



APPROVED SCHEME OF STUDY FOR B.Sc. IN CITY AND REGIONAL PLANNING

UNIVERSITY OF ENGINEERING & TECHNOLOGY LAHORE

(Effective from 2015 Session onward)

Approved Scheme of Study					
Ref. No.	Course Title	Contact Hours		(Credit Hours)	
		Theory	Practical	Theory	Practical
1st Semester					
CRP-101	Introduction to City and Regional Planning	3	0	3	0
CRP-102	Technical Drawing	0	5	0	2
HU-001	Functional English	3	0	3	0
CRP-103	Computer Aided Design and Modeling	0	6	0	2
CE-101L	Elementary Surveying	3	3	3	1
MA-114	Applied Mathematics	3	0	3	0
	Total	12	14	12	5
		26		17	
2nd Semester					
CRP-104L	Mapping and Remote Sensing	1	6	1	2
CRP-105	History of Urban Planning	2	0	2	0
CRP-106L	Transportation Engineering	2	3	2	1
IS-101	Islamic and Pakistan Studies I/Ethics and Pakistan Studies I	3	0	3	0
MA-141	Applied Statistics	3	0	3	0
CY-131/ PHY-110	Environmental Chemistry I / Applied Physics	2	3	2	1
	Total	13	12	13	4
		25		17	
3rd Semester					
CRP-201L	Environmental Planning and Management	3	3	3	1
CRP-202L	Architectural Design	1	5	1	2
CRP-203	Applied Geography	2	0	2	0
CRP-204	Information Technology and Database Management	0	5	0	3
HU-200	Technical Report Writing	3	0	3	0

Approved Scheme of Study					
Ref. No.	Course Title	Contact Hours		(Credit Hours)	
		Theory	Practical	Theory	Practical
CRP-205	Development Economics	2	0	2	0
PID-207	Workshop Practice (Model Making)	0	2	0	1
	Total	11	15	11	7
		26		18	
4th Semester					
CRP-206	Sociology	2	0	2	0
CRP-207L	Housing and Urban Development	2	3	2	1
CRP-208L	Transportation Planning	2	2	2	1
CRP-209L	Introduction to GIS	1	3	1	1
IS-201	Islamic and Pakistan Studies/Ethics and Pakistan Studies II	3	0	3	0
HU-111	Communication Skills	0	3	0	1
CRP-210L	Planning Surveys	1	4	1	2
	Total	11	15	11	6
		26		17	
5th Semester					
CRP-303L	Environmental Engineering	3	3	3	1
CRP-304	Planning Law	3	0	3	0
CRP-305L	Urban Regeneration and Conservation	2	3	2	1
CRP-306L	Planning of New Towns	2	6	2	2
CRP-307L	GIS Analysis and Applications	1	3	1	1
CRP-308	Climate Change Adaptation & Disaster management	2	0	2	0
	Total	13	15	13	5
		28		18	
6th Semester					
CRP-309L	Research Methods	2	3	2	1
CRP-310L	Industrial Estate Planning and Design	1	3	1	1
CRP-311L	Landscape Design	1	3	1	1
CRP-312L	Building Construction Technology	2	3	2	1
CRP-313L	Urban Design	2	3	2	1
CRP-314	Active Citizenship and Development Planning	2	0	2	0
	Total	10	15	10	5
		25		15	
7th Semester					
CRP-401L	Master Planning – I	2	5	2	2

Approved Scheme of Study					
Ref. No.	Course Title	Contact Hours		(Credit Hours)	
		Theory	Practical	Theory	Practical
CRP-402L	Finance Planning and Management	2	3	2	1
CRP-405L	Rural Development Planning	2	0	2	0
CRP-403L	Project Planning and Management	1	3	1	1
CRP-404L	Professional Planning Practice	1	5	1	2
CRP-406	Project –I	0	6	0	3
	Total	8	22	8	9
		30		17	
8th Semester					
CRP-408L	Master Planning – II	1	6	1	2
CRP-409L	Estate Management	1	3	1	1
CRP-410L	Land use and Building Control	2	3	2	1
CRP-411L	Regional Planning	2	3	2	1
CRP-407	Project-II	0	6	0	3
MGT-413	Entrepreneurship	3	0	3	0
	Total	9	21	9	8
		30		17	
Grand Total		213		136	

