
Prerequisite: (For Only Senior Students) Knowledge of computer software applications or instructor consent permission.
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/participative research in field, Laboratory, or Library under the direction of a member of Geography faculty appointed by the chair) and preparation and presentation of research report/thesis.

Section A    Monday, Wednesday, Friday 10:00-10:50     A-002     TBD
HEALTH AND PHYSICAL EDUCATION

HPED 102: Football (Only for Boys) (1 credit)
Techniques of running, passing, kicking, tackling, blocking, heading and dribbling, coordination for offensive and defensive teamwork

Section A  Monday, Wednesday 03:00-03:50  F. Ground  S. Nazir

HPED 105: Volleyball (Only for Girls) (1 credit)
Techniques for passing blocking and smashing.

Section A  Tuesday, Thursday 03:00-03:50  Lucas Centre  H. Atta

HPED 110: Basketball (1 credit)
For both male and female students
Skills of ball holding, dribbling, passing and shooting.

Section A (Boys) Monday, Wednesday 10:00-10:50  Lucas Centre  B. Kamil
Section B (Girls) Monday, Wednesday 03:00-03:50  Lucas Centre  H. Atta
**HISTORY AND PAKISTAN STUDIES**

**PKST 101: Pakistan Studies (Compulsory)  (3 credits)**
The idea of Pakistan: history, geography, economy, politics and society of Pakistan through an identification of major themes, personalities, and events which have affected and continue to have an impact on the development of the country.

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<th>Section</th>
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<td>Dr. S. Hayat</td>
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<td>M. A. Abbasi</td>
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<td>Dr. F. Hasnat</td>
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**HIST 101: Survey of South Asia  (3 credits)**
History of South Asia from the Indus Valley Civilization to the modern day, with a focus on historical periods and themes.

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<td>Y. K. Bangash</td>
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**HIST 102: Survey of Western Civilization  (3 credits)**
Western Civilization from Ancient Greece and Rome of the French Revolution in 1789, themes which have shaped Western Civilization, including an understanding of the scholarly debate on the issues.

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<td>S. Sumbal</td>
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**HIST 201: Research methodology  (3 credits)**
Dynamics of writing history, survey of the debate on historiography, conceptualization, design and execution of research in history.

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<td>Dr. S. Hayat</td>
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**HIST 250: History of Salaeen-e-Delhi  (3 credits)**
Prerequisite: HIST 101
The Delhi Sultanate period, its origins, main features and causes of its decline, development of art, culture and architecture of the age, and the evolution of state and society under the rule of the Sultan.

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<td>K. Jawad</td>
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</table>
HIST 315: Freedom and the Nationalist Movement in the Subcontinent (1857-1947) (3 credits)
Prerequisite: HIST 101
Start of the nationalist movement in South Asia with a focus on the key events and personalities which shaped the society, politics and economy of the region during the period, the rise of Muslim separatism and the creation of Pakistan.

Section A Monday, Wednesday, Friday 12:00-12:50 S-212 Dr. A. Syeda

HIST 410: Colonial Punjab 1848-1947 (3 credits)
Prerequisites: HIST 101
Punjab’s history during Colonial rule, geography of Punjab in Historical perspective the support of local elites for colonial rule, the growth of the agrarian economy, and the political, social, and economic effects of these issues on the province.

Section A Tuesday, Thursday 12:30-01:45 S-213 S. Sumbal

HIST 490: Senior Seminar in History: The Dismemberment of Pakistan, 1970-71 (3 credits)
Prerequisites: Only for Juniors and Seniors year
The seminar course comprises of extensive readings on a selected topic (varying each semester) under the leadership of a faculty member who will facilitate in-depth analysis and discussion. The curse will prepare students for independent research through a series of short papers and a final term paper on the course topic.

Section A Tuesday, Thursday 09:30-10:45 S-212 Y. K. Bangash

HIST 499: Independent Research (3 credits)
Prerequisites: HIST 490
In this course the student will articulate a question to be investigated, draw up plan of research, glean information from primary and secondary sources, analyze the material, and present an argument and conclusions in a 10,000 word paper. The paper should integrate the methods learned in prior classes about historical analysis with what has been learned through the research. Students will conduct the research under the guidance of a member of the History faculty or any other person acceptable to the Chairperson of the department.

Section A Tuesday, Thursday 03:30-04:45 S-213 Y. K. Bangash
MASS COMMUNICATION

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

Section A  Monday, Wednesday, Friday 09:00-09:50  E-229  N. Sahar
Section B  Monday, Wednesday, Friday 10:00-10:50  E-229  N. Sahar
Section C  Tuesday, Thursday 09:30-10:45  E-229  N. Sahar
Section D  Monday, Wednesday, Friday 10:00-10:50  E-228  Qurratulaen
Section E  Monday, Wednesday, Friday 11:00-11:50  E-228  Qurratulaen
Section F  Monday, Wednesday, Friday 12:00-12:50  E-228  Qurratulaen
Section G  Monday, Wednesday, Friday 08:00-08:50  E-229  A. Fareed
Section H  Monday, Wednesday, Friday 09:00-09:50  E-228  A. Fareed
Section J  Tuesday, Thursday 11:00-12:15  E-229  A. Fareed
Section K  Monday, Wednesday, Friday 11:00-11:50  E-229  R. Hasan
Section L  Monday, Wednesday, Friday 12:00-12:50  E-229  R. Hassan
Section M  Tuesday, Thursday 09:30-10:45  E-228  R. Hassan

MCOM 101: Introduction to Journalism (3 credits)
Introduction to print electronic and online journalism, types of journalism, news organization, basics of reporting and editing, contents of newspaper, television and radio.

