

## **Syllabus of Bachelor of Urban and Regional Planning (BURP) Degree**

### **1<sup>st</sup> YEAR ODD SEMESTER**

#### **URP 1101: Human Settlements Development**

##### **3.0 credits; 3 hours/week theory**

The origin and evolution of ancient human settlements and cities, their relation to resources, trade routes, and transportation; city planning in the ancient and medieval and pre-industrial revolution periods; the origins of modern urban planning, the emergence of modern cities and their planning concepts (Garden City, Vertical City, Linear City, Neighborhood concept, Radburn concept). Spatial structure of urban growth (concentric zone theory, sector theory, multiple nuclei theory).<sup>2</sup>

The concept of urbanization and the nature of urbanization with special emphasis on Bangladesh. Physical, social, political, economic, and technological factors of urban growth and development. Models of rural-urban migration. The effects of urbanization and their policy implications. The growth and development of towns and cities in Bangladesh.

#### **Math 1103: Mathematics - I**

##### **2.0 credits; 2 hours/week theory**

Algebra and Geometry:

Algebra in system description. Graphs and Coordinate Geometry; linear equations, interpretation of linear inequalities, graphical solution of equations. Functions; definition, implicit and inverse functions, the standard functions, the power function, the logarithmic function, the exponential function, trigonometric function, polynomial and rational functions, the hyperbolic function, the logistic function.

Matrix Algebra.

Definition of a matrix, algebra of matrices, multiplication of matrices, transpose of a matrix and inverse of matrix, rank and elementary transformation of matrices, solution of linear equations.

#### **Chem 1103: Basic Environmental Chemistry**

##### **3.0 Credits; 3 hours/week theory**

Introduction to environmental science and its scope.

Radioactivity and radioactive particles; atomic structure. The periodic table; chemical bonds; acids and bases; concentration of solutions.

Organic Compounds, organic families and functional groups.

Introduction to polymers.

Environment, environmental segments, lithosphere, hydrosphere, biosphere and atmosphere. Composition of atmosphere. Chemical species and particulates present in earth. Industrial hazards, air and water pollutants. Sources and different kinds of pollutants. Toxicity of pollutants. Discussion on the properties of water and waste water. Characteristics of waste water, concepts and measurement of DO, BOD, COD, etc. Transformation processes of pollutants.

#### **Hum 1103: Micro-Economics**

##### **3.0 credits; 3 hours/week theory**

Introduction: Definition of Economics, concept of microeconomics. Utility, Demand and Supply Analysis: elasticity of demand and supply, consumer's surplus. Indifference Curve Analysis: Price line, consumer's equilibrium, marginal analysis. Theory of Production: Law of returns, rational region of production, profit maximization, small scale production and large scale production, optimization. Cost Analysis and Cost Curve: Short-run and long-run, fixed cost and variable cost. Concept of market and market structure: Classification of markets. Theory of Distribution: Marginal productivity theory, equity in income distribution.

**Hum 1105: English****2.0 credits; 2 hours/week theory**

General Discussion: Introduction, Mastering Various Approaches to Learning English. Grammatical Problem: Construction of Sentences, Grammatical Problems, Sentence variety and style, Conditionals, Grammar and Usages, Vocabulary and Diction.

English phonetics: The Phonetic systems and correct English Pronunciation. Reading Skill: Discussing Readability, Scan and Skim Reading, Generating Ideas through Purposive Reading, The reading of Selected Stories.

Writing Skill: Principles of Effective Writing, Organization in writing, Planning and Development, Composition, Precis writing. General Strategies for the Writing Process: Generating Ideas, Identifying Audiences and Purposes, Constructing Arguments, Stating Problems, Drafting and Finalizing.

Approaches to Communication: Communication Today, Business communication, Organization and Organizational Behavior, Developing Intra-personal Interpersonal Relationship, Introducing Dialogue

Specific Applications of: Tenders and Quotations, Resumes and Job Letters, Journal Articles, Technical and scientific Presentation.