Approved Scheme of Study	
Course Code	Course Details
CRP-101	<p>Introduction to City and Regional Planning Theory Introduction to planning. Definitions and terms. Justification for planning. Aims of planning. Principles of planning. Levels of planning. Elements of planning. Planning and its relationship with other professions. New trends in planning. Functions of professional planners. The planning process. Introduction to planning system in Pakistan. Scope, nature and purpose of physical planning.</p> <p>Land use planning theories e.g. Concentric, sector, and multi nuclei theories, Mixed/combined land use planning theories; Planning theories of Soria-y-Mata, Geddes, Howard, Buckingham, Le Corbusier, Frank Wright, Lewis Mumford, Doxiadis etc.</p>
CRP-102	<p>Technical Drawing</p> <p>Practical Introduction to drawing instruments and scales. Drafting techniques. Measured drawings, Plan, Elevation and Section of buildings. Solid geometry. Introduction to Perspective. Perspective of a building and group of buildings. Rendering; primary and secondary colors. Preparation of land use, density and sub-division maps. Orthographic projection, orthogonal projections of simple solids in simple position, oblique and auxiliary planes. Isometric and pictorial projections of solid figures, making of free hand sketches from solid objects and from orthographic projections. Intersection of surfaces. Development of surfaces.</p>
CRP-103	<p>Computer Aided Design and Modeling</p> <p>Practical Introduction to Computer Aided Design (CAD) for Planners. Basic concepts of computer use in town planning. Computer configuration. Introduction to DOS and Windows. Concepts of electronic drafting. Using the AutoCAD interface. Accessing AutoCAD commands. Units, Scale and Limits. Drawing tools. Drawing different objects accurately. Polylines, fills and hatching. Editing and modifying drawings. Dimensions and text in a drawing. Viewing drawing. 3D Modeling, shading and rendering. Printing or plotting a drawing.</p>
CE-101L	<p>Elementary Surveying</p> <p>Course contents and books to be prescribed by the Civil Engineering Department</p>
HU-001	<p>Functional English</p> <p>Course and books to be prescribed by the Humanities Department.</p>
MA-114	<p>Applied Mathematics</p> <p>Pre-requisite: Algebra of complex numbers; Polar form of complex numbers; Algebra of matrices; Determinants and their properties; Cramer's rule. Algebra of vectors; Scalar and vector products; Rules of differentiation; Techniques of integration</p>

	<p>Contents: Product and quotient of complex numbers in polar form; Properties of complex numbers; Logarithm of a complex number; De Moivre's Theorem, The nth roots of a number; Solution of equations.</p> <p>A review of matrices, determinants and Cramer's rule: Inverse of a matrix through elementary row operations; Solution of the system of linear equations; Eigenvalues and eigenvectors.</p> <p>Function and its different kinds; Inverse of a function; Graphs of some well-known functions; Continuous functions;</p> <p>A review of differentiation: Geometrical interpretation of a derivative; Infinitesimal; Differential coefficient; Derivatives of higher order; Indeterminate forms and L. Hopital's rule; Asymptotes; Increasing and decreasing functions; Maxima and minima of a function; Directional derivatives.</p> <p>Further techniques of Integration; Integration by reduction formula; Fundamental Theorem of Integral Calculus; Definite integral and its properties ; Area enclosed between curves; Arc length;</p> <p>Scalar and vector triple products. Scalar and vector point functions; Differentiation and integration of vector point functions.</p> <p>Formation of differential equations and solution of various types of first order differential equations.</p> <p>Cartesian, cylindrical and spherical coordinates; The ratio formula; Equations of a straight line in R³; Direction ratios and direction cosines; Angle between two straight lines, Distance of a point from a line; Equations of a plane; Angle between two planes; The sphere.</p>
<p>CRP-104L</p>	<p>Mapping & Remote Sensing</p> <p>Theory The field of cartography and planning. Essentials of mapping; Co-ordinate system, Plane, Spherical, Rectangular, latitude and longitude. Scales; representative fraction, graphic and area scale; scale of factor, determination and change of map scale. Map types with respect to scale, content and presentation techniques. Map symbols; specific maps, Graphic design and map reproduction. Aerial photography, Photogrammetry, Interpretation of Mosaics, Characteristics of Aerial Photograph; Introduction to Satellite Remote Sensing (SRS)</p> <p>Practical Assignments on graphic scales, Map compilation, Scale enlargement and reduction, Study and interpretation of topographic sheets, Massavies, Khasra plans, etc. Study of aerial photographs</p>
<p>CRP-105</p>	<p>History of Urban Planning</p> <p>Theory History of civilization and growth of communities, Pre-historic towns and their development; Egypt, Mesopotamia and Indus Valley. Early Greek and Roman Towns, their location, layout setting of public buildings, Markets, recreation and religious centers. Medieval Planning; the grand palace, the influence of the church and castle, the walled city, bastides, market towns and growth of guild system. Renaissance planning; the grand palace, the square, the industrial revolution, its effects on growth of town planning from the 17th to 20th centuries. Town planning during pre-Mughal and Mughal period in India and Pakistan. British Planning practices in India and Pakistan.</p>
<p>CRP-106L</p>	<p>Transportation Engineering</p> <p>Theory ROADS: Classification of roads. Road location; Reconnaissance Survey for new roads. Elements of road curves, super elevation, transition curves, cross-falls. Extra width of carriageways, Sight distances on vertical and horizontal curves. Traffic and road capacities, Gradients, bridge heights and clearances for road and rail crossing, Gradient on bridge approaches and road alignment. Road junctions, Mass</p>