Section A  Monday, Wednesday, Friday 09:00-09:50  E-230  Dr. S. Abbas
Section B  Monday, Wednesday, Friday 11:00-11:50  E-333  Dr. S. Abbas
Section C  Monday, Wednesday, Friday 09:00-09:50  E-333  F. Jabeen
Section D  Monday, Wednesday, Friday 10:00-10:50  E-333  F. Jabeen

MCOM 103: Introduction of 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  Monday, Wednesday, Friday 12:00-12:50  E-230  A. Mubeen
Section B  Monday, Wednesday, Friday 03:00-03:50  E-230  A. Mubeen
Section C  Tuesday, Thursday 12:30-01:45  E-230  F. Mahmood
Section D  Tuesday, Thursday 02:00-03:15  E-230  F. Mahmood

MCOM 201: News Reporting (3 credits)
Prerequisite: MCOM 101
Mechanics, elements, value and structure of stories for print and electronic media; news sources for print and electronic media; Qualifications and functions of a reporter; Basics of camera and microphone reporting; Interpretative and investigative reporting, Reporting beats and interview techniques.

Section A  Monday, Wednesday, Friday 02:00-02:50  E-333  M. Ali
Section B  Monday, Wednesday, Friday 03:00-03:50  E-333  M. Ali
MCOM 203: Media and Peace Building  (3 credits)
Prerequisite: MCOM 101

Section A  Tuesday, Thursday 09:30-10:45  E-333  F. Jabeen

MCOM 301: Press Laws and Ethics  (3 credits)
Prerequisite: MCOM 201
Evolution of press laws with special reference to the Sub-continent and Pakistan. A critical analysis of the current press and publication regulations; PEMRA laws pertaining to the electronic media in Pakistan; Freedom of expression; Defamation laws; Contempt of Courts; Contemporary trends in copyright law and the concept of intellectual property rights; Code of ethics for journalists from Western and Islamic Perspectives.

Section A  Monday, Wednesday, Friday 10:00-10:50  E-230  A. Soomro
Section B  Monday, Wednesday, Friday 11:00-11:50  E-230  A. Soomro

MCOM 305: Magazine Journalism  (3 credits)
Prerequisite: MCOM 201
Introduction, scope and types of magazine; prospects and challenges of magazine journalism in Pakistan; writing for magazines; personality sketches, interviews and social round-ups; make-up and layout of magazines.

Section A  Tuesday, Thursday 11:00-12:15  E-333  A. Muzamill

MCOM 306: Research Methodology  (3 credits)
Prerequisite: MCOM 301, Only for junior students majoring in Mass Communications
Understanding of research methodology, concepts of research, kinds of research, elements of research design, technique to prepare a research proposal.

Section A  Tuesday, Thursday 11:00-12:15  E-230  Dr. S. Abbas

MCOM 309: Media History  (3 credits)

Section A  Monday, Wednesday, Friday 08:00-08:50  E-230  S. Mushtaq
MCOM 310: Mass Communication Studies  
Prerequisite: MCOM 301  
Definitions, types, elements and models of communication and mass communication, features and functions 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  Tuesday, Thursday 08:00-09:15  E-230  A. Muzamill
Section B  Tuesday, Thursday 09:30-10:45  E-230  A. Muzamill

MCOM 401: Radio Broadcasting: A Theoretical Introduction  
Prerequisite: MCOM 301  
Origin and development of radio in the subcontinent, functions of broadcasting house, role of national development, distinctive features of radio news, interviewing for radio, duties of a radio producer, trends in FM radio in public and private sector in Pakistan.

Section A  Tuesday, Thursday 08:00-09:15  E-333  A. Mubeen

MCOM 407: Internship  
Only for MCOM Students (Seniors and Juniors Year)  
Prerequisite for internship CGPA 2.75  
An internship will allow students to experience first-hand functioning of media organizations; sub-editing techniques, reporting techniques of different beats such as parliament, sports, commerce, social services and courts, etc.

Section A  Tuesday, Thursday 02:00-03:15  E-228  Dr. H. Mian

MCOM 410: Documentary Making  
Prerequisite: MCOM 402  
Scripting, cinematography, editing, narration, students will make two documentaries of 5-10 minutes each on DVDs / CDs.

Section A  Monday, Wednesday, Friday 02:00-02:50  E-229  S. Mushtaq

MCOM 412: International Communication  
Prerequisite: MCOM 310  
International communication, free flow of information (NWICO), intercultural communication, global media giants, global media and cultural dependency, role of media in conflict resolution, media and foreign policy, issues in international communication, advocative, adversarial and watchdog role of international media, trans-border data flow.

Section A  Tuesday, Thursday 12:30-01:45  E-333  Dr. H. Mian
MCOM 413: Media, Society & Culture   (3 credits)
Prerequisite: MCOM 409
The relationship between media, society and culture, theories of media and culture, theories of media and society, cultural socialization, homogenization, acculturation, cultural diversity, pluralism, relativism and mass media, social change and mass media.

Section A   Tuesday, Thursday 11:00-12:15   E-228   F. Mahmood
Section B   Monday, Wednesday, Friday 12:00-12:50   E-333   A. Soomro

MCOM 499: Research Thesis / Project   (3 credits)
Only for students of Majoring in Mass Communication
Prerequisite: MCOM 306
Students are required to submit one research thesis / project on any assigned topic at the end of the 8th semester.

Section A   Tuesday, Thursday 02:00-03:15   E-229   M. Ali
Section B   Tuesday, Thursday 02:00-03:15   E-333   Dr. S. Abbas
Section C   Monday, Wednesday, Friday 02:00-02:50   E-230   Dr. H. Mian
MATH 100: Quantitative Skills (3 credits)
Basic algebra and number theory, rounding, estimating and scientific notation, algebraic expressions, fractions, factoring, solving equation, two equations with two unknowns and their applications to daily life problems, quadratic equations and their applications, percentage problems (profit, loss, commission, zakat deduction, markup, margin, stock exchange index) ratio and proportion, work problems, distance problems (time, distance, speed, velocity) number sequence, basic geometry, mean, median, and mode, introduction to probability.

