CURRICULUM

OF

CITY AND REGIONAL PLANNING
BS (HONS)
MS (HONS)

(Revised 2006)

HIGHER EDUCATION COMMISSION
ISLAMABAD
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Curriculum of a subject is said to be the throbbing pulse of a nation. By looking at the curriculum one can judge the state of intellectual development and the state of progress of the nation. The world has turned into a global village; new ideas and information are pouring in like a stream. It is, therefore, imperative to update our curricula regularly by introducing the recent developments in the relevant fields of knowledge.

In exercise of the powers conferred by sub-section (1) of section 3 of the Federal Supervision of Curricula Textbooks and Maintenance of Standards of Education Act 1976, the Federal Government vide notification no. D773/76-JEA (Cur.), dated December 4, 1976, appointed University Grants Commission as the competent authority to look after the curriculum revision work beyond class XII at bachelor level and onwards to all degrees, certificates and diplomas awarded by degree colleges, universities and other institutions of higher education.

In pursuance of the above decisions and directives, the Higher Education Commission (HEC) is continually performing curriculum revision in collaboration with universities. According to the decision of the special meeting of Vice-Chancellors’ Committee, curriculum of a subject must be reviewed after every 3 years. For the purpose, various committees are constituted at the national level comprising senior teachers nominated by universities. Teachers from local degree colleges and experts from user organizations, where required, are also included in these committees. The National Curriculum Revision Committee for City and Regional Planning Science in its meeting held in July 10-12, 2006 at the HEC Regional Centre, Karachi revised the curriculum after due consideration of the comments and suggestions received from universities and colleges where the subject under consideration is taught. The final draft prepared by the National Curriculum Revision Committee duly approved by the Competent Authority is being circulated for implementation by the institutions.

Prof. Dr. Altaf Ali G. Shaikh
Adviser (Acad/R&D)

August 2006
Abbreviations Used:
CRC. Curriculum Revision Committee
VCC. Vice-Chancellor’s Committee
EXP. Experts
COL. Colleges
UNI. Universities
PREP. Preparation
REC. Recommendations

ORIENTATION COURSES
IMPLE. OF CURRI.
BACK TO STAGE-I
PRINTING OF CURRI.
REVIEWS COMMENTS
INCORPORATION OF REC. OF V.C.C.
FINALIZATION OF DRAFT BY CRC
CONS. OF CRC.
PREP. OF DRAFT BY CRC
APPROVAL OF CURRI. BY V.C.C.
FINAL STAGE
PREP. OF FINAL CURRI.
APPRAISAL OF 1ST DRAFT BY EXP. OF COL./UNIV
COLLECTION OF REC
CURRI. IN DRAFT STAGE
CURRI. UNDER CONSIDERATION
FOLLOW UP STUDY
INTRODUCTION

The final meeting of the National Curriculum Revision Committee in the discipline of City and Regional Planning was held from 10\textsuperscript{th} to 12\textsuperscript{th} of July, 2006 at the HEC Regional Centre, Karachi.

The following members attended the meeting:

1. Prof. Dr. S. Shabih-ul-Hassan Zaidi, Convener
   Dean, Faculty of Architecture and Planning,
   University of Engg. & Technology, Lahore

2. Plnr. Noor Muhammad Memon, Member
   Consultant,
   Apt. 606, Salalah Luxury Apartments,
   Dr. Daudpota Road, Cantt Station, Karachi

3. Mr. Afzal Ahmed Khan, Member
   Town Planner,
   Engineering Consultants, Karachi

4. Dr. Abdul Rehman, Member
   Professor,
   Department of Architecture,
   University of Engg. & Technology, Lahore

5. Engr/Plnr T. A. Jafri, Member
   Chief Town Planner,
   Karachi Master Plan Project 2020, Karachi

6. Mr. Imran Hameed Durrani, Member
   Director Planning Projects,
   Balochistan University of Information Technology & Management Sciences (BUITMS), Quetta

7. Mr. Ravindar Kumar, Member
   Assistant Professor,
   Department of Architecture and Planning,
   NED University of Engg. & Technology, Karachi

8. Arch. Sultan Muhammad Zuberi, Member
   Town Building Control Officer,
   Karachi Building Control Authority,
   Civic Centre, Gulshan-e-Iqbal, Karachi
9. Mr. Muhammad Asif Nawaz, Member
Assistant Professor,
Department of Architecture & Planning,
Dawood College of Engg. & Technology,
Karachi

10. Ar/Plnr. T. Sadia Fazli, Member
Registrar,
Pakistan Council of Architects & Town Planners,
111 RSM Square, Shaheed-e-Millat Road,
Karachi

11. Mr. Sajjad Hussain Sajjad, Member
Lecturer in Physical Geography,
Department of Earth Sciences,
University of Sargodha, Sargodha

12. Mr. Mubushar Hussain, Member / Secretary
Assistant Professor,
Institute of Geographical Information Systems,
National University of Sciences & Technology,
Islamabad

The following members participated in the Preliminary Meeting held on 23-25 January 2006, could not attend the final meeting:-

1. Prof. Dr. Dost Ali Khowaja, Member
Dean, Faculty of Architecture and Planning,
Mehran University of Engg. & Technology,
Jamshoro

2. Dr. M. Umar Khattak, Member
Head of Department,
Institute of Geographical Information Systems,
National University of Sciences & Technology,
Islamabad

3. Mr. Waqar Akber Rizvi, Member
Architect,
Department of Architecture & Planning,
Dawood College of Engg. & Technology,
Karachi

4. Plnr. Aftab Muhammad Khan, Member
Town Planner & Architect,
President, Aftab & Associates,
A.I.LCHS, Gulistan-e-Jauhar, Karachi
5. Mr. Masood ul Hasan Jafri,  
Planner, Pakistan Council of Architects & Town Planners,  
Director, Consultants Group, Karachi

6. Ms. Maryam Fayyaz,  
Lecturer,  
Department of Architecture,  
University of Engg. & Technology, Lahore

The meeting was inaugurated by Prof. Dr. Syed Altaf Hussain, Member (Acad/R&D), Higher Education Commission. In his opening address Prof. Dr. Altaf warmly welcomed the participants on behalf of the Chairman, Higher Education Commission. He described the role and objectives of HEC in the curriculum development to improve the standard of education and to revise and update the existing curriculum to bring it in line with national and international requirements and introduce innovation to ensure quality of education and uniformity of curricula in the universities and affiliated colleges. He also recommended that Social Sciences contents should be enhanced in the curriculum and the credit hours should be between 124 and 136. Moreover, the research thesis should be compulsory particularly at the master level. It is clarified that these are baseline curriculum to be followed by universities.

Due to the absence of Prof. Dr. Dost Ali Khowaja (Convener of the preliminary meeting) Dr. S. Altaf Hussain requested Prof. Dr. S. Shabih-ul-Hassan Zaidi to become the Convener of this final meeting. The Convener proposed the name Mr. Mubushar Hussain (Town Planner) to serve as Secretary of this meeting. Members accepted unanimously the proposal of the Convener.