	<p>Haul diagrams. Design data; Speed, Right of way, Width, Soil stabilization. An introduction to pavement design.</p> <p>RAILWAYS: Introduction to railroad, Types of rail tracks and gauges, joints and crossings, yards and stations, right of ways. Introduction to design of railway track; Super elevation, Grade compensation, design components, foundation.</p> <p>AIRPORTS: Principal features; landing strip, runways, taxiways, Apron, hangers, over-run strip, Approach zone, Turning Zone, V.F.R. and I.F.R. Type of air traffic, Speed, and Capacity. Design standards and orientation. Site requirements: Operational, Meteorological, physical and others.</p> <p>Practical Traffic volume and turning tendency surveys. Traffic Flow diagrams for Intersections. Sketch plan of a railway station and / or Airport.</p>
MA-141	<p>Applied Statistics</p> <p>Theory Data Presentation: The organization of data, data types; statistical tabulations; the grouped frequency distribution; the time series, the presentation of data, the bar chart; the pie chart; plotting the frequency distribution; the histogram; plotting the time series; the scatter diagram. Data Analysis: Descriptive Statistics, Measures of central tendency, Measures of dispersion, Introduction to index numbers. Probability: Laws of probability, Counting techniques, Conditional probability, Independent and dependent events, Probability distributions (Binomial, Poisson and Normal), Mean and variance of probability distributions using expectations. Random sampling: Hypothesis testing and identification of relationships among variables through bivariate and multivariate analysis, tests of significance, Methods and forms of correlation: Pearson's correlation, partial and multiple correlations, rank order correlation; regression analysis; Distributions of functions of random variables: chi-square, t and F distributions, tests based on F distribution, the student t distribution.</p>
Shifted to 4th Semester	
IS-101	<p>Islamic and Pak Studies - I / Ethics and Pakistan Studies – I</p> <p>Course to be prescribed by the Islamic Studies Department.</p>
CY-131/PHY-110	<p>Environmental Chemistry I/Applied Physics</p> <p>Environmental Chemistry I</p> <p>Theory Basic Concept of environmental chemistry with respect to rural, urban and industrial activity, chemistry of atmosphere, hydrosphere and lithosphere, pollution sources and their distribution in environment, acid rain, photochemical smog, particulates, Ozone chemistry, Greenhouse effect and Global warming, Chemical toxicology and hazardous waste Organic and inorganic toxins and their analysis Treatment of aqueous effluent streams, industrial and municipal waste streams, degradation and protection, Bioremediation of contaminated soils, new trends in environmental chemistry</p>
CY-131	

PHY-110	<p>Practical Soil analysis, water analysis; Gravimetric and Volumetric methods of analysis for main groups of pollutants Environmental significance and determination of DO, COD, BOD, Cl, Hardness, pH, Alkalinity, TDS, Turbidity and anions in environmental samples using Chemical and Instrumental methods, soil analysis.</p> <p>OR</p> <p>APPLIED PHYSICS</p> <p>Theory</p> <p>Heat: Energy in Transit, Transfer of Heat (Conduction, Convection, Radiation), Thermal conduction of various materials, Heat capacity and specific heat. Acoustics: Sound wave motion, Clarification of sound, Audible sound, Intensity of sound, Sabine’s Formula for Reverberation Time (growth and decay of sound), Acoustics of buildings, Factors affecting the acoustics of a building, Design of good acoustical building, Noise lands and measurements. Light and Optics: Reflection, refraction, diffraction and transmission/propagation of light in building materials, Plane and Polarized Light, Double Refraction. Physics of Climate and Air Pollution: Atmosphere and ocean circulation, Albedo effects at the earth surface, Thermal stratification of water and atmosphere, Ultraviolet capture by the ozone layer, Greenhouse gas storage and efflux from soil, water and organic matter, Gas dynamics of pollutants movement in the atmosphere. Introduction to Nanotechnology: Applications of nanomaterials like nanoparticles, nanowires, etc for buildings.</p> <p>Practical</p> <ol style="list-style-type: none"> 1. To determine the resolving power of diffraction grating. 2. To determine the Modulus of rigidity of material of a wire by Maxwell needle. 3. To find the velocity of sound waves in a given rod with Kund’s tube apparatus. 4. To determine the elastic constant Modulus of rigidity of the material of flat spiral spring. 5. To determine the vertical distance between two points by sextant. 6. To determine the velocity of sound by resonance method. 7. To determine the specific heat of solids. 8. To determine the efficiency of light bulb.
CRP-201L	<p>Environmental Planning & Management</p> <p>Theory Introduction: scope, relationship with city and regional planning. Environmental issues and priorities at global and local level. Environmental problems at home, workplace, and city. Sustainable Development: conceptual issues. Cities and sustainability issues. Urban sprawl and compact development. Regulating industrial and transport pollution. Environmental assessment. Environmental plans and policies. National Conservation Strategy. Environmental quality standards. Ecology, pollution/waste and hazards. Introduction to natural resource management, emerging concepts in environment planning and management.</p> <p>Practical</p>