Section A  Monday, Wednesday, Friday 08:00-08:50  S-413  F. Jamil
Section B  Monday, Wednesday, Friday 10:00-10:50  S-412  K. Azhar
Section C  Monday, Wednesday, Friday 11:00-11:50  S-412  F. Jamil
Section D  Monday, Wednesday, Friday 02:00-02:50  S-412  Dr. N. Shahid
Section E  Monday, Wednesday, Friday 03:00-03:50  S-412  Dr. R. Ashraf
Section F  Tuesday, Thursday 08:00-09:15  S-412  F. Jamil
Section G  Tuesday, Thursday 11:00-12:15  S-412  K. Azhar

MATH 101: Pre-Calculus & Trigonometry (3 credits)
Fundamental, solution of equations and inequalities, lines, functions, linear and quadratic functions, polynomial and rational functions, operations on functions, inverse functions, synthetic division, remainder and factor theorem, partial fractions, exponential, logarithmic and trigonometric functions trigonometric identities, solution of right and oblique triangles.

Section A  Monday, Wednesday, Friday 08:00-08:50  S-412  M. Asghar
Section B  Monday, Wednesday, Friday 09:00-09:50  S-412  M. Asghar
Section C  Tuesday, Thursday 12:30-01:45  S-412  Dr. N. Shahid

MATH 102: Calculus-I (3 credits)
Prerequisite: MATH-101 or A-Level Mathematics or Intermediate Mathematics
Functions, graphs of functions, Translation, Stretching and compressing graphs, limit, continuity and differentiability, differentiation and its basic rules, indeterminate forms, L'Hopital's rule, integration and its techniques, introduction to definite integral.

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

MATH 103: Introductory Linear Algebra (3 credits)
Prerequisite: MATH-101 or A-Level Mathematics or Intermediate Mathematics
Introduction to system of linear equations, matrices and matrix operations, elementary matrices, Gaussian elimination, Gauss Jordan Methods for solving a system of linear equation, determinants and their properties, vector spaces, subspaces, linear independence, basis and dimensions.

Section A  Tuesday, Thursday 09:30-10:45  S-412  Dr. S. Malik
MATH 202: Ordinary Differential Equations  (3 credits)
Prerequisite MATH 102

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

MATH 301: Multivariable Calculus  (3 credits)
Prerequisite: MATH 201
Vectors, analytic geometry in 3-space, quadratic surfaces, partial and directional derivatives, Chain rules, Euler’s theorem, maxima and minima of functions of more than one variable, Lagrange’s multipliers, double and triple integral with applications, line integral and Green’s theorem.

Section A  Monday, Wednesday, Friday 11:00-11:50  S-413  Dr. S. Malik

MATH 302: Mechanics  (4 credits)
Prerequisite: MATH 203
Composition and resolution of forces, friction, kinematics and dynamics of particle, Projectile Motion.

Section A  Tuesday, Thursday 09:30-11:00  S-413  Dr. W. Hussain

MATH 307: Complex Analysis  (4 credits)
Prerequisite: MATH 201
Complex numbers, polar form of complex number, limit, continuity and differentiability of function of a complex variable, analytic functions, C-R equations, transcendental functions, complex integration, Cauchy theorems, entire functions, Liouville’s theorem, Morera’s theorem, Taylors and Laurent’s series, Residue Theory, Cauchy residue theorem, Contour integrations, conformal mappings.

Section A  Monday, Wednesday 12:00-01:15  S-413
Friday 12:00-12:50  S-413  Dr. S. Malik

MATH 310 / CSCS 310*: Numerical Analysis  (3 credits)
(MATH 25 Seats and CSCS 10 Seats)
Prerequisite: MATH 102 or MATH 103
Solution of system of linear equations, solution of non linear equations error analysis, interpolation by polynomials, Lagrangian interpolation, numerical differentiation, numerical integration, computer programming will be done by using any suitable software like MATLAB, MAPLE or MATHEMATICA.

Section A  Monday, Wednesday, Friday 09:00-09:50  S-413  Dr. N. Shahid
MATH 313: Group Theory (3 credits)
Prerequisite: MATH 210
Definition and examples of group, subgroups, cyclic groups, cosets, Lagrange’s Theorem, conjugacy, normal subgroups, quotient groups, homomorphism and isomorphism, Caley’s theorem.

Section A  Monday, Wednesday, Friday 10:00-10:50  S-413  Dr. R. Ashraf

MATH 403 / CSCS 403*: Graph Theory (4 credits)
(MATH 25 Seats and CSCS 10 Seats)
Prerequisite: MATH 106 / COMP 113*
Graphs, sub graphs, isomorphism, trees, connectivity, Eulerian and Hamiltonian graphs, matchings, Vertex and Edge Colorings, Planarity.

Section A  Tuesday, Thursday 02:00-03:30  S-413  Dr. M. Qureshi

MATH 407: Functional Analysis (3 credits)
Prerequisite: MATH 311

Section A  Tuesday, Thursday 08:00-09:15  S-413  M. Asghar
PHILOSOPHY

PHIL 101: Introduction to Philosophy (3 credits)
This course brings to the student a selection of the problems historically identified as philosophical along with the methods philosophers have used to solve these problems. Examples would be justice and moral order, evaluation and justification of belief human value and dignity. The emphasis is on identifying the problems that have bothered critical thinkers, followed by selective philosophical solutions and their authors.

Section A  Tuesday, Thursday 11:00-12:15  E-121  Dr. G. Irfan
Section B  Tuesday, Thursday 12:30-01:45  E-121  Dr. G. Irfan

PHIL 202: Philosophy: Modern to Contemporary (3 credits)
A continuation of the study of critical thought as it develops from the 16th century CE to the present, including Eastern as well as Western thinkers. Of special interest are the issues that captured attention because of the rise of the sciences, the development of naturalism, humanism and the challenges of 20th century social crises.