The National Curriculum Revision Committee discussed and reviewed the existing curriculum of B.Sc. and M.S City and Regional Planning in its first meeting held on January 23-25, 2006 at HEC Regional Centre, Karachi. In the meeting the NCRC re-considered the curriculum and suggested new courses in the selected areas of study and set it at par with international standards to meet the challenges of the world and job oriented as per policy criteria of HEC. Some new reading materials were also suggested by the experts participating in the meeting and included in the revised curriculum. After a detailed discussion and deliberation the committee finalized the curriculum of BS and MS City and Regional Planning courses. The meeting finished with a vote of thanks by the members for Prof. S. M. Iqbal, Director, HEC, Regional Centre, Karachi, Prof. Dr. S. Altaf Hussain, Member (Acad/R&D) HEC Islamabad and Malik Ghulam Abbas, Deputy, Director (Curriculum), HEC Islamabad for facilitating the meeting and providing guidelines for revision of the courses.
Part-I
BS PROGRAMME (4-YEARS) IN “CITY AND REGIONAL PLANNING”

OBJECTIVES

Following are the major objectives of the curriculum for BS in “City and Regional Planning”:

1. To bring the city and regional planning professionals to the level of the international standards
2. To incorporate modern philosophies, techniques and technologies in the curricula.
3. To introduce a new visionary insight among the students in the profession of city and regional planning to meet the challenges of the modern age.
4. To impart skills and knowledge to deal with the increasing number of problems and issues at urban and regional scales with futuristic approach and ground realities.
5. To equip the students with practical knowledge and experience of dealing with real life issues relating to the built environment.
## SCHEME OF STUDIES FOR BS (HONS)

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**Total Credit Hours**  = (150)

**NOTE:** Internship of 4-6 weeks with credit hours (0-0) is recommended in the Third Year (5th or 6th Semester) to gain practical experience and to provide exposure to the students in the field of City and Regional Planning.
DETAIL OF COURSES FOR B.Sc.
CITY AND REGIONAL PLANNING

FIRST SEMESTER

CRP-101  INTRODUCTION TO PLANNING
Theory:

Practical
Study of planned and unplanned areas in a city.

Books Recommended
2. Bhatti, A. K., Town Planning for the Third World, Feroze Sons Ltd. Lahore, 1994
4. Meconnalb Shean, Theories for Planning, London, Hutchinson

CRP-102  TECHNICAL DRAWING
Practical
figures, making of free hand sketches from solid objects and from orthographic projections. Intersection of surfaces. Development of surfaces.

Books Recommended
3. Ilan Jefferies and David A. Madsan, Basic Drafting Skills; Work Book, Delmar Publishers Inc. New York, 1991,

HU-101 ENGLISH-I (Compulsory)

Aim/s: To enhance language skills and develop critical thinking

Contents:
- Use of grammar in context
  - Tenses: meaning & use
  - Use of active and passive voice
  - Use of articles and prepositions
  - Different sentence patterns
  - Combining sentences
- Oral Communication Skills (Listening and Speaking)
  - Express ideas/opinions on topics related to students’ lives and experiences
  - Participate in classroom discussions on contemporary issues
- Reading and Writing Skills
  - Skimming
  - Scanning
  - Identifying main idea/topic sentence
  - Inference and prediction
  - Recognizing and interpreting cohesive devices
  - Note taking and note making
  - Generating ideas using a variety of strategies e.g. brainstorming
  - Developing a paragraph outline (topic sentence and supporting details)
  - Vocabulary building skills
- To develop the ability to use a dictionary

Reference Books:
1. Collins COBUILD Students’ Grammar. London: Longman
7. Murphy, Raymond. Grammar in Use. C UP

CRP-103 COMPUTER AIDED DESIGN
Theory

Practical
Drawing various types of objects and geometric shapes. Drawing of a house design and a small housing layout. Drawing of three-dimensional objects.

Books Recommended
1. Mastering Auto CAD
2. CAD Manual by Auto Desk

CRP-104 TRANSPORTATION ENGINEERING
Theory
A. Roads
Classification of roads. Road location; Reconnaissance Survey for new roads. Elements of road curves, supper elevation, transition curves, cross-falls Extra width of carriage, sight distances on vertical and horizontal curves. Traffic and road capacities, Gradients, bridge heights and clarances for road and rail crossing, Gradient on bridge approaches and road alignment. Road junctions, Mas Haul diagrams. Design data; Speed and Right of way, Width, Soil stabilization. An introduction to Pavement design.
B. 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; Grade compensation, design components and foundation.

C. AIRPORTS:
Design standards and orientation. Site requirements Operational. Meteorological. Physical and others.

D. WATER WAYS:
Introduction to water ways, definitions. Types of ships and vessels. Water ways in Pakistan.

Practical
Traffic volume and turning tendencies surveys. Traffic Flow diagrams for Intersections. Sketch plan of a Railway Station and an Airport.

Books Recommended

CRP-105   APPLIED STATISTICS
Theory
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, descriptive statistics, the arithmetic mean; the arithmetic mean of a frequency distribution; the median; the mode; standard deviation; variability in sample data.
Index numbers, the interpretation of an index number; an expenditure index; a price index; a volume index; selecting a suitable base period; fisher’s index; using an index to deflate a series, time series, the components of a time series; the calculation of the trend; the trend of a quarterly series; exponential smoothing; the calculation of seasonal variation; series with seasonal
variation eliminated; the importance of residuals; forecasting from the time series; additive or multiplicative models?, probability, some definitions; how we measure probability; three approaches to probability; the laws of probability; applications of the laws of probability; tree diagrams; conditional probability; independence and correlation. Probability distributions, what is a probability distribution?; the normal distribution (the standard normal distribution, applications); the binomial distribution; the mean and standard deviation of a binomial distribution; the poisson distribution; conditions necessary for using the poisson distribution.

Books Recommended

SECOND SEMESTER

CRP-106 MAPPING AND REMOTE SENSING

Theory

Practical
Assignments on Graphic scales, Map compilation, Scale enlargement and reduction, Study and interpretation of topographic sheets, Massavies, Khasra plans etc. Introduction to labs, Single band image interpretation, False color predictions, False color composite Images Interpretation Visual Interpretation of aerial photographs, Various sensors data comparison, Thermal Infrared Image interpretation, Intro to ERDAS Imagine, display, Geo-linking, Zooming, Identification of targets
Books Recommended

CRP-107  HISTORY OF URBAN PLANNING

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 centres, Medieval Planning; the grand palaces, the influence of the church and castle, the walled city, bastides, market towns and growth of guild system. Renaissance planning; the grand palaces, 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. History of planning in Pakistan, 1947 to date.

Books Recommended

CE-101 SURVEYING

Theory
Introduction to small survey instruments, Optical square, Box sextant, Prismatic compass. Abney’s clinometers. Tangent clinometer and planimeter, Leveling, Reduction of levels. Temporary and permanent adjustment of levels. Contouring, Plane table surveying and Chain surveying. Construction and use of Theodolites, Traversing with Theodolites and Prismatic compass. Use of Total Station. Earth work calculations. Computation of areas by D.M.D. method. Simpson’s rule. Trapezoidal rule, Calculation of volumes. Concept of Total Station

Practical
Field surveys, Chain, Plane Table, Compass, Theodolite leveling and contouring assignments. Setting out of a public building and a small housing scheme. Use of total station

Books Recommended

IS/HU-101 ISLAMIC STUDIES / PAKISTAN STUDIES / ETHICS
Course to be prescribed by the Islamic Studies Department

MA-101 MATHEMATICS


Books Recommended
HU-102  ENGLISH-II (Compulsory)
Aim/s: To enhance language skills and develop critical thinking

Contents:
- Use of grammar in context
  - Phrase, clause and sentence structure
  - Reported speech
  - Modals
- Oral Communication Skills (Listening and Speaking)
  - Comprehend and use English inside and outside the classroom for social and academic purposes
- Reading and Writing Skills
  - Distinguishing between facts and opinions
  - Recognizing and interpreting the tone and attitude of the author
  - Recognizing and interpreting the rhetorical organization of a text
  - Generating ideas using a variety of strategies e.g. mind map
  - Developing an outline for an essay
  - Writing different kinds of essay (descriptive and narrative)
  - Vocabulary building skills


Books Recommended
1. Collins COBUILD Students’ Grammar. London: Longman
4. Murphy, Raymond. Grammar in Use. C UP
10. English for Modern Business By Ketteley and Thompson
11. Write Better, Speak Better, By Readers Digest
CRP-108  ECONOMICS
Theory

Books Recommended

THIRD SEMESTER

CRP-201  TRANSPORTATION PLANNING
Theory
Communication through road, railways 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 model 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 lay byes. Segregation of vehicular and pedestrian traffic, planning of roads in relation to existing features such as 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 service areas. Airport approach requirements, Factors affecting the location and planning of airports. Introduction to Trip Generation, Trip Distribution. Model Split and Traffic Assignment Models.

**Practical**
Assignments on improvement of roads and design of intersection in an urban area. Traffic and parking surveys, Travel time and delay studies.