	Studies and analysis of environmental degradation in urban and rural communities. Preparation of environmental management plan for commercial, industrial and residential areas of the city or for the whole city.
CRP-202L	<p>Architectural Design</p> <p>Theory Basic Understanding of design: Design elements (line, color, shape etc), design principles (contrast, repetition, balance etc), design techniques (establishing requirements, analyzing, setting priorities, developing links/bubble diagrams etc), design standards, space requirements, aesthetic in design, design parameters.</p> <p>Understanding of Architectural Drawings: Plan, elevation, section, perspective or 3-D etc, submission drawings.</p> <p>Design of building components and surrounding: Staircase design, doors and windows (sill level, lintel level, placement of doors and windows, O.H.W.T, septic tank and its section, key plan etc), site analysis , conceptual design and detail designing.</p> <p>Design with climate: Control of Climatic factors, Building Orientation, consideration of sun and wind in design</p> <p>Practical Design of house or flat for various plot sizes; Design of mosques; school design etc</p>
CRP-203	<p>Applied Geography</p> <p>Theory</p> <p>Introduction; Definition, branches and scope of geography. Basic concepts in physical and human geography and their application in city and regional planning Earth and its Origin; the Universe, the solar system and the earth, earths shape and size, rotation and revolution, distribution of land and water Lithosphere; internal structure of the earth, rocks and their types(igneous, sedimentary, metamorphic), plate tectonics, mountain building, geomorphic processes (internal external), earthquakes, volcanic activity, weathering and mass wasting Atmosphere; composition and structure of atmosphere, weather systems and their weather disturbances with special reference to temperature, air pressure. Hydrosphere; configuration of ocean floor, temperature and salinity of the ocean water, movements of the ocean waters (waves, currents, and tides) Biosphere; population distribution and density of the world including Pakistan and population change, location and characteristics of economic activities related to production and services with demographic factors Soil Geography; formation, physical properties and classification, terrestrial biomes (types and distribution)</p>
CRP-204	<p>Information Technology and Database Management</p> <p>Practical Computer as a tool for planning data analysis. Use of Word processing package programs such as Microsoft Word for report writing. Use of Spreadsheet package programs such as MS Excel for storage, analysis and graphic presentation of planning data. Presentation of planning data and diagrams using programs such as Microsoft Power Point.</p>

	<p>Introduction to Statistical Package for Social Sciences (SPSS); MS Access. Questionnaire coding and data preparation for analysis on computer. Coding manual and coding sheets. Data entry into SPSS. Editing data values and controlling the display of data. Defining variables and selection of a procedure from the menus to calculate statistics. Re-coding of existing variables and computing of new variables. Assigning variable labels and value labels. Constructing simple frequency tables and cross-tables. Creating statistical diagrams and charts. Editing the results displayed in the output navigator.</p> <p>Writing of an essay on a planning topic, using a word processing package; Assignments on data storage, analysis and presentation using various package programs. Statistical analysis of planning survey data using SPSS and preparation of tables, cross-tables and charts.</p>
HU-200	<p>Technical Report Writing</p> <p>Course and books to be prescribed by Humanities Department.</p>
CRP-205	<p>Development Economics</p> <p>Theory Basic concepts of Economics, Economic organization: types and functions of economic systems, Islamic economic order, Demand and Supply, Price, Market, Elasticity, Marginal Utility, Monopoly, Marginality, Income distribution, Equality and equity, Gross and net national product and income. Per Capita Income. Basic factors of production and their reward; land, labor, capital and organization. Rent, Wages, Interests and Profits. Laws of return. Economic resources of Pakistan, economic development theories. Role of economics in planning & development. Micro credit and income generation programmes. Economic planning in Pakistan; Five Years Plans, socio-economic policies in Pakistan.</p>
PID-207	<p>Workshop Practice (Model Making)</p> <p>Practical</p> <p>Introduction to the art and techniques of model making; developing skills in 3D model of houses, commercial buildings, housing schemes, and new towns through drawings reading and model making; Technology and materials used for construction; Safe operation of hand tools, power tools, stationery and other equipment of model fabrication and finishing techniques; Use of various materials for specific models of town planning and design projects (on real scale)-Type of materials to be explored and used for model making including: Wood, Clay, Card Board, Modeling Board, Styrofoam, Plaster of Paris and Glass by Practical exercises, Audio/video clips and Case studies.</p>
CRP-206	<p>Sociology</p> <p>Theory Social groups, Typology, Nature, Patterns of interaction, social and cultural values. Social control, Attitude, perception and Behavior symbols. Prejudices and taboos, Collective behavior, Group expectations, Social structures, Status, Class, Role, Social stratification. Age, Sex, Marital Composition, Mortality, components of demographic change, Urban society, Behavior and personality, Formal and informal association, Bureaucratic organization. Kinship relations, Institution, Social processes and values and norms. Rural culture. Social processes and social change in population. Viz. transformation and natural increase, characteristics and effect of growth trend on housing, utilities and community facilities. Significance of family, Household and social institutions in Urban planning. Household, Income, Dependency ratio and Employment pattern.</p>