Section A  Monday, Wednesday, Friday 09:00-09:50  E-121  Dr. M. Boone

PHIL 322: Symbolic Logic (3 credits)
Prerequisite: PHIL 221 or Permission from instructor
Logical formulation of the ideal language that is the basis of modern computer language, physics and linguistics, natural deduction using quantification, sentential.

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

PHIL 331: Theories of Ethics (3 credits)
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 light of contemporary theories designed to resolve these issues.

Section A  Monday, Wednesday, Friday 11:00-11:50  E-121  Dr. G. Irfan

PHIL 332: Metaphysics (3 credits)
This course analyzes nature and structure of reality with attention to issues such as physical and immaterial reality, time, connection of mind and body, and nature of the human person; attention may also be given to building of worldviews into language, molding of perception by cultural structures, and tools necessary to reveal how regularities of human experience and worth are to be explained.

Section A  Monday, Wednesday, Friday 10:00-10:50  E-121  Dr. M. Boone

PHIL 411: Philosophical Investigations: Augustine (3 credits)
These courses are rotated over a three year sequence and allow the student to concentrate careful study in the thought, context, and impact of a specific Medieval philosopher, students will study in the thought, context, and impact of Augustine.

Section A  Tuesday, Thursday 11:00-12:15  E-126  Dr. M. Boone
# PHYSICS

## PHYS 100: Introduction to Physics (4 credits)

Does not fulfill requirements of General Education for students who have studied physics at FSc, A-levels or equivalent.

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.

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<td>S-007</td>
<td>Dr. Henderson</td>
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<td>B</td>
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**Reserved for freshmen**

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<td>Dr. S. Yasir</td>
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## PHYS 103: Mechanics (4 credits)

Prerequisite: PHYS 100 or F.Sc. or A. Level Physics or equivalent.

Study of physical phenomena in mathematical terms: Statics and dynamics of particles and rigid bodies; oscillatory and rotary motion; gravitation and fluid mechanics, Laboratory.

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<td>B</td>
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<td>S-016</td>
<td>Dr. S. A. Shah</td>
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## PHYS 104: Wave and Vibrations (3 credits)

Prerequisite: PHYS 100 or F.Sc. or A. Level Physics or equivalent.

Study of physical phenomena in mathematical terms, types of waves, mathematical representations, energy of waves, interference, diffraction and polarizations.

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<td>Dr. S. Aslam</td>
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</table>
PHYS 151: Introduction to Sources of Energy and Environment  (3 credits)
Not recommended for first semester Freshmen
Conventional energy resources, fossil fuels including petroleum, natural gas, coal and tar sands, the promise and problems of nuclear energy, alternative energy sources, wind, solar, biogas, tidal etc. energy conservation, environmental pollution and its global effects.

Section A  Tuesday, Thursday 02:00-03:15  S-007  Dr. S. Aslam

PHYS 222: Modern Physics  (4 Credits)
Prerequisite: PHYS 221 or PHYS 103
Study of Einstein’s special theory of relativity, black body radiation, the Bohr atom, elementary wave mechanics, atomic and molecular spectra, exclusion principle, periodic table, X-ray spectroscopy, introduction to lasers, laboratory.

Section A  Monday, Wednesday, Friday 09:00-09:50 S-007  Dr. S. Aslam
Lab:  Thursday 10:00-11:50  S-039

PHYS 332: Electronics II  (4 Credits)
Prerequisite: PHYS 331
Models of active devices, single-ended and differential amplifiers, current sources and active loads, operational amplifiers, feedback, design of analogue circuits for particular functions and specifications, design of decision-making circuits, memory type circuits and digital circuits, laboratory.

Section A  Monday, Wednesday, Friday 02:00-02:50 S-027  S. A. Anwar
Lab:  Tuesday 12:00-01:50  S-027

PHYS 334: Thermal Physics  (3 Credits)
Prerequisite: PHYS 221
A statistical approach to thermodynamics, thermal and chemical equilibrium classical and expanding gas heat engines, plane transition and irreversible processes.

Section A  Monday, Wednesday, Friday 08:00-08:50 S-109  Dr. S. Yasir

PHYS 341 / MATH 316: Methods of Mathematical Physics  (3 Credits)
(Physics 20 Seats and Mathematics 15 Seats)
Prerequisite: PHYS 103, MATH 102
Vctor analysis and special function curvilinear coordinates Legendere polynomials, Bessel functions, Neuman functions, Couchy-Riemna equations, Fourier series and Fourier transformation, Tensor analysis.

Section A  Monday, Wednesday, Friday 11:00-11:50 S-109  Dr. M. Y. Zaheer

PHYS 351: Environmental Physics  (3 Credits)
Prerequisite: PHYS 221
Introduction to environmental physics, radiation, radiation balance, heat and mass transfer, micrometeorology of crops.

Section A  Monday, Wednesday, Friday 12:00-12:50 S-109  Dr. S. Yasir
PHYS 422: Nuclear Physics (3 Credits)
Prerequisite: PHYS 222
Nuclear forces, nuclear phenomenology, reaction and stability of nuclear models, radiation decay, structure of the nucleus, particle phenomenology.

Section A  Tuesday, Thursday 02:00-03:15  S-109  Dr. F. Hameed

PHYS 462: Quantum Mechanics II (3 Credits)
Prerequisite: PHYS 461
Matrix mechanics, vector spaces and linear operators, perturbation theory, application of principles of quantum mechanics to solid state and nuclear system.

Section A  Tuesday, Thursday 09:30-10:45  S-027  Dr. F. Hameed

PHYS 472: Lasers (3 Credits)
Prerequisites: PHYS 104, 321, 461
Study of the concepts of laser, spontaneous and stimulated emissions, absorption, pumping process, properties of laser beams, laser resonators, matrix formulation of geometric optics, stable and unstable laser resonators, modes in a laser cavity, loop gain Q-switching, energy levels of molecules.