**Books Recommended**

**CRP-202 ARCHITECTURAL DESIGN**

**Theory**
Design parameters, Aesthetics in design, Theories of design. Building form and function. Building orientation and climatic. Control Design process. Data collection and formulation of requirements and preparation of design brief; design of houses, mosques and public buildings, design standards and space requirements and environmental space and time/context in building design. Energy conservation through site planning and building design.

**Practical**
Design of houses for various plot sizes and of flats. Design of commercial and institutional buildings.

**Books Recommended**
CRP-203  PLANNING LAW

Theory
Outline of planning legislation and its evaluation in UK and USA. 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. Concepts, definitions and objective of zoning and land subdivision regulations. 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.

Books Recommended

CRP-204  QUANTITATIVE PLANNING TECHNIQUES

Theory

Practical
Typical studies: Land use, socio-economic and housing, industrial, commercial, education, health and infrastructural services. Tabulation of data and preparation of analytical reports.

Books Recommended
3. Heinville, Gerald, Survey Research Practice, London,

**HU-201 ENGLISH-III (Communication Skills and Report Writing)**
Course to be prescribed by the Humanities Department.

**CRP-205 PHYSICAL GEOGRAPHY**

**Theory**
Major parts of Physical Geography: Hydrosphere, Atmosphere, Lithosphere & Bio-sphere, Important of Physical Geography for Urban Planning and Management Earth Origin, Shape and Size, composition and structure, of the Earth, Plate Tectonics Theory, Fault lines, their risks for city development, Major fault lives in Pakistan, Earthquake, Volcanic activity, Cyclones, Floods, Droughts Desertification, Land sliding, Degradation of Soil and ground water, water scarcity, their reasons & effects on cities planning & development. Weather & Climate, Importance of weather and climate study for urban planning and management, Major elements of climate, factor affecting the climate to change, Global warming issue, Green house effect, Depletion of ozone layer its effects on climate change with reference to some case studies of Pakistan. Climate friendly urban planning.

**Books Recommended**
FOURTH SEMESTER

CRP-206 INFORMATION AND DATABASE MANAGEMENT

Theory

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. Basic database concepts; Entity Relationship modeling, Relational data model and algebra, Structured Query language; RDBMS; Database design, functional dependencies and normal forms; Transaction processing and optimization concepts; concurrency control and recovery techniques; Database recovery techniques; Database security and authorization.

Introduction to Statistical Package for Social Sciences (SPSS). 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 display in the output navigator.

Practical

Hands-on practice in using a database system to create files, tables, forms and queries; enter and manipulate data; and generate reports. Statistical analysis survey data using SPSS and preparation of tables, crosstables and charts. Small Group Project implementing a database

Books Recommended

1. MS Office Manual (Latest Edition)
**CRP-207 HOUSING**

**Theory**
Housing problems in developed and developing countries with special emphasis on Pakistan. Housing supply and demand, quantitative aspects. Socio-economic aspects. Slums and squatter settlements improvement programmes such as Orangi Pilot Project. Low income housing incremental development schemes, such as Khuda Ki Basti, Housing standards and densities. Evaluation of housing shortage and need for the future. Procedure for 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.

**Practical**
Housing types and sizes, Housing layout patterns, Design of a housing scheme. Low income housing workshop.

**Books Recommended**
2. Government of Pakistan, National Housing Policy, 2001
7. UNCHS (Habitat), *Physical Improvement of Slums and Squatter Settlement*

**CRP-208 ENVIRONMENTAL PLANNING AND MANAGEMENT**  
**Theory**

**Practical**
Studies and analysis of environmental degradation in urban and rural communities. Preparation of environmental management programme for commercial, industrial and residential areas of the city or for the whole city.

**Books Recommended**
7. Asit K. Biswas Ed., *Environmental Impact Assessment for Developing Countries*

**CRP-209  SOCIOLOGY**

**Theory**

**Books Recommended**

**IS/HU-201  ISLAMIC STUDIES / PAKISTAN STUDIES / ETHICS**
Courses to be prescribed by the Islamic Studies Department

**HU-202  ENGLISH-IV (Oral Communication)**
Courses to be prescribed by the Humanities Department

**CRP-210  INTRODUCTION TO GIS (Geographical Information System)**

**Theory**
**Objectives:** The course aims at providing an understanding of GIS, its evolution, applications, spatial data models and data structures, design aspects of GIS; spatial data acquisition, sources and standards; spatial data manipulation, spatial analysis and visualization of data. This course also covers the understanding of GIS software environment. This subject provides basic training in understanding GIS data capture, storage, retrieval, analysis and display. It also helps to learn functionality of GIS software and to gain basic skills.

Practical
Lab Outline: 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.

Books Recommended
FIFTH SEMESTER

CRP – 301 ENVIRONMENTAL ENGINEERING

Theory
General introduction to environmental engineering. Objectives of basic infrastructure. 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 system. 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. Basic infrastructure in relation to rural settlements, environmental quality. Refuse disposal; refuse generation, quantity, composition, collection. Transportation and disposal site. Land fill areas, air pollution and acoustic problems in urban areas. Introduction to the design and layout of vital utility services like gas, electricity and telephones in urban areas.

Practical
Design of services such as water supply, sewerage, drainage etc. In a typical development scheme.

Books Recommended
2. Salvata, Environmental Engineering & Sanitation, Wiley Inter-Services, 1992
CRP – 302 SITE PLANNING AND LANDSCAPE DESIGN

Theory

Neighbourhood planning; Layout plan of housing blocks and public facilities and services. Town centre plan; Planning of civic, administrative and commercial areas Industrial estate plan; layout and placement of various types of industries, related services and facilities. Town park; elements of design of a town park and landscape planning of a system of open spaces and parks.

Practical

Books Recommended
6. Harris, Nigel, Cities in the 1990s, London, 1992

CRP-303  URBAN RENEWAL AND CONSERVATION

Theory
Consequences of urbanization; urban growth, Slums and squatter settlements; definitions; identification, causes and potentials for improvement. Urban renewal; Concepts, 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, programmes 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. Conservation and preservation of culturally and historically valuable buildings, spaces and objects. Peoples participation in urban renewal and conservation programmes. Institutional framework and mechanism for urban renewalal projects, programmes and policies for implementation.

Practical
Urban Renewal workshop with an objective to prepare an urban renewal programme for part of a city or a slum area.

Books Recommended
3. Upgrading of Inner-City Slums, Nairobi, 1984
INFRASTRUCTURE PLANNING

Theory
Principles and practices of infrastructure planning. The structure for regional and statewide planning. Recent changes in federal transportation planning requirements including the Intermodal Surface Transportation Efficiency Act of 1991, the Clean Air Act Amendments of 1990, wastewater treatment, solid waste, and others. Development of a regional transportation system plan, air quality management plan, regional sewerage system plan, regional solid waste disposal plan, and other regional plans, and their relationship to regional land use plans. The role of state and local governments and private interest groups in the regional planning process. The use of demand modeling in regional planning. Development of state and local infrastructure plans in the context of regional plans. Development of long-range public works facilities plans. Political, financial, public relations, legal, and environmental concerns.


Books Recommended
2. Namavati Roshan, Professional Practice (Estimating and Evolutions), Union Book Stall, Karachi
3. Khanna, Practice Civil Engineers Hand Book, Union Book Stall, Karachi
4. Govt. of Pakistan, Provincial Local Government Ordinances 2001
5. Namavati Roshan, Professional Practice (Estimation and Evaluation), Union Book Stall.
6. Khanna, Practice Civil Engineers Hand Book, Union Book Stall, Karachi.

GIS APPLICATIONS IN PLANNING

Theory
The primary objective of this course is to introduce GIS and related applications and how they can aid 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. Case Studies
Books Recommended
7. Sullivan & Unwin, Geographic Information Analysis. 2003
11. Managing Our Urban Future, A Lecture by Prof. Ian Masser, Division of Urban Planning and Management, ITC, Netherlands, 1999 (Printedbooklet)

CRP-306 HAZARDS AND DISASTER MANAGEMENT

Theory
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. Case Studies

Practical
Hazards identification and mapping, risk / vulnerability assessment and mapping, disaster mitigation strategies development. Analysis of any natural
or man-made disaster with field investigation and using GIS / Remote Sensing techniques. Study of existing disaster management infrastructure at local level.