<p>CRP-207L</p>	<p>Housing and Urban Development</p> <p>Theory Housing problems in developed and developing countries with special emphasis on Pakistan. Housing supply and demand, qualitative and quantitative aspects, Socio-economic aspects. Housing standards and densities. Evaluation of housing shortage and need for the future. Planning and design of housing schemes; layout patterns, housing types and their suitability for various climatic regions. Housing policies and programs run in public and private sector. Housing finance and administration, Urban Development relationship with housing.</p> <p>Practical Housing types and sizes, Housing layout patterns, Design of a housing scheme. Housing workshop.</p>
<p>CRP-208L</p>	<p>Transportation Planning</p> <p>Theory Communication through road, water, air, and their influence upon national, regional and local development. Urban circulation, Land use and traffic interaction, Travel time, Mass transit system, and Inter modal system. Development of road system, Design of roads in relation to different types of traffic and buildings, including road width; traffic lanes and means of access; service roads and laybys; Segregation of vehicular and pedestrian traffic. Planning of roads in relation to existing features, trees and streams. Traffic Engineering: Traffic and parking surveys and their interpretation, Traffic capacity and regulation. Requirement of different types of traffic, moving and stationary. Planning of road junctions and intersections to facilitate free flow of traffic with safety and comfort for all users. Appropriate siting and planning of car parks and garages (including mechanical methods) above and below ground; petrol filling stations and services areas. Airport approach requirements, Factors affecting the location and planning of airports. Introduction to Trip Generation, Trip Distribution, Modal Split and Traffic Assignment Models.</p> <p>Practical Assignments on improvement of roads and design of intersection in an urban area. Traffic and parking surveys, Travel time and delay studies.</p>
<p>CRP-209L</p>	<p>Introduction to GIS</p> <p>Theory Introduction, Definitions, Key components, Raster Data Model, Vector Data Model, Attribute Data Model, Data Acquisition Techniques, Data sources, Data capturing techniques and procedures, Data Transformation, Visualization of spatial data, Layers and Projections, Map Design, Spatial Analysis: Overlay Analysis, Neighborhood functions, Network and overlay analysis, buffering and geo-referencing, Querying: selecting, joining, and calculating data, Data Classification and Symbology, Scale, Projection and Coordinate Systems, Creating and Editing GIS data.</p> <p>Practical Introduction to GIS Lab (hardware / software), Raster/Vector/Attribute Data Display, Scanning, Digitization, Coordinate based point mapping, Raster / Vector Conversion, Data layer integration and display of different projections, Map layout, Data Classification and Thematic Mapping, Handling with Topological Errors, Overlay and network analysis.</p>
<p>CRP-210 L</p>	<p>Planning Surveys</p>

	<p>Theory Nature and purposes of planning surveys, Basic concept of variables, traits and indicators. Identification of goals and objectives of planning studies. Nature and contents of Urban and Regional Surveys, Sampling: purpose, types and methods; Sampling errors, measures to control sampling errors. Tools for data collection, Questionnaires, Interview schedule, Observation sheet, etc. Techniques for conducting various planning surveys such as Land use, socio-economic and housing, health, education, industry, commerce, facilities and services.</p> <p>Practical Typical studies; land use, socio-economic and housing, industrial, commercial, education, health, and infrastructural services. Tabulation of data and preparation of analytical reports.</p>
HU-111	<p>Communication Skills</p> <p>Course to be prescribed by the Humanities Department.</p>
IS-201	<p>Islamic and Pak Studies–II / Ethics and Pakistan Studies–II</p> <p>Course to be prescribed by the Islamic Studies Department.</p>
CRP-303L	<p>Environmental Engineering</p> <p>Theory General introduction to environmental engineering, Basic infrastructure objectives. Water supply, components, viz. collection from sources, transmission, treatment and distribution, water consumption. Planning guide for water consumption; water demand, water quality, fire hydrants. Design of water supply lines and systems.</p> <p>Sewerage disposal; the components of sewerage system collection, treatment and disposal. Design criteria, Design investigation, Quantity of sewage, Average daily sanitary flow, General investigation, Design flow, Elementary hydraulics of sewers, Treatment plants, Location and site requirements, Sewer construction, Storm drainage, Basic data, Design criteria, Maximum and standard level interceptors and collectors, Maximum drainage zones, Run off of streets and urban areas. Introduction to water shed areas and flood control.</p> <p>Basic infrastructure in relation to rural settlements, Environmental quality, Refuse disposal; Refuse generations, Quantity, Composition, Collection, Transportation and disposal sites. Landfill areas, Air pollution and acoustic problems in urban areas.</p> <p>Introduction to the design and layout of vital utility services like gas, electricity and telephones in urban areas.</p> <p>Practical Design of services such as water supply, sewerage, drainage etc. in a typical development scheme.</p>
CRP-304	<p>Planning Law</p> <p>Theory</p>