**URP 1116: Basic Design****3.0 credits; 6 hours/week sessional**

Forms in nature, their understanding and evolution; two dimensional composition, points, straight lines and curves, and geometric shapes; understanding and use of composition elements like balance, proportion, scale, harmony, movement, etc.

**URP 1132: Introduction to Computer Applications****1.5 credits; 3 hours/week sessional**

Overview of PC operating systems (Windows and DOS), creating formatted text documents in word processor, basic spreadsheet operations and functions, creating, editing, updating a database, query and retrieval of data and generation of reports.

**Hum 1106: Developing English Skills****1.5 credits; 3 hours/week sessional**

Grammar: Tense, Article, Preposition, Subject Verb Agreement, Clause, Conditional and Sentence Structure.

Vocabulary Building: Correct and Precise Diction, Affixes, Level of Appropriateness; Colloquial and standard, Informal and Formal.

Developing Reading Skill: Strategies of Reading-Skimming, Scanning Prediction, Inferencing; Analyzing and Interpreting Variety of Texts; Practicing Comprehension from Literary and Non Literary Texts.

Developing Writing Skill: Sentences, Sentence Variety, Generating Sentences; Clarity and Correctness of Sentences; Linking Sentences to Form Paragraphs, Writing Paragraphs, Essays, Reports, Formal and Informal Letters.

Listening Skill and Note Taking: Listening to Recorded Texts and Class Lectures and Learning to Take Useful Notes Based on Listening.

Developing Speaking Skill: Oral Skills Including Communicative Expressions For Personal Identification, Life at Home, Giving Advice and Opinion, Instructions and Directions, Requests, Complaints, Apologies, Describing People and Places, Narrating events.

**1<sup>st</sup> YEAR EVEN SEMESTER****URP 1201: Fundamentals of Planning****2 credits; 2 hours/week theory**

The basic generic concepts of planning: definition of planning, dimensions of planning, spatial versus sectoral planning, the variants of spatial and physical planning. The planning process— the different stages in the continuous and cyclical process. Roles of planners, decision makers and stakeholders in the planning process. Concepts of planning: rational approach, advocacy planning, adaptive planning, systems approach. Planning process in Bangladesh: sectoral and perspective planning at the national level, integrated area development planning at regional level and spatial planning at the local level.

**URP 1221: Surveying and Cartography****3.0 credits; 3 hours/week theory**

Reconnaissance survey; traverse survey; levelling and contouring; land surveying; cartographic surveying; introductions to photogrammetry, remote sensing and global positioning system.

Types of maps; types of maps commonly used in Bangladesh. Measurement scales. Mapping techniques: physical models, photomaps, sketch maps, cartograms. Map analysis and map interpretation. Relative and absolute position methods: Local grids, Geographical grids, Lambert's methods; Universal Transverse Mercator Grid. Land partitioning systems. Map projection techniques: planar, cylindrical, conical, etc.

**URP 1253: Elements of Architecture****2.0 credits; 2 hours/week theory**

Introduction to Architecture and Architectural Design. Elements of composition: balance, scale, proportion, etc. Understanding of different architectural historical periods: Ancient, Classical, Roman, Gothic Renaissance, Baroque, Rococo. Different art movements and their impact. The cultural history of human development in different regions of the world as depicted in architecture. Environmental and regional influences on architecture. Trend of architecture in Bangladesh.

**Math 1203: Mathematics - II****2.0 credits; 2 hours/week theory**

Differential Calculus:

Limit, continuity and differentiability, successive differentiation, maxima and minima of functions of single variable.

Integral calculus:

Integration by substitution and by parts, standard integrals, definite integrals, area under plane curves.

Differential Equation:

Solution of 1st order differential equation by various methods, solutions of general linear equations of 2<sup>nd</sup> and higher order.

**Hum 1203: Macro-Economics****3.0 credits; 3 hours/week theory**

Introduction: The concept of macro-economics, savings, investment and employment, national income. Theory of Employment: Classical and modern theory of employment. Inflation: Concept of inflation, measures for controlling inflation. Determinants of income and employment: consumption function. Investment function: Types of investment, marginal efficiency of capital. Unemployment and full employment: types of unemployment, unemployment and inflation. Multiplier and Accelerator. Money and Interest: The demand for money - supply of money - alternative theories of demand for money.