Books Recommended
4. Principals of Emergency planning and Management David Alexander
5. Published in the United State of America by Oxford University Press Inc. 1998 Madison Avenue, New York 10016
6. The primer on Disaster Risk management in Asia
7. Mr. Aloysius J. Rego Director of Knowledge Sharing and partnerships and Co-Team Leader of Disaster management System team Asian Disaster preparedness Center (ADPC) 2003

SIXTH SEMESTER

CRP – 307  PLANNING OF NEW TOWNS

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. Process of planning and designing a new town, various approaches. Space standards and requirements for various land use activities, densities etc. Projection and growth models. Application of space standards and locational criteria for various landuses. 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 centre plan; Planning of civic, administrative and commercial areas Industrial estate plan; layout and placement of various types of industries, related services and facilities. Town park; elements of design of a town park and landscape planning of a system of open spaces and parks.

Practical
Books Recommended

CRP 308  RURAL PLANNING

Theory
Theory of rural development and planning. Rural settlement patterns in various countries. Rural planning in indo Pakistan sub-continent. Characteristics of Bar and Bet lands in rural areas of Pakistan. Various approaches to rural development and rural center, planning and criticisms on them. Village as a focal point of planning and development. Elements of the conceptual framework for modern rural planning. Basic needs approach. Rural urban linkages. Farm to market roads. Structural transformation of rural areas.

Practical
Rural planning workshop involving identification of rural area problems and basic needs and preparation of district level projects. Evaluation of existing rural and district level projects.

Books Recommended

**CRP-309 GIS DEVELOPMENT**

**Theory**
This course is designed to introduce the student to a variety of emerging technical topics in GIS. It is expected the student will be prepared to continue with self-studies in the area to develop specific expertise.

**Practical**
Enterprise / Corporate GIS development for any local government unit or for a development authority.

**Books Recommended**


14. Managing Our Urban Future, A Lecture by Prof. Ian Masser, Division of Urban Planning and Management, ITC, Netherlands, 1999 (Printedbooklet)


CRP-310 CONSTRUCTION TECHNOLOGY

Theory
Introduction to Building Materials and construction technologies, Lime, Cement, Bricks, Sand, Concrete, Building Blocks, Pre-stressed and pre-cast members, Timber, Mild Steel, Cast iron, Brass, Aluminum. Doors and Windows, Floor, lintels. Introduction to site preparation, Bricks work and bonding, Insitu precaste and prefalericated construction systems. Plumbing, Electricity and Gas points, Insulation and Fire Protection. Different construction system. Introduction to RCC and foundation. Fuisting materials such as paints, papers and plasters. Environmental and safety consideration and choice of materials. Design of earthquake resistant buildings; Disaster management measures.

Practical
Drawing of various building components, Chart of characteristics of building materials. Small exercise in project planning, Site selection orientation and setting out for construction. Market analysis of ongoing construction technologies.

Books Recommended

CRP 311  PUBLIC ADMINISTRATION

Theory

Books Recommended
1. David W. Smithburg, victor A. Thompson Herbert A. Simon, (1991), Public Administration, ISBN. 0887388757, Transaction Publisher. (Albert A. Simon is Richards Ring Melton University professor of computer sciences & psychology at Carnegie's Oellon University in Pill & Burgh. His books in hands scientific Discovery.)

CRP-312  COMMUNITY EMPOWERMENT

Theory

Practical
Preparation of improvement plans and implementation frameworks for the provision of education. Health and recreational or infrastructure facilities in low income communities/slums or villages on self-help basis. Organization of forums in urban/rural communities for community meeting/mobilization etc.
Books Recommended
6. UNCHS Habitat, Supporting the Informal Sector in Low Income, Nairobi, 1986
7. Reinhard, J. Skimer, Shelter Upgradation for the Urban Poor, 1984
8. UNCHS, Habitat, Community Credit Mechanisms, 1989

SEVENTH SEMESTER

CRP-401 MASTER PLANNING - I

Theory
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. Study of National spatial and environmental policies and regional strategies for master planning. Interaction with stake-holders. Planning surveys and studies of component subjects as a basis for development of plans. Analysis of Data collected to form information base for future planning proposals.

Practical
Planning surveys and studies of the selected city as a class / group project. Special emphasis will be laid on team work capabilities development among the students.

Books Recommended

CRP-402 FINANCE PLANNING AND MANAGEMENT

Theory

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.

Practical

Assignments on costing and financing of schemes, using affordability models. Cost benefit analysis of a project.

Books Recommended


CRP-403 LAND USE AND BUILDING CONTROL

Theory

Land Use and Building control as a tool for implementation of Master plan and other Local plans, zoning as tool for development control. Environmental conservation through building and development control. Procedure for approval of building plans / planning permission applications: Submission of building application. Procedural checks, ownership verification, planning application forms, drawings, fees, No Objection Certification, advertisements etc. Site visit, surveying of notices, Fines and compounding of violation.

**Practical**
Survey of various buildings, markets and plazas regarding the provision of parking space, building lines/set backs etc. Identification of violation of planning standards and regulations. Evaluation of building and development control practices in the development authorities and municipal corporations.

**Books Recommended**
1. LDA, Lahore, Building Control Regulations 1984, Lahore, LDA, 1984
5. CDA, DHA Byelaws for Building Control (Latest Edition)

**CRP-404 PROJECT PLANNING AND MANAGEMENT**

**Theory**
Process of project planning and implication in Pakistan. Relation ship between policy plans and projects in urban and regional development. Project identification and formulation. The PC-1 and PC-II forms. Financial and economic appraisal and selection of projects. Legal backing for the plans and projects. Social acceptability of projects. Sanctioning authority and approval of projects. The role of project execution authority. Scheduling of projects component, 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.
Practical
Preparation of a PC-I and PC-II form for a development project. Evaluation of an existing project. Use of Prima Vera, and MS Project Software.

Books Recommended

CRP-405  RESEARCH METHODS
Theory
Definition of research and its significance in planning. Introduction to research design. Research procedure. Characteristics of Scientific research. Literature review. Data collection and analysis techniques. Theoretical framework and testing of hypothesis. Research design: components of research design, types of research design: measurement: definition, nature and levels of measurement, research mythology: collection and analysis of data, types of observation, laboratory experimentation, and field experimentation, mail questionnaire, personal interview: questionnaire construction: content of question, types of question, question format, sequence of question, index construction and scaling methods, sampling and sample design, evaluation; generalization: theoretical framework and testing hypotheses, organization and format of planning report: reference, quotations, bibliography, paging, etc., Compilation of research proposals and presentation.

Practical
Review of a thesis. Preparation of a research proposal for project in the last term under ref. number CRP-499.

Books Recommended

CRP-406 DEVELOPMENT JOURNALISM

Theory
Introduction to Media and/in Development, Theoretical perspectives on development and impact on policy and performance. Terms like "developing or less developed countries" or "Third World" and politics around these definitions. Responsibility of governments to rural and marginal people's media needs. The role of media in national development, health promotion, education. Historical examples of media involvement in national liberation, repression, unity and conflict. Development vs Progress-from whose point of view? Journalist as observer or participant in development.

Books / Journals Recommended
EIGHT SEMESTER

CRP-407  MASTER PLANNING –II

Theory
Policy planning in the light of existing studies and strategies. Cotangents and purpose of master plan. Local development plans such as subject plans, local district plans and action area plans. Phasing and programming. Financing and legislating the plan provisions. Administering the master plan. Coordination between various line departments and the local planning agencies. Public participation as a tool for effective implementation of the plans and component projects.

Practical
Evaluation of an existing master plan. Preparation of a Master Plan, Subject Plans, Local District Plans, and Action area plans for a town.