	<p>Outline of planning legislation and its evaluation in U.K and U.S.A. Factors, which have promoted the enactment of such legislation. The legislative basis for planning and implementation of plans. The relationship of central and local government.</p> <p>Concepts, definitions and objective of zoning and land subdivision regulations.</p> <p>Legislation relating to city and regional planning in Pakistan including various acts, orders, ordinances and bylaws concerning Master Planning, Area Development Schemes, Land Acquisition, Housing, Building Control, Transport, Public Health and Environmental protection.</p>
CRP-305L	<p>Urban Regeneration and Conservation</p> <p>Theory Consequences of urbanization; urban growth, Slums and squatter settlements; definitions; identification, causes and potential. Urban renewal; Concept, approach and process. Strategy for information and analysis. Renewal goals, objectives and targets for residential, commercial, industrial and other urban categories. Impediments to renewal efforts and their implications, tools, programs and overall policies for urban renewal. Treatment mechanism; clearance and redevelopment, conservation and rehabilitation, Environmental improvement and maintenance policy and strategies. Introduction to application of quantitative models in renewal planning.</p> <p>Practical Urban renewal workshop with an objective to prepare an urban renewal Programme for a part of a city or a slum area.</p>
CRP-306L	<p>Planning of New Towns</p> <p>Theory Understanding the requirements of a modern city as a dynamic organism. The need for integrated approach towards planning of various component parts of a city. Examples of Modern Cities: Brasilia, Canberra, Islamabad, Chandigarh, and New Delhi.</p> <p>Site selection and resource analysis: natural, cultural and esthetic factors to be considered. Process of planning and designing a new town, various approaches. Space standards and requirements for various land use activities, densities, etc. Application of space standards and locational criteria for various landuses,</p> <p>Zoning plan; Planning and design for landuse, Layout of roads and streets. Neighbourhood planning; Layout plan of housing blocks and public facilities and services. Town center plan; planning of civic, administrative and commercial areas. Town park; elements of design of a town park and landscape planning of a system of open spaces and parks, Site and landscape construction details.</p> <p>Practical Selection of site for a new town. Preparation of a zoning plan and neighborhood plan. Planning of a town center and town park. Model making for new town.</p>
CRP-307L	<p>GIS Analysis and Applications</p> <p>Theory</p>

	<p>Introduction to GIS and its related applications. GIS data and analysis for planning and public policy. Use of GIS in solving planning problems. Review of existing GIS applications in planning, such as master plan monitoring and implementation, housing and socioeconomic analysis, utilities, facilities and infrastructure management, transportation and traffic management etc. Deep insight of applied Projects in Urban and Regional Geographic Information Systems.</p> <p>Practical Assignments on GIS applications in planning related issues. Assignments on drawing editing, loft objects, materials, lights, cameras, rendering, and animation using 3D Modeling software.</p>
CRP-308	<p>Climate Change Adaptation & Disaster Management</p> <p>Theory Consequences of climate change, such as sea level rise and disruption of the global food supply, strategies to cope climate change challenges in urban and regional planning, assessing the urban contribution to climate change, Role of IPCC, Governing climate change in the city; charting the emergence of urban climate change responses, Understanding the nature of urban climate governance, International initiative and programs for climate change protection, skeptics of climate change, National Climate Change initiatives in Pakistan.</p> <p>Introduction to Hazards and Disasters (Concepts & Definitions), Hazard Dimensions, Distributions, Patterns, Associated Processes & History of Hazards Research, Social & Economic Aspects of Natural and man-made Hazards, Individual and Community Adjustments: Perceptions, Attitudes and Behavior, Hazard and Disaster Investigation Hazard Vulnerability Assessment & Mapping, Element at risk mapping Risk Management, Disaster Management Cycle, Pre-Disaster Phase (Prevention, Mitigation & Preparedness), Disaster Phase (Response), Post-Disaster Phase (Rehabilitation, Development), Damage assessment, loss analysis, Risk management in development planning. Disaster management policies and infrastructure at local and national level and international level. Case Studies.</p>
CRP-309L	<p>Research Methods</p> <p>Theory Introduction to research. Characteristics of scientific research. Ethical considerations in research. Types of research. The research procedure. Writing statement of problem and research objectives. Research methodology and its components. Literature review. Theory and research. Data collection techniques, data processing and interpretation. Writing up of the thesis and dissemination of research work.</p> <p>Practical Review of a thesis. Preparation of a research proposal for the Project.</p>
CRP-310L	<p>Industrial Estate Planning and Design</p> <p>Theory: Types of Industries, Industrialization, Concepts and Theories, Industrial Development Models, Services Provision Mechanism, Requirements for establishing different types of industries; Locational Factors, Environmental Factors, etc., Planning and Design considerations of industrial estate, Role of industries in the development of economic growth, Management and Public-Private partnership in Industries establishments, Industrial Policy in Pakistan, Industrial Estates in Pakistan, Government's Role in Industrial development,</p>