Section A  Monday, Wednesday, Friday 12:00-12:50  S-007  Dr. Henderson

PHYS 482: Solid State Physics (3 Credits)
Prerequisite: PHYS 481
Free electrons, Fermi gas, nearly free electrons, energy bands, optical transitions, superconductors and magnetic properties.

Section A  Tuesday, Thursday 11:00-12:15  S-016  Dr. S. A. Shah

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)
Areas 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  Tuesday, Thursday 11:00-12:15  S-112  S. Sindhu
Section B  Tuesday, Thursday 09:30-10:45  S-112  Dr. Ijaz
Section C  Monday, Wednesday, Friday 09:00-09:50  S-112  Dr. Younis
Section D  Tuesday, Thursday 02:00-03:15  S-111  Q. Memon
Section E  Monday, Wednesday, Friday 08:00-08:50  S-112  W. Waheed
Section F  Tuesday, Thursday 08:00-09:15  S-112  W. Waheed
Section G  Tuesday, Thursday 11:00-12:15  S-219  Dr. Hasnat
Section H  Monday, Wednesday, Friday 12:00-12:50  S-111  S. Sindhu

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

Section A  Monday, Wednesday, Friday 11:00-11:50  S-112  Dr. Younis
Section B  Monday, Wednesday, Friday 11:00-11:50  S-111  Dr. Ijaz
Section C  Monday, Wednesday, Friday 02:00-02:50  S-111  Z. Awan
Section D  Tuesday, Thursday 12:30-01:45  S-416  Dr. Ejaz

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

Section A  Tuesday, Thursday 08:00-09:15  S-111  M. Mirza

PLSC 202: Governments of Developing Countries  (3 credits)
Prerequisite: PLSC 101
Unique characteristics of governments in Asia and Africa, Historical development and a comparison between these nations and the rest of the world.

Section A  Monday, Wednesday, Friday 03:00-03:50  S-111  Z. Awan
Section B  Tuesday, Thursday 02:00-03:15  S-112  Z. Awan

PLSC 203: International Relations  (3 credits)
Prerequisite: PLSC 101
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 11:00-12:15  S-111  Dr. Bokhari
Section B  Monday, Wednesday, Friday 10:00-10:50  S-112  W. Waheed
PLSC 302: Modern Political Theory (3 credits)
Prerequisite: PLSC 101
Modern ideologies since the French Revolution, including liberalism, conservatism, capitalism, nationalism, fascism and anarchism.

*Section A*  
*Monday, Wednesday, Friday 12:00-12:50*  
*S-112*  
*W. Waheed*

PLSC 303: Contemporary Political Theory (3 credits)
Prerequisite: PLSC 101 & 302

*Section A*  
*Tuesday, Thursday 12:30-01:45*  
*S-112*  
*Q. Memon*

PLSC 304: Research Methodology (3 credits)
Prerequisite: STAT 100 or STAT 101
Techniques and tools for significant research in the field of political science.

*Section A*  
*Monday, Wednesday, Friday 03:00-03:50*  
*S-112*  
*Q. Memon*

PLSC 310: Politics of the Middle East (3 credits)
Prerequisite: PLSC 101, 203
Political development and advance of modernization of the area, the role of Islam, Arab, Israeli conflict, politics of Persian Gulf, politics of OPEC, political parties, military and politics of change.

*Section A*  
*Monday, Wednesday, Friday 02:00-02:50*  
*S-112*  
*Dr. Hasnat*

*Section B*  
*Monday, Wednesday, Friday 11:00-11:50*  
*S-316*  
*Dr. Hasnat*

PLSC 312: Theories of Comparative Politics (3 credits)
Prerequisite: PLSC 101, 203
Political forces, institutions and practices of state, describing, explaining and predicting political events, importance of geographical, racial, ideological, ethnic and socioeconomic explanation of political institutions, processes and behavior, political structure, institutions, ideologies, interest groups and governmental systems, analysis of decision making processes, political conflict and change and group interaction.

*Section A*  
*Monday, Wednesday, Friday 08:00-08:50*  
*S-111*  
*M. Mirza*

PLSC 321: Pakistan Foreign Policy (3 credits)
Prerequisite: PLSC 101
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*  
*Tuesday, Thursday 12:30-01:45*  
*S-111*  
*Dr. Bokhari*
PLSC 323: International Organization (3 credits)
Prerequisite: PLSC 101 & 203

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

PLSC 401: International Political Economy (3 credits)
Prerequisite: PLSC 101, ECON 100
Phenomena that are both political and economic in nature, substantive issues, methodology and conceptual framework: rational choice theory.

Section A Monday, Wednesday, Friday 10:00-10:50 S-111 S. Sindhu

PLSC 402: Islam and Modernity (3 credits)
Prerequisite: PLSC 101
Interrelation of Islam and Modernity by deploying a multi-disciplinary perspective and addressing challenging questions about the nature of Islam’s mission in the world, major accounts of modernity’s genesis in the West and concomitant decline of religion, historical terrain of modern West’s forays into Muslim societies in the era of imperialism and colonialism.

Section A Monday, Wednesday, Friday 09:00-09:50 S-111 Dr. Ejaz

PLSC 403: Seminar and Major Political Science Research Paper (3 credits)
Prerequisite: PLSC 304
Major Paper (20 pages minimum) written under the direction of a political science professor.

Section A Monday, Wednesday, Friday 12:00-12:50 S-316 Q. Memon
Section B Tuesday, Thursday 02:00-03:15 S-424 Dr. Bokhari
PSYCHOLOGY

PSYC 100: Introduction to Psychology  (3 credits)
Historical background and subfields of Psychology, research methods, biological basis of behavior and psychological processes such as sensation, attention, perception, learning, memory, motivation, emotions, intelligence, thinking and personality.