**URP 1220: Graphics for Planners****3.0 credits; 6 hours/week sessional**

Lettering; mechanical and freehand drawings; use of scale and instruments; sectional and isometric views of solid geometric figures: plan, elevation, and section.

One and two point perspectives; shade and shadow of different projection drawings.

**URP 1222: Surveying and Cartography Workshop****3.0 credits; 6 hours/week sessional**

3 weeks of field and studio works related to course Plan 1221.

**URP 1234: Communication and Presentation Techniques Studio**

**3.0 credits; 6 hours/week sessional**

Techniques for communicating via different media—oral presentations, reports, posters, broadcasting, film, multimedia, Websites; techniques of visual presentation—figures, diagrams, charts, maps, cartograms, photographic compositions, etc. Students will be required to prepare several presentations on different planning problems.

**2<sup>nd</sup> YEAR ODD SEMESTER**

**URP 2101: Urban Planning Principles**

**3 credits; 3 hours/week theory**

Definition, objective and scope of urban planning. Urban functions, activities and land use components. Modern principles of planning—town centre, residential area, recreational area, industrial area, commercial area, transportation network, metropolitan region, satellite town, new town, special areas like airport, seaport, railway station, bus terminal.

**URP 2115: Site and Area Planning**

**3.0 credits; 3 hours/week theory**

Introduction to site and area planning; types of site development. Site selection and analysis; natural factors, cultural factors, and aesthetic factors; land use and circulation; site drainage, grading and earthwork; alignment of horizontal and vertical curves. Site layout and development for residential, institutional, industrial, shopping, and other types of development. Subdivision planning. Landscape and planting.

**URP 2141: Statistics for Planners – I**

**3 credits; 3 hours/week theory**

Summarizing data: Frequency distribution and graphical presentations, statistical descriptions—samples and populations. Measures of central tendency—mean, median, mode. Measures of dispersion—range, mean deviation, variance and standard deviation, moments, skewness and kurtosis.

Basic probability distributions: discrete and continuous probability distributions—Binomial, Poisson and Normal distributions. Sampling and sampling distributions.

Decision analysis: statistical inference—estimation, point and interval estimation. Aggregation and index numbers.

**CE 2151: Construction Materials**

**2.0 credits; 2 hours/week theory**

Types, preparation, properties and uses of materials - such as stone, brick, cement, sand, concrete, timber, soil, ferrous and non-ferrous metals and plastics. Specifications and quality control.

**Hum 2105: Sociology for Planners**

**3.0 credits; 3 hours/week theory**

Scope. Some basic Concepts. Social Evolution and Technique of Production. Culture and Civilization. Social Structure of Bangladesh. Population and Resources. Oriental and Occidental Societies. Industrial Revolution. Family - urbanization and industrialization. Urban Ecology. Rural Sociology. Sociology of Development and Underdevelopment. Socialization: Process of social learning; Socialization and family structure.

**URP 2110: Social and Physical Surveys**

**3 credits; 6 hours/week sessional**

Meaning of survey, types of surveys, purpose of surveys and their applications in planning.

Elements of social survey—units, subjects and spatial coverage. Social survey methods. Household survey and questionnaire

preparation. Social survey data analysis methods. Students will be required to work on a topic which would involve elements of social survey, i.e., questionnaire design and preparation, coding, data collection and analysis as part of their studio work.

Physical survey: secondary survey on topography, land level, natural drainage and slope. Primary survey of land uses, transportation network, access ways, utilities and services network, types of structures, age of structures, land values, population density distribution etc.

### **URP 2132: Computer Applications in Planning**

**3.0 credits; 6 hours/week sessional Prerequisite Plan 1132**

Application of statistical techniques and techniques of urban and regional analysis through the use of application software such as SPSS, Excel etc. Important planning techniques to be covered include Population Projection, Economic Base Analysis, Industrial Structure Analysis, Input-Output Analysis etc. while statistical techniques include Frequency Distribution including Cross Tabulation, Graphical Presentation