	<p>Practical: Visits to different industrial estates, Preparation of most acceptable industrial estate plan</p>
CRP-311L	<p>Landscape Design</p> <p>Theory</p> <p>Introduction: Introduction to Landscape Architecture, its importance in field and overlapping with other fields of design. Brief introduction to historical development of Landscape design, impacts of urbanization and rural development on the landscape in specific cultural, historical and environmental context.</p> <p>Physical planning concerns: Various planning considerations, Landscape symbols, elements, principles and visual communication techniques to develop good Landscape design, familiarization with plant species and their use in the Landscape projects. Common varieties of plants and trees and their forms, profiles, shapes, propagation techniques, suitable soil conductions, desired solar orientation, etc. Techniques of site development for the hard elements of landscape architecture such as walls, paving, steps, decks etc.</p> <p>Execution: Integration of landscape features in urban projects to increase the aesthetic quality, their specific requirements and issues involved. Site considerations and detail designing including landscape features and grading design of simple structures. Landscape drawings, sketches and three dimensional illustrations of design so that the projects can be brought to implementation stage.</p> <p>Practical Site visits, small Landscape projects (residential, outdoor sitting for café, etc). Site planning for larger projects with focus on Landscape features.</p>
CRP-312L	<p>Building Construction Technology</p> <p>Theory</p> <p>Introduction to Building Materials, Lime, Cement, Brick, sand, Building Blocks, Prestressed and precast members, Timber, Mild Steel, Cast iron, Brass, Aluminum and Wood, etc.</p> <p>Components of a building structure; Foundation, Walling, Roofs, Beam, Columns, Doors and Windows, Floors, Lintels. Introduction to site preparation, Brick work and bonding, Plumbing, Electricity and Gas points, Insulation and Fire Protection</p> <p>Practical Drawing of various building components, Charts of characteristics of building material. Small exercise in project planning, Site selection orientation and setting out for construction</p>
CRP-313L	<p>Urban Design</p>

	<p>Theory</p> <p>Introduction to Urban Design: Definitions, Objectives, Relationship with allied subjects. Dimensions of Urban Design. Urban design process. Planning and design of Islamic cities: Urban form and design principles, typical examples. Modern concept of urban form: Impact of industrialization and technological advancement on design of cities.</p> <p>Studies for urban design; Visual surveys, Basic elements and other facts of form such as Land form, Climate, Shape, Size and Density, Pattern, Grain and texture, Vistas, Skylines and Historical aspects. Urban Design and People: Significance and techniques of public participation in urban design projects. Principles of urban designs: Scale, Urban mass, Activity and circulation. Urban design techniques. Street furniture and landscape design. Responsive Environment: Key issues to be considered. Principles of smart growth and other related concepts, international practices, analysis and discussions.</p> <p>Practical</p> <p>Typical Urban Design project involving visual survey and identification key issues of responsive environment as well as design of commercial and institutional/public building and Landscaping and development.</p>
CRP-314	<p>Active Citizenship and Development Planning</p> <p>Theory</p> <p>Introduction to the concept of active citizens and citizenship; rationale, multiple expression of citizenship, team-building and networking within the group. Linking active citizenship with development planning. Learning about social responsibility, identity, understanding our space in society and world, social decision making process, collectivism, avoiding misunderstandings, conflict resolution, dealing with people's power to solve the conflicts in society and gender sensitization. Methods to influence decision-makers, value and importance of advocacy and diplomacy in public life. Inclusive development. Case study social action projects. Project delivery needs and benefits assessments.</p>
CRP-401L	<p>Master Planning-I</p> <p>Theory</p> <p>Development planning process: goals and objective of comprehensive planning, Planning parameters and various approaches. Structure planning versus Master Planning approach. The new paradigm for comprehensive development planning of urban and rural areas in Pakistan. Planning surveys and studies of component subjects as a basis for development of plans.</p> <p>Practical</p> <p>Planning surveys and studies.</p>
CRP-402L	<p>Finance Planning and Management</p> <p>Theory</p> <p>Methods of estimating the cost of development plans and individual projects and means of financing. Effect of affordability on the densities and space standards. Capital Improvement Programming. Internal rate of return and Cost Benefit Analysis. Time value of money, compounding and discounting measures of project worth. Preparation of development budgets and planning project evaluation. The concepts of inflation, depreciation, and valuation.</p> <p>Practical</p>