Section A  Tuesday, Thursday 08:00-09:15  S-115  S. Samuel
Section B  Monday, Wednesday, Friday 08:00-08:50  S-115  A. Saleem
Section C  Monday, Wednesday, Friday 09:00-09:50  S-115  F. Rahman
Section D  Tuesday, Thursday 09:30-10:45  S-115  F. Rahman

PSYC 240: Theories of Personality  (3 credits)
Prerequisite: PSYC 100
Theories of personality including psychodynamic, trait, cognitive, humanistic, physiological, and learning as well as some new approaches, research activities and analysis will be integrated in the coursework

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

PSYC 290: Consumer Psychology  (3 credits)
Prerequisite: PSYC 100
Methods of studying consumer behavior, basic psychological concepts concerning consumer behavior such as perception, cognition, learning, attitude, cognitive dissonance, risk taking, motivation and personality of the buyer. Emphasis on the interrelations of economics and socio-cultural factors on decision-making including recent research findings, consumer psychology in Pakistan.

Section A  Monday, Wednesday, Friday 12:00-12:50  S-115  A. Saleem

PSYC 301: Industrial and Organizational Psychology  (3 credits)
Prerequisite: PSYC 100
Applications of psychological theory and research to the workplace and the means by which industrial / organizational psychology contributes to improve organizational effectiveness and employee satisfaction, recruitment of applicants, hiring, training, evaluation of employees’ performance, employee motivation, leadership, and human factors.

Section A  Tuesday, Thursday 02:00-03:15  S-115  S. Samuel

PSYC 305: Research Methods in psychology  (3 credits)
Prerequisite: PSYC 220
Research Methodology, history of scientific approach, basic elements, methods, design and structure of research with emphasis on data collection, analysis, interpretation and ethics of social science research, research project. Students will write a research proposal.

Section A  Monday, Wednesday, Friday 10:00-10:50  S-115  F. Rahman
PSYC 315: Cognitive Psychology including Lab (4 credits)
Prerequisite: PSYC 220
Information processing, attention, memory, concept formation, reasoning, problem solving and decision-making. In lab students will replicate classical cognitive psychology experiments, conduct an empirical research project and present their findings.

Section A  Monday, Wednesday, Friday 02:00-02:50  S-115  A. Hameed
Lab:  Monday 01:00-01:50  S-319

PSYC 430: Health Psychology (3 credits)
Prerequisites: PSYC 150, PSYC 280, or permission from the instructor
psychosocial factors relevant to general health maintenance, recovery from disease or injury, stress management techniques, personality characteristics associated with disease, of diet and exercise, theories of pain ad pain management, illness prevention, handling chronic illness and psychosocial rehabilitation, developing and maintaining a healthy lifestyle.

Section A  Monday, Wednesday, Friday 09:00-09:50  N-208  A. Saleem

PSYC 440: Counseling Psychology (3 credits)
Prerequisite: 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  F. Rahman

PSYC 465: Clinical Psychology (4 credits)
Prerequisite: PSYC 340, PSYC 360
Historical background of clinical psychology, clinical assessment, diagnosis and classification of psychological disorders, and psychological intervention, legal and ethical issues in clinical psychological, case reports, (under supervision) with individuals having psychological problems.

Section A  Tuesday, Thursday 11:00-12:15  S-115  S. Samuel

PSYC 480B: Senior Thesis (3 Credits)
Prerequisites: PSYC 305 and permission from the department; open to Seniors majoring in Psychology, PSYC 480 consists of two parts, PSYC 480 A and PSYC 480 B. Students studying PSYC 480 in the Fall semester need to study PSYC 480 B in the spring semester.

An independent research study on a topic chosen by the student. The research study will be supervised by a faculty member of Department of Psychology.

Section A  Monday, Wednesday, Friday 03:00-03:50  N-16  A. Ateeq
Section B  Monday, Wednesday, Friday 03:00-03:50  S-154  A. Hameed
RELIGIOUS STUDIES

ISLM 101: Islamic Education (3 credits)
This course is intended to provide an introductory understanding of Islam. Students learn much about the Islamic way of life in this subject as they study about 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  A. Ur Rehman
Section B  Monday, Wednesday, Friday 09:00-09:50  E-122  A. Ur Rehman
Section C  Monday, Wednesday, Friday 02:00-02:50  E-126  Dr. F. Aziz
Section D  Monday, Wednesday, Friday 12:00-12:50  E-126  Dr. F. Aziz
Section E  Tuesday, Thursday 09:30-10:45  E-122  U. Ur Rehman
Section F  Tuesday, Thursday 11:00-12:15  E-122  U. Ur Rehman
Section G  Monday, Wednesday, Friday 10:00-10:50  E-122  U. Ur Rehman
Section H  Monday, Wednesday, Friday 11:00-11:50  E-122  U. Ur Rehman
Section J  Monday, Wednesday, Friday 11:00-11:50  E-126  Dr. F. Aziz
Section K  Tuesday, Thursday 02:00-03:15  E-126  Dr. A. Ghani

ISLM 103: Islamic Ideology (3 credits)
Prerequisite: ISLM101
This course provides rigorous insight into the Islamic ideology and Islamic way of life. The course is a balanced combination of basic and higher order thinking. It provides ample opportunity to the participants to discuss Islamic ideology through different activities and explore the scope of its practical implication in real life. The course has especially been designed for students who wish to appear in competitive examination.

Section A  Tuesday, Thursday 12:30-01:45  E-126  Dr. A. Ghani

CHRISTIAN STUDIES

CRST 152: Christian Ethics (3 credits)
This course presents the biblical and theological foundations of Christian ethics with a special emphasis on developing the skills necessary to formulate ethical questions and find their solutions in the Bible.

Section A  Monday, Wednesday, Friday 09:00-09:50  E-126  K. Pervaiz
CRST 351: New Testament  
(3 credits)
Prerequisite: CRST 151, CRST 152
This course presents a survey of the literature of the New Testament, enabling students to:
master the New Testament’s fundamental story; gain skills in identifying and interpreting the
various genres represented in the Gospels, Books of Acts and letters of the New Testament;
relate the events recounted in the New Testament to first century historical, political and
cultural environment; gain skills in interpreting the original message of the New Testament
and apply this to contemporary life; and grasp the fundamental issues regarding ancient
New Testament texts and manuscripts.