Books Recommended
8. LDA, Integrated Master Plan for Lahore, 2004

CRP-408  ESTATE MANAGEMENT

Theory
Process and problems of urban growth in developing countries with particular reference to Pakistan, land planning and management for urban expansion, operation of urban land prices: and development in Governmental and informal sector, public and private land development and management approaches viz: land pooling and readjustment, land baking, leasehold system, sites and services projects public-private joint ventures, plot allotment criteria, land management process for the modern city and master planning incremental development approach for low-income housing, people’s involvement for the development and maintenance of infrastructure.

Practical
Preparation of a land management project for urban expansion.
Books Recommended

CRP-409 DISTRICT AND REGIONAL PLANNING

Theory
Introduction to District Planning. Hierarchy of rural and urban settlements in the administrative districts of Pakistan. Urban and rural institutional setup in Pakistan. National and regional planning guidelines for the district and local level planning. The local Government Acts of Pakistan. Role of town Planners at district level. District level Master Plan and local subject plans for rural sanitation, health centre development, educational institutions, service centers, rural water supply schemes and rural transportation. Introduction to Regional Planning; concept, need and objectives, planning regions, delineation of regions, Spatial distribution and hierarchy of settlements, National and regional economy, economic base resources etc. Inter and intra regional inequalities, spatial flows, rural-urban linkages, urbanization and regional growth, regional development theories. Preparation and presentation of regional plans and their implementation. Review of public sector programmes with particular reference to Pakistan.

Practical
Critical evaluation of Regional Plans, Inter regional and Intra regional disparities.

Books Recommended
6. Govt. Of Pakistan, Housing and Physical Planning Department, Regional Development Plan for Thal
CRP-410 SITE DEVELOPMENT SCHEMES AND URBAN DESIGN

Theory
Concept of site development scheme. Components and important issues. Introduction to urban design. Three dimensional aspects physical design which includes visual and un-visual aspects of built environment. Role of peoples, participation, culture and traditions in urban design. Definition, relationship with allied subjects. Urban design process, outstanding features of urban design from the old and modern concept; typical examples of planning and design of Islamic cities, urban form. Urban design in the context of town planning. The key parameters which effect the physical design. Studies for urban design. Visual surveys, basic elements and other facts of form such Land forms, climate, shape, size and density, pattern, grain and texture, vistas, skylines and social aspects. Principles of urban designs; scale, urban mass, activity and circulation. Urban design techniques. Urban aesthetics, space, street furniture and landscape design. Responsive environments.

Practical
A typical site planning and design project (involving site observation, analysis and graphic presentation of data, site preparation, site structure diagram, Landscaping and development).

Books Recommended

CRP-499 PROJECTS
Practical
Research projects pertaining on any City and Regional Planning aspect / problems / dimention.
OBJECTIVES

Following are the main objectives of the MS-CRP programme:

1. To provide advanced knowledge and skills in the field of City and Regional Planning.
2. To develop research in order to contribute to the existing body of knowledge, skills and techniques in City and Regional Planning profession.
3. To provide professionals in various stream of specializations in City and Regional Planning.

SCHEME OF STUDIES FOR MS-CRP

SPECIALIZATIONS

1. Community Empowerment
2. Housing & Urban Development
3. District and Regional Development Planning
4. Transportation Planning

GROUP – A: Compulsory Courses

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td></td>
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<td>Theory</td>
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<tr>
<td>CRP-501</td>
<td>Advanced Planning Techniques</td>
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<tr>
<td>CRP-502</td>
<td>Comparative Urban Planning</td>
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<tr>
<td>CRP-503</td>
<td>Planning Research Methods</td>
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<td>CRP-504</td>
<td>Regional Development Planning</td>
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<td>CRP-505</td>
<td>Planning Theory</td>
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<tr>
<td>CRP-599</td>
<td>Research Thesis</td>
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GROUP – B: Elective Courses (3 Courses To Be Taken From The Following)

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<th>Ref. No.</th>
<th>Course Title</th>
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<tr>
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<td>Theory</td>
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<tr>
<td>CRP-551</td>
<td>Public Transport Planning</td>
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<td>CRP-552</td>
<td>Disaster Management and Rehabilitation</td>
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<td>CRP-553</td>
<td>Development Planning in Pakistan</td>
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<td>CRP-555</td>
<td>Environment, Resources and Development</td>
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<td>CRP-556</td>
<td>Legal and Regulatory Aspects in Planning</td>
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<td>CRP-557</td>
<td>Urban Finance Management</td>
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<td>CRP-558</td>
<td>Advanced Statistics</td>
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<td>CRP-559</td>
<td>Advanced Remote Sensing</td>
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<td>CRP-560</td>
<td>Rural Planning</td>
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<td>CRP-561</td>
<td>Advanced Geographical Information Systems</td>
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<td>CRP-562</td>
<td>Mathematical Models in Planning</td>
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<td>Plan Implementation</td>
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<td>CRP-564</td>
<td>Urban Sociology</td>
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<td>CRP-565</td>
<td>Informal Housing</td>
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<td>CRP-566</td>
<td>Housing Policy and Practice</td>
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<td>CRP-567</td>
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<td>CRP-569</td>
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<td>CRP-570</td>
<td>Housing and Urban Development</td>
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<td>Urban Design</td>
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<td>CRP-572</td>
<td>Geographical Information Systems</td>
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<td>CRP-573</td>
<td>Urban Land Management</td>
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<td>CRP-574</td>
<td>Project Appraisal</td>
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<td>CRP-575</td>
<td>Infrastructure Planning</td>
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<td>CRP-576</td>
<td>Climate Consideration in Urban Design</td>
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<td>CRP-577</td>
<td>Sustaining Environment</td>
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<td>CRP-578</td>
<td>Environmental Land Use Planning</td>
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<tr>
<td>CRP-579</td>
<td>Special Topics</td>
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Total Credit Hours for the MS-CRP Degree = 30
DETAILS OF COURSES

COMPULSORY COURSES

CRP-501  ADVANCED PLANNING TECHNIQUES

Theory

Books Recommended:
CRP-502  COMPARATIVE URBAN PLANNING

Theory
Socio-economic contexts of urban planning in the capitalist, socialist and the developing countries. Introduction to the problems, assumptions, approaches and institutional settings of urban planning in developed countries like the United States, Britain, France, China, Poland etc., and in developing countries like India, Pakistan, and China etc. Concepts and approaches emerging from the United Nations and the World Bank’s involvement in urban problems of this world. Students will be expected to appreciate varying national styles of urban planning and encouraged to critically understand the context of each approach for assessing its relevance to the Pakistani conditions.

Books Recommended:
6. Robson B., 1988, “Those Inner Cities: Reconciling the social and economic aims of urban policy”.
CRP-503 PLANNING RESEARCH METHODS

Theory

Books Recommended:
5. James A. Black and Dean J. Champion; Methods and Issues in Social Research. (Latest Edition)
CRP-504  REGIONAL DEVELOPMENT PLANNING

Theory

Books Recommended:
2. Manners, Gerald, Regional Development in Britain, John Willey, 1980

CRP-505  PLANNING THEORY

Theory
Planning as a mode of public decision making process. Planning theories suggested by Eastern and Western Scholars. Elements of the planning process: Identification of social goals; formulation of objectives, criteria and alternative proposals; Choice of an action plan; Implementation, feedback and evaluation. Models of the planning process: Incrementalism, and optimizing strategies and systems approach. Advocacy planning. Planning for efficiency and social justice. Citizen participation in the planning process. Urban and regional planning as expressions of public planning. Evolution of contemporary urban planning from design disciplines to policy sciences. Introduction to special interests within the field of urban planning, policy planning, regional development, urban design, land planning, social planning and environmental planning.