	Assignments on costing and financing of schemes, using affordability models. Cost benefits analysis of a project.
CRP-403L	<p>Project Planning and Management</p> <p>Theory Process of project planning and implementation in Pakistan. Relationship between policies, plans and projects in urban and regional development. Project identification and formulation. The PC_I and P_II Forms. Financial and economic appraisal and selection of projects. Legal backing for the plans and projects. Social acceptability of projects. Sanctioning authorities and approval of projects. Tenders, Contracts, Site supervision etc. The role of project execution authority. Scheduling of project components; the Critical Path Method (CPM). Monitoring and evaluation of projects; Planning Evaluation and Review Technique (PERT). Community participation for effective implementation and monitoring of projects. Introduction to concepts of arbitration, litigation, easement and dilapidation.</p> <p>Practical Preparation of a PC-I and PC-II form f or a development project. Evaluation of an existing project.</p>
CRP-404L	<p>Professional Planning Practice</p> <p>Theory Concepts and need of professional ethics and norms of good governance including accountability, transparency, rule of law, confidentiality etc. Role and responsibilities of professional bodies in promoting professional ethics, PCATP code of conduct. Entrepreneurship skill and professional ethics. Interaction between planners and stakeholders in the city and region such as politicians, bureaucrats/ administrators, media, judiciary, academia, NGOs and civil society. Resolution of conflicts in the implementation of plans. Planning contract documents / agreements, fee structure, arbitration. Tenders, contracts etc. procurement of goods and human resources. Social and ethical audit of development plans and their implementation.</p> <p>Practical Assignment pertaining to above theoretical concepts. Practical training in planning agencies, authorities, departments and consultant organizations etc.</p>
CRP-405L	<p>Rural Development Planning</p> <p>Theory Study of interaction systems of rural communities, institutions, activities, structures, natural resources, environment, politics and social process, Rural development programs in Pakistan, rural – urban interaction, elements of conceptual framework of modern rural planning, rural poverty causes and strategies to combat poverty in rural areas, rural areas design strategies – rural water supply, sanitation and community infrastructure, structural transformation of rural areas, food insecurity - causes and measure to enhance food security.</p>
CRP-406	<p>Project-I Development of proposals and devising of methodology of research projects pertaining to various City and Regional Planning Problems.</p>
CRP-408L	<p>Master Planning-II</p> <p>Theory</p>

	<p>Policy planning in the light of existing studies and strategies. Contents and purpose of Master Plan. Local development plans such as Subject Plans and Action Area Plans. Programming, financing and legislating the plan provisions. Administering the Master Plan; Coordination between various line departments and the local planning agency. Public participation as a tool for effective implementation of the plans and component projects.</p> <p>Practical Preparation of a Master Plan, Local Plans like Subject and Action area plans for a town.</p>
CRP-409L	<p>Estate Management</p> <p>Theory Introduction: origin and need for Estate Management. Land planning and management for urban expansions. Operation of land prices and urban development in Governmental and informal sector. Introduction to land revenue system. Land titling and registration process. Property transfer and disputes. Property sale, values and taxes. Demarcation of land and plots. Plot allotment criteria. Land management system for the modern city.</p> <p>Practical Preparation of a land management project for urban expansion.</p>
CRP-410L	<p>Land use and Building Control</p> <p>Theory Building control as a tool for implementation of Master Plan and other Local Plans. Zoning as a tool for development control. Environmental conservation through building and development control. Submission of Building applications. Procedural checks; Ownership verification, Planning application forms, drawings, fees, No objection certificates, advertisements, etc. Site visits, serving of notices. Fines and compounding of violation. Analysis of building proposals: Conformity with the development plans, land use zoning, planning criteria, building bylaws, design guidelines, building line/ parking requirements, chamfer requirements, construction over cultivators etc. Consultation with the neighbours, roads authority and line departments and allied agencies. Decision about approval of planning proposal. Completion certificates. Demarcation and removal of encroachments. Declaration and demolition of dangerous buildings. Litigation involved in building control. Commercialization policy and its effectiveness.</p> <p>Grant of No Objection Certificate for private development schemes. Approval of layout plans. Technical approval and final approval of development schemes.</p> <p>Practical Survey of various buildings, markets and plazas regarding the provision of parking space, building lines/ setbacks etc. Evaluation of building and development control practices in the development authorities and municipal corporations.</p>
CRP-407	<p>Projects-II</p> <p>Research projects pertaining to various City and Regional Planning Problems.</p>
CRP-411L	<p>Regional Planning</p>

	<p>Theory</p> <p>Part A .The Context of Regional Planning: The concept of region, Categories of regions, Regional planning , Levels of Regional planning, the need for regional planning Objectives of Regional Planning, Concept of Inter and intra-regional planning, Concept of Geddes TRIADE , Management of Regional Development ,Urbanization and Regional Growth ,European Regional Development Strategy</p> <p>Part B. Analysis of Regions: Inter and intra-regional inequalities, Aggregate Growth models, Growth Pole Theory, Central Place Theory, Economic Development Models for Regions</p> <p>Part C Strategies of Regional Planning: Theory and concepts of sustainable development, Strategies of Balanced development, Regional and local Smart Growth Strategies, Strategies and tools of infrastructure planning , Infrastructure demand assessments ,Demand forecast for housing, Land supply and capacity analysis, Land suitability analysis,</p> <p>Practical</p> <p>Preparation of Regional Plan, Preparation scenarios of Regional Plans, Presentation of Regional Plan, and Implementation Procedure of Regional plan</p>
MGT-413	<p>Entrepreneurship</p> <p>Course contents and books to be prescribed by IBM department</p>