Section A  Tuesday, Thursday 08:00-09:15  E-126  Dr. B. Wetmore

CRST 352: Christian Theology  
(3 credits)
Prerequisite: CRST 151, CRST 152
This course presents an in depth examination of various approaches to presenting a
reasonable and rational basis for the Christian faith, including investigation of historical
evidences, evaluation of philosophical arguments, examination of biblical reliability, and
explanation of key biblical teachings.

Section A  Tuesday, Thursday 09:30-10:45  E-126  Dr. B. Wetmore

CRST 353: Jesus Christ: Life, Teachings, and Impact  
(3 credits)
Prerequisite: CRST 351
An overview of the life, ministry and teachings of Jesus Christ within their prophetic, cultural
and historical setting as revealed in the four gospels of the Bible with a special emphases on
bible study methods for communicating his teachings to others.

Section A  Monday, Wednesday, Friday 08:00-08:50  E-126  Dr. B. Wetmore
**SOCIOMETRY**

**SOCL 100: Introduction to Sociology** *(3 credits)*
Present fundamental concepts of sociology. Helps students to observe and understand the actions, beliefs, and interactions of people in their own and other societies and to think critically about themselves in relation to social structures in their own and other societies at the individual, group and societal levels. Analyzes current social issues in Pakistan and other countries in terms of sociological concepts. Assignments focus on analyzing and interpreting social issues in societies around the world in sociological terms with practical assignments that reinforce classroom learning.

- **Section A**  Monday, Wednesday, Friday 08:00-08:50  E-324  A. Azeem
- **Section B**  Monday, Wednesday, Friday 09:00-09:50  E-323  S. Jabeel
- **Section C**  Tuesday, Thursday 09:30-10:45  E-324  S. Rashid
- **Section D**  Monday, Wednesday, Friday 11:00-11:50  E-323  S. Jabeel
- **Section E**  Tuesday, Thursday 11:00-12:15  E-324  S. Rashid
- **Section F**  Monday, Wednesday, Friday 02:00-02:50  E-324  S. Jabeel

**SOCL 220: Introduction to Criminology** *(3 credits)*
Prerequisite: SOCL 100
sociological basis to understand deviancy and criminal behavior, causes and consequences of crime, responses to crime and historical transition of ideas about crime, tools for the scientific investigation of criminal behavior.

- **Section A**  Monday, Wednesday, Friday 09:00-09:50  E-324  A. Azeem

**SOCL 350: Sociology of Development** *(3 credits)*
Prerequisite: SOCL 100
An in-depth look at development including theories of development, the impact of development assistance programs, and insights from a wide variety of development models and experiences.

- **Section A**  Monday, Wednesday, Friday 10:00-10:50  E-324  S. Rashid

**SOCL 410: Sociology of Arts & Culture** *(3 credits)*
Prerequisite: SOCL 100, SOCL 301
Investigation of cultural issues sociologically, main range of theoretical approaches to the sociology of culture, exploration of sociological viewpoints on the nature of artistic creation and other forms of cultural activity, 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**  Monday, Wednesday 11:00-11:50  E-324  A. Azeem
SOCL 425: Sociology of Work  
(3 credits)
Prerequisite: SOCL 100, SOCL 201, SOCL 301
Social Groups and how they exercise control over the work environment and make sense of their work experience, central issues to personal identity and social standing, distribution of social power and organization of work, concepts of efficiency, performance, productivity and quality of work from a sociological lens.

Section A  Monday, Wednesday, Friday 12:00-12:50  E-324  S. Rashid

SOCL 455: Sociology of Religion  
(3 credits)
Prerequisite: SOCL 100, 201 and 301
Development of religion in human history; functions of religions for the individual, the religious group and for the society as a whole; organizational structures of religious groups; role of religion in social cohesion and social conflict; the social organization of rituals and religious practices and the phenomenology of religious experiences.

Section A  Tuesday, Thursday 11:00-12:15  E-323  G. Clark

SOCL 499A: Final Year Independent Research Project (First Semester)  
(3 credits)
Prerequisite: Only available to sociology majors who have taken SOCL 100, 201 and 301.
Students select an independent research topic, conduct a literature review, and develop a plan for a proposed research project that includes its methodology, special issue to consider, permissions as needed, and a budget. Work will be done under the supervision of a faculty member in Sociology.

Section A  Tuesday, Thursday 09:30-10:45  E-323  G. Clark

SOCL 499B: Final Year Independent Research Project (Second Semester)  
(3 credits)
Prerequisite: Only available to sociology majors who have taken SOCL 100, 201 and 301.
Based on Research plan completed in the first semester of this course, the student will carry out his / her research project collecting data, analyzing the data,. Writing it up and making a formal presentation of the results to faculty and other students.

Section A  Tuesday, Thursday 02:00-03:15  E-323  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. A. Mughal
Section: B Monday, Wednesday, Friday 02:00-02:50 S-420 N. Mushtaq
Section: C Tuesday, Thursday 08:00-09:15 S-421 Dr. M. Azam
Section: D Monday, Wednesday, Friday 10:00-10:50 S-420 Dr. M. Aslam
Section: E Monday, Wednesday, Friday 03:00-03:50 S-421 N. Mushtaq
Section: F Tuesday, Thursday 02:00-03:15 S-421 M. Aslam
Section: G Tuesday, Thursday 09:30-10:45 S-420 M. Aslam
Section: H Monday, Wednesday, Friday 03:00-03:50 S-420 S. Ayub
Section: J Tuesday, Thursday 11:00-12:15 S-420 Dr. M. Azam

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, moments in probability context.