Books Recommended:

ELECTIVE COURSES

CRP-551 PUBLIC TRANSPORT PLANNING

Theory

Books Recommended:
1. Sohail, Urban Public Transport and Sustainable Development for the Poor- A Case Study of Karachi, Pakistan
CRP-552 DISASTER MANAGEMENT

Theory
Preparation, Response, Recovery, Sample IT Solutions, Identifying the risks, Natural risks, Emergency risks, Aims Purpose and scope of emergency planning, Methodology; making and using maps, methodology analytical elements.
The emergency plan and its act valuation. The plan in practice; emerging management specialized planning reconstruction planning. Emergency Management Training coaching thoughts. governmental regulations and universal preparation to ordinary with local assets,

Preplanning for a disaster, eliminating, minimizing to shifting risks, Developing the action plan, developing the written plan, effective communication, selecting the right people, Training for success Media control, Share householder factor, After a disaster minimizing the damage Governmental reactions, legal issue, Disability issues, Disaster preparedness assessments, Personal Disaster--- use of Criminal sanctions, Employees work-place right, Policy, Legal and Institutional Framework, Sustainable Development and Concept of DRM, Risk Assessment, Mitigation Planning and Implementation, Promoting Safer Building Construction, echo-financial Mechanisms for Risk Management, Climate Forecasts Application, Flood Mapping, Early Warning,, Urban Planning, Structural Interventions, Earthquake (EQ) Disaster Risk Management, EQ Risk Assessment, EQ Disaster Reduction, EQ Rehabilitation and Reconstruction, Designing a Road Map, EQ Major Issues.

Books Recommended
1. Disaster Management and preparedness by Thomas D. Schneid Publisher CRC November, 22, 2000.
2. Principals of Emergency planning and Management David Alexander
3. Published in the United State of America by Oxford University Press Inc. 1998 Madison Avenue, New York 10016
4. The primer on Disaster Risk management in Asia, ADPC, Bangkok, Thailand, 2006.
5. Mr. Aloysius J. Rego Director of Knowledge Sharing and partnerships and Co-Team Leader of Disaster management System team Asian Disaster preparedness Center (ADPC) 2003.
CRP-553 DEVELOPMENT PLANNING IN PAKISTAN

Theory
Background of development planning in Pakistan; review of five year plans; sectoral planning; planning institutions institutional process in development planning and its dynamics; analysis of development planning process in Pakistan.

Books Recommended:

CRP-554 LOCAL PLANNING PRACTICE

Theory
Government and the planning system. Local planning and public policy. Local planning and the politics at local, provincial and national levels. Local planning agencies and the provincial and central governments. The role of local plans within the statutory land use planning system. The legislative and administrative framework for local plans. The type, form and content of local plans. Local plans for urban development, urban renewal, conservation, environmental improvement, transport management, and regeneration of inner city areas. Local plan preparation, adoption, and review procedures. Bringing local planning issues before the public. Non-statutory approaches to local planning. Local planning and implementation. The development control process. Local plans and the determination of planning applications. Conflict of interests and bargaining in development control. Site development schemes: identifying goals, objectives, policies and standards for site development schemes. Local plans and the role of public and private sectors in the development process. Contingency and the management of change. Case studies of local plan preparation and implementation in developed and developing countries. Institutional, political and administrative prerequisites of local plans in different social contexts.

Books Recommended:
2. Robert Goodman, After the Planners
CRP-555  ENVIRONMENT, RESOURCES AND DEVELOPMENT
Theory
Environmental health hazards; effects on human functioning and means of minimising such effects. Local Agenda 21 as a framework for environmental management. Green ideas for pollution control and waste management. Energy, land, water and air as resources for community life. Techniques of assessing resource potential and optimum use. Energy policies and the environment. Sustainable energy futures. Conservation of natural resources; principles and practices in the use and conservation of natural resources. Perspectives on development. Sustainable development, the city and globalization. City planning and sustainability. Managing environmental issues of the countryside.

Books Recommended:

CRP-556: LEGAL AND REGULATORY ASPECTS IN PLANNING
Theory
Legal and regulatory concepts; legislative, judicial and administrative structure in relation to planning; urban planning process in relation to local, provincial and federal governments; planning and development laws, regulations and byelaws; issues in implementation and enforcement; critical analysis of planning and development laws and regulations and their application.

Recommended Books:
1. Integrated Planning Regulation 1998; Reprinted in 2006 and available at:
2. Initiatives of Government of India On Regulatory Reform In The Context Of The Action Plan For Effective And Responsive Government


CRP-557  URBAN FINANCE MANAGEMENT

Theory
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.

Practical
Assignments on costing and financing of schemes, using affordability models. Cost benefit analysis of a project.

Books Recommended

CRP-558  ADVANCED STATISTICS

Theory
Data and its types (physical, social and economic attributes); data review and quality evaluation; sampling distribution; sample drawing techniques; estimation of means, variances, differences and proportions in demographic data; design of experiments/data collection, processing and interpretation exercises.
**Books Recommended:**
2. Phil Gregory, *Bayesian Logical Data Analysis for the Physical Sciences: A Comparative Approach with Mathematica Support*
4. Kevin Hastings, *Introduction to Probability with Mathematica*
6. Colin Rose and Murray D. Smith, *Mathematical Statistics with Mathematica*

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**CRP-559 ADVANCED REMOTE SENSING**

**Theory**

Data Sources and Procurement, Data Formats (BSQ, BIL, BIP, etc.) Image Subsetting & Enhancement, Image Cleaning, Atmosphere Path Correction, Image Mosaicing and Color Balancing, Image Rectification, Registration and Re-sampling, Band Ratios, Vegetation Indices, Image Filtering, Difference Images, Principal component analysis, Classification Schemes, Types, Algorithms, Field data collection, Qualitative and quantitative techniques, sampling techniques, Error matrices, Ground-Verification (Field Verification).

**Practical**

**Lab Outline:** Intro to lab and software, Image Management (Import/Export & Display), Enhancement Techniques, Spectral and spatial digitizing (image masking), Mosaicing and color balancing, Rectification and Registration and Re-sampling, Band Ratio, Vegetation Indices, Difference images, Image filters, Signature selection, Supervised, unsupervised and hybrid classification, ISODATA, MDM, MLC, and Bayesian classification, Error Matrix Generation, Classification validation, field work

**Project** From third week students will be advised to commence their project work in a teamwork environment. Project work will be based on real life data sets obtained from resource monitoring agencies such as SUPARCO, SOP.
CRP-560  RURAL PLANNING

Theory

Review of social, economic, physical and environmental bases of rural life in developing countries, particularly Pakistan. Objectives and definitions of rural planning and development. The changing concepts of rural planning and development. A critical review of rural development efforts in Pakistan like Dehat Sudhar, Village Aid, Rural works and Integrated Rural Development Programmes, Matching Grant and MNA/MPA Programmes etc. Theories of rural urban migration; growth poles, service centres, and rural hinterlands. Central place theories for an efficient system for short and long range rural planning and development. Rural development as a component of Regional Planning. Rural spatial planning and micropolitan planning as strategies for
rural development. Spatial and organizational approaches for the delivery of public services and facilities in rural areas. Spatial plans and execution of rural development projects. Village and Neighbourhood Councils, Citizen Community Board System etc. Rural economic development through agricultural and industrial growth. Rural environmental and land resources. Preservation of agricultural land and promotion of appropriate technology as objectives of rural planning. Policy framework for comprehensive rural development. Top down and bottom up approaches to rural development. Case studies of Pakistan, India, China, Malaysia, Iran, Britain, Germany, Holland etc.