Section: A Tuesday, Thursday 02:00-03:15 S-420 S. Ayub
Section: B Monday, Wednesday, Friday 02:00-02:50 S-421 M. Aslam
Section: C Monday, Wednesday, Friday 11:00-11:50 S-420 Dr. M. Rasool

STAT 102 / MATH 105: 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. M. Rasool
Section: B Monday, Wednesday, Friday 09:00-09:50 S-421 Dr. M. Aslam

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

Section: A Tuesday, Thursday 11:00-12:15 S-120 M. A. Mughal

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

Section: A Monday, Wednesday, Friday 12:00-12:50 S-421 M. A. Mughal
STAT 205: Business Statistics
Application and concept of probability and probability distributions in business, sample and sampling distributions, statistical inference in marketing and business, polynomial models in supply and demand, model fitting through simple and multiple regression.

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

STAT 302: Experimental Design I
Prerequisite: STAT 202
Principles of design of experiments, ANOVA, covariance and underlying assumptions, model and analysis of CR, RCB and Latin Square designs, fixed, random and mixed effect models.

Section: A  Tuesday, Thursday 12:30-01:45  S-421  N. Mushtaq

STAT 303: Regression Analysis I
Prerequisite: Stat 201
Estimation of regression parameters, residual analysis, inference about regression.

Section: A  Monday, Wednesday, Friday 09:00-09:50  S-420  Dr. M. Azam

STAT 400: Acceptance Sampling
Prerequisite: STAT 305
Introduction to acceptance sampling plans, classification of sampling plans, probability and operating characteristics curves, probability functions, single, double, multiple sampling and sequential sampling by attribute.

Section: A  Tuesday, Thursday 12:30-01:45  S-420  Dr. M. Aslam

STAT 403: Point Estimation
Prerequisite: STAT 304

Section: A  Tuesday, Thursday 11:00-12:15  S-421  Dr. M. Rasool

STAT 406: Applied Multivariate Analysis
Prerequisite: STAT 202
Multivariate data, review of multiple regression analysis, PC analysis and factor analysis, Canonical correlation, Hotelling T procedures, MANOVA, Discriminant analysis.

Section: A  Monday, Wednesday, Friday 08:00-08:50  S-420  Dr. M. Azam

STAT 411: Survey Methods
Prerequisite: STAT 301
Survey types, construction of survey instrument, benchmarking questionnaires, choosing appropriate research designs, estimation of sample size, pilot survey, preliminary and technical reports.

Section: A  Tuesday, Thursday 09:30-10:45  S-421  N. Mushtaq
URDU

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 and journalistic Urdu.

Section A  Monday, Wednesday, Friday 08:00-08:50  E-328  Dr. A. M. Khan
Section B  Monday, Wednesday, Friday 08:00-08:50  E-330  Dr. A.G. Qasim
Section C  Monday, Wednesday, Friday 09:00-09:50  E-328  Dr. A. M. Khan
Section D  Monday, Wednesday, Friday 09:00-09:50  E-330  Dr. A. G. Qasim
Section E  Monday, Wednesday, Friday 10:00-10:50  E-328  Dr. A. A. Virk
Section F  Monday, Wednesday, Friday 10:00-10:50  E-330  Dr. M. Tahir
Section G  Monday, Wednesday, Friday 11:00-11:50  E-328  Dr. A. A. Virk
Section H  Monday, Wednesday, Friday 11:00-11:50  E-330  Dr. M. Tahir
Section J  Monday, Wednesday, Friday 12:00-12:50  E-328  A. Anwar
Section K  Monday, Wednesday, Friday 12:00-12:50  E-330  N. Khokhar
Section L  Monday, Wednesday, Friday 01:00-01:50  E-328  A. Anwar
Section M  Monday, Wednesday, Friday 01:00-01:50  E-330  N. Khokhar

URDU 104: A Selection of Urdu Prose  (3 credits)
Letters (Ghalib), Essay (Sir Syed Ahmad Khan, Wazir Agha and Mushtaq Ahmad Yousafi), Short Story (Prem Chand), Character Sketch (M. Abdul Haque), Extract of Travelogue (Begum Akhtar Riaz-ud-Din).

Section A  Tuesday, Thursday 08:00-09:15  E-328  Dr. A. 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 11:00-12:15  E-328  Dr. A. A. Virk

URDU 204: Urdu Grammar and Literary Terms  (3 credits)
Ilm-ul-Bayan: Ilm-ul-Badih, Adabi Istalahat

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

URDU 207: Literary Journalism  (3 credits)
Difference between journalistic and literary use of language, evolution of literary journalism in Urdu, leading literary journals (Tehzeeb-ul-Ikhlaq, Awadh Puch, Saqi, Adbi Dunya, Noqoosh and Fanoon).

Section A  Tuesday, Thursday 09:30-10:45  E-328  Dr. A. A. 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  N. Khokhar
URDU 301: Modern Urdu Poetry (3 credits)
Modernity and Modernism, Ghazal (Hasrat Mohani, Faiz Ahmad Faiz, Nasir Kazmi), Nazam (Majeed Amjad, Faiz Ahmad Faiz), Lyrics (Hafeez Jalandhry), An analysis of Urdu poetry in the 20th century in a nutshell.

Section A  Tuesday, Thursday 12:30-01:45  E-328  A. Anwar

URDU 304: Biographical Literature in Urdu (3 credits)
Evolution of biographical literature in Urdu, biography of Khawaja Altaf Hussain Haali.

Section A  Tuesday, Thursday 08:00-09:15  E-330  Dr. A. G. Qasim

URDU 405: Principles of Literary Research (3 credits)
Importance of literary research; evolution of Urdu research up till Aab-e-Hayat by M. Hussain Azad; principles and resources of research; terminology and preparation of research paper.

Section A  Tuesday, Thursday 09:30-10:45  E-330  Dr. A. M. Khan

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

Section A  Tuesday, Thursday TBD  TBD  A. Anwar