Books Recommended:
7. Niles M. Hunsen, Rural Poverty and the Urban Crisis

CRP-561 ADVANCED GEOGRAPHICAL INFORMATION SYSTEMS

Theory
Introduction to GIS. Principles of Remote Sensing and GIS. Data acquisition techniques, characteristics and nature of spatial data, projections and objects. Spatial analysis. Data model and data structure. Typical GIS operations like linking multiple varied sources of tabular data to spatial datasets, importing spatial data, adding attribute data, labeling features, working with layers, designing GIS questions, integration of GIS with other software applications like AutoCad etc. Geo-Information Management. Geo-statistics. Global Positioning System and Land Information System and their relevance to City and Regional Planning. Research design and project management in GIS. Using GIS in carrying out urban and regional planning tasks like site selection, land use planning, zoning, land registration and titling, development control, utilities management and community planning. Co-ordinate System and Map Projection, Drawing of Map Projections and Error Estimations, Understanding of Cartographic Errors and Rectification Procedures, Cleaning and Editing Cartographic Data, Visualization of Geospatial Data, Symbolization and Map Layouts Development, 3D Visualization of Spatial Data, Alternate Approaches for Mapping (Geocoding,
Survey Data Integration), Geocoding and Survey Data Integration in GIS, Point Pattern Analysis, Lines and Networks, Performing Network Analysis, Area Objects and Spatial Autocorrelation, Describing and Analyzing Fields, Spatial Interpolations, Geostatistical Analysis, Map Overlay Analysis, Multivariate Data, Multidimensional Space and Spatialization, GIS Modeling and Related Issues

Books Recommended:
1. Lillis and Thomas, Remote Sensing and Image Interpretation, John Willey, New York, 1979
2. UNCHS (Habitat), Remote Sensing for Human Settlement, Nairobi, 1989

CRP-562 MATHEMATICAL MODELS IN PLANNING

Theory

Books Recommended:
CRP-563  PLAN IMPLEMENTATION

Theory
Types of plans; planning out puts; development proposals; programmes and projects; institutional methods, processes and procedures related to programme and project implementation; analysis of implementation modes; alternatives, case examples and best practices. BOT, international tendering. Master plan as an instrument of guiding and regulating city growth. Legal and institutional bases of Master Plans. Review of assumptions, approaches and effectiveness of master planning in the U.S.A., Canada, Britain, China, India and Pakistan. Institutional, political and administrative pre-requisites of Master plans in different social contexts. Case studies of master planning efforts in Calcutta, Karachi, Lahore. Assessment of the scope of policy plans as instruments of urban planning. Examination of Cleveland and Chicago policy plans and review of the experience of structure plans in Britain. Zoning and land use controls as tools of urban planning. Review of British and American experience. Planning for urban services and facilities. Capital budgeting and public enterprise as means of plan implementation.

Books Recommended:
2. Pasha H.A. Resource Mobilization and Expenditure Planning in the Provinces of Pakistan
5. LDA, Lahore, Building Regulations 1984, Lahore LDA, 1984

CRP-564  URBAN SOCIOLOGY

Theory
The roots of urban sociology, cities and uneven development, inequality and social organization in the city. Perspectives on urban culture, urban culture and regeneration of urban meaning, urban politics, urban social problems, economic conditions of urban areas.

Books Recommended:

CRP-565 INFORMAL HOUSING

Theory
The course focuses on developing understanding of local housing conditions and the processes being undertaken by the informal sector to address the need of the poor. It includes study of the built environment with their linkages with the social and economic conditions of the people inhabiting it. Study of innovative housing approaches and initiatives and their analysis within the social, economic and political reality of Pakistan.

Books Recommended:

CRP-566 HOUSING POLICY AND PRACTICE

Theory
Housing as a process. Urbanization trends and their effect on urban housing situation. Housing policies and programmes adopted in Pakistan. Slum and squatter upgrading. Sites and services schemes by public and private sectors. Public land banking and urban land tenure as policy instrument to regulate land prices and uses. Formal and informal sectors of urban economy and organization of respective housing markets. Housing delivery system. Community facilities and services, shelter, tenure, physical environment and costs as elements of the housing delivery system. Housing needs and demands. Housing supply and the structure of housing market. Determinants of the supply and demand of housing. Public intervention in housing markets through the regulation of finances, land, community facilities and through direct participation in the form of public housing schemes. Low income and squatter housing. Problems, issues and approaches. Self-help and incremental development approaches for low income housing. Community involvement in slum and squatter upgrading. Role of private sector and the NGOs in housing. Implementation of housing programmes. Case studies of housing programmes initiated by the international agencies and national governments, particularly in the third world countries. Review of housing programmes in Pakistan.
Books Recommended:

CRP-567 URBAN TRANSPORTATION PLANNING

Theory
The Urban Transportation Planning process. Generation of alternatives and their evaluation. Introduction to systems analysis approach to transportation. Introduction to models of travel demand in transportation studies including residential and non-residential trip generation; Gravity and opportunity models of trip distribution; trip end and trip interchange modal split; net work assignment. Policies for urban mass transit. Planning for pedestrians, cyclists and animal driven vehicles. Transportation problems of rural areas and programmes of rural development.

Books Recommended:
1. Buchanan, C, (1963) Traffic in Towns, H.M.S.O.,
5. Moseley, M. (1979)Accessibility: the Rura; Challenge, Chapter 4, pp. 53-78,

CRP-568 ENVIRONMENTAL PLANNING AND MANAGEMENT

Theory

Introduction to environmental planning. Environmental planning and sustainability issues. Physical environment as an ecological system. Human impact on nature. Measuring use of nature and monitoring environmental qualities. Review of problems of urban physical environment: Population growth, poverty and environment; disposal of human and animal wastes and sewerage in cities; air and noise pollution; toxic/hazardous wastes; traffic congestion; land and water scarcities; soil erosion and waste of agricultural land. Approaches to environmental planning: Environmental action plans and conservation strategies; Indicators of sustainable urban development; Theory and techniques of Environmental Impact Assessment (EIA), use of EIA in planning; Strategic Environmental Assessment; Valuing the environment, fundamentals of environmental economics; Emergency planning; Environmental law, rights and justice.

Introduction to Environmental Planning and Management; Sustainable Development; Environmental Planning Framework; Life Cycle Assessment; Environmental Management and new technologies; Environmental Stakeholders; Designing for the environment; The ISO 14000 model; selling the environmental concept; Total Environmental Quality Management. Understanding Pollution; the waste management hierarchy; an introduction to toxicology; Environmental risk assessment; Air pollution; Air pollution and global change; Water pollution; Solid waste; metals; pesticides; Environmental estrogens; Energy production and use; pollution at home

Books Recommended:
1. Marquita K., Understanding Environmental Pollution, Hill University of Maine, Orono July 2006
2. Christen N Madu, Environmental Planning and Management. (Pace University, New York) 2006

CRP-569 COMMUNITY ORGANISATION AND DEVELOPMENT

Theory
Models and perspectives of community organization, types of community organizations, and roles of community organizer. The role and work of different sectors like government, non-governmental organizations, volunteers etc., in relating to community organization and liaison. The purpose and vision of community development. The principles and concepts of community-based development. Methods for evaluating and documenting progress and results of community development efforts. Skills and techniques of community organization and development: community study; identification and analysis of community needs, problems, networks and resources; making individual contacts and building relationship; public relations strategies and skills; developing networks; training of community leaders; methods of involving marginalized people; organizing mass meeting and public hearing; designing, managing and implementing community education programmes; working with community groups to carry out community problem-solving action; forming and sustaining community groups and organizations; promoting participation; mobilizing and developing resources; developing community based information for use in community decision formation; budgeting and financial management; intervening into crisis and managing conflict; negotiating and lobbying; preparing for specific change actions; planning of action strategies and tactics. Identification and analysis of the major issues and problems in community organization and liaison in developing countries: social responsibility, political involvement, social control, accountability, and citizen participation, etc. Role of IT in community organization and development.
Books Recommended:
5. A.P. cotton, Community Initiative in Urban Infrastructure.
7. UNHCR (Habitat) (1986), Community Participation in Squatter Settlement, Nairobi.

CRP-570 HOUSING & URBAN DEVELOPMENT
Theory
Study of dominant concepts in Housing, Mass housing, Public Housing, Private Housing, Housing Co-operatives, Concepts of formal sector Housing provision, Informal Housing, Squatter settlements, their origin, characteristics and Problems, Housing Economics, social, cultural, administrative and legal Aspects of Housing, Implication of Designs in Housing, Housing Issues with reference to Pakistan. Besides case studies will be undertaken of the relevant housing projects of Pakistan.

Books Recommended:
3. KARACHI SPECIAL DEVELOPMENT PROJECT;
   a. Study Document 2: Urban Land Management
   b. Study Document 4: Financial Mechanism In the Karachi Land Market
7. R.P. MISRA and Kamlesh MISRA, Million Cities of India: Growth Dynamics, Internal Structure, Quality of Life and Planning Perspectives. 1998

CRP-571 URBAN DESIGN
Theory
Theories and practices of urban design. Analysis of the visual, natural and cultural aspects of urban design. Social equity and urban design. Studying interacting pattern of land uses and activities in a city and their evolution through time. Design factors influencing the functioning and quality of a city. Urban form and landscape design problems in developing countries. Methods of identification and analysis of urban design problems in the built environment. Developers’ and users’ perspective on urban design problems and solutions. Alternative design policies and evaluation of their effects on the built environment. Introduction to sustainable urban design. Principles and approaches to sustainable urban design; livable neighborhoods, place management, reclamation of streets, revitalization of city centers and employment generation through participatory approaches etc.

Books Recommended:

CRP-572 GEOGRAPHICAL INFORMATION SYSTEMS (GIS)
Theory
Introduction to GIS. Principles of Remote Sensing and GIS. Data acquisition techniques, characteristics and nature of spatial data, projections and objects. Spatial analysis. Data model and data structure. Typical GIS operations like linking multiple varied sources of tabular data to spatial datasets, importing spatial data, adding attribute data, labeling features, working with layers, designing GIS questions, integration of GIS with other software applications like AutoCad etc. Geo-Information Management. Geostatistics. Global Positioning System and Land Information System and their...
relevance to City and Regional Planning. Research design and project management in GIS. Using GIS in carrying out urban and regional planning tasks like site selection, land use planning, zoning, land registration and titling, development control, utilities management and community planning.

Books Recommended:
1. Lillis and Thomas, Remote Sensing and Image Interpretation, John Willey, New York, 1979
2. UNCHS (Habitat), Remote Sensing for Human Settlement, Nairobi, 1989

CRP-573 URBAN LAND MANAGEMENT

Theory
Urban problems and land management tasks. Understanding the operation of land and real estate markets. The dynamics of land supply and demand. Access to land. Land transaction and land development process in developed and developing countries. The governance of land and the actors involved in land management process. Role of central, provincial and local government, NGOs, Cooperatives, and Property Dealers. The informal sector in land management. Forms of land tenure and their characteristics. Techniques of tenure reforms. Land registration and titling process; constraints and opportunities; private sector involvement in land registration and titling. Land use planning and sub-division regulations as mechanisms to manage land and overcome constraints on the land markets. Strategies and instruments to ensure effective urban land management and their relevance to developing countries; nationalization of land and land-use rights, compulsory land acquisition, land banking, land lease, land readjustment, clearance and redevelopment, resettlement. Relationship between land management and the provision of infrastructures. Guided land development. Land Management support system.

Books Recommended:
CRP-574  PROJECT APPRAISAL

Theory


Books Recommended:
1. Mathur, Low Cost Housing in Developing Countries

CRP-575  INFRASTRUCTURE PLANNING

Theory

Types of infrastructure; physical, social and institutional infrastructure; assessment of infrastructural requirements in various territorial and socio-economic contexts; need analysis for infrastructural planning; pre-requisites to infrastructural planning; spatial considerations in infrastructural planning; collaborations; partnerships and input of formal and informal sector in infrastructure planning; case studies. Integrating informally planned infrastructure within a larger plan.

Books Recommended:
1. Salvata, Environmental Engineering & Sanitation, Wiley Inter-Services, 1992

CRP-576:  Climate Considerations in Urban Design

Theory

Building Climatology: Comfort issues and climate analysis for building design. Climate characteristics of housing types like single family. Detached houses, town houses, multistorical apartment buildings, high-rise buildings, climate characteristics of internal courtyards and attached enclosed open spaces. Urban Climatology: The urban temperature: The “Heat Island” phenomenon. Overall spatial pattern of the urban heat island. Heat Island models. Impact of the nocturnal urban heat island phenomenon on human comfort, health and energy use in different climates. The urban wind field,

**Books Recommended:**

**CRP-577  SUSTAINING ENVIRONMENT**

**Theory**
Cities and sustainability, thinking about the urban environment, Understanding key problems and their cause, Can urban development be sustained, planning to sustain cities The leap: a framework for urban environmental planning, Tools for analysis and planning The leap process in action, Choosing appropriate management options, Good practice for managing the urban environment

**Books Recommended**
1. Dr. Josef Leitmann , Sustaining cities: environmental planning and management in urban design, (McGraw-Hill; New York, 1999)
CRP-578 ENVIRONMENTAL LAND USE PLANNING & MANAGEMENT

Theory
Environmental land use management; Environmental planning; Land use planning for Environment Management; Collaborative Environmental Management and public participation; Land conservation for working landscapes, Open spaces and ecological protection; Design with Nature for people, sustainable, livable and smart land use development; Local government smart growth management; Regional, state and Federal Management of Environmental land Protection; Natural hazard Mitigation; Eco system and watershed management Environmental landuse principles and planning analysis. Environmental geographical data and geographic information systems. Soil topography and land use. Land use stream flow and run off pollution. Strom water management & stream restoration. Land use and ground water. Landscape ecology, Urban Forestry and wet lands. Land use, wild life Habitats and Bio-diversity. Integration Methods for environmental land analysis.

Books Recommended
1. John Randolph Island; Press Washington

CRP-579 SPECIAL TOPICS
A student may study on the topics of his interest individually. Topics and reading lists must be approved by the faculty supervisor prior to registration for this course.

CRP-599 RESEARCH THESIS
The thesis proposal shall be prepared by the students during the First Semester as a part of sessional work in the compulsory subject of Planning Research Methods. These proposals shall be considered by the Post Graduate Board of Studies and got approved from the Vice-Chancellor through the Directorate of Advanced Studies and Research during the first month of the Second Semester. The students are expected to work on data collection and literature review during the second Semester in their spare time. However, in the thesis Semester of 3 months, the students are required to concentrate wholly on their research thesis. A time table (weekly schedule) for the thesis Semester may be prepared which will show two meeting days per week with the concerned supervisor. Other meetings may be arranged according to mutually agreed time between the supervisor and the supervisee. Full time students are strongly advised to submit their thesis at the end of the thesis Semester.
RECOMMENDATIONS

1. Town Planning may be treated as separate field to deal with the foreign MS and Ph.D. scholarships in HEC.

2. Special attention may be given for higher education of Town Planners under HEC faculty development programme.

3. Diploma course in CRP may be introduced in polytechnic institutes in the country. This qualification must be made mandatory for building inspectors in local governments, development authorities etc.

4. Appropriate number of special HEC scholarships (covering full cost) may be awarded to the candidates from Balochistan and NWFP as no CRP education opportunity is available in these provinces. To boost the development in Baluchistan and particularly in Gawader, CRP degree may be initiated in Quetta or Gawader

5. BS-CRP degree may be initiated in Karachi to meet the dire needs of the city in particular and the province in general.

6. Centres of Excellence may be established in CRP at UET Lahore immediately, and at later stage in any public sector university in Karachi.

7. Well-equipped GIS labs at CRP Department UET, Lahore, and CRP Department MUET, Jamshoro may be established.

8. Departmental Libraries in existing CRP Departments may be strengthened. One national level library containing all the books and journals relating to CRP profession may be established in Islamabad.

9. To enhance the job market, non planners working in the govt./semi govt. organization, development authorities, TMAs (Tehsil / Town Municipal Administrations), Cantonment Boards etc. may be replaced by the qualified and registered City and Regional Planners.

10. Current system of admission results sub-standard intake because the candidates who pass the general entry test give lowest priority to CRP. Therefore, committee recommends that a separate entry test may be introduced for CRP laying extra emphasis on English proficiency and drawing aptitude.

11. The committee recommends that HEC should hold refresher training courses of short duration (2-8 weeks duration) for CRP teachers at Islamabad or any other suitable place every year to update their knowledge especially about the use of computers and the new requirements under the Devolution Plan. Town planners working in the field may also be invited to join these refresher courses to update their knowledge and keep themselves abreast of the new technology. Senior professors in the field of Town Planning available in the country or from abroad may be invited to teach in these training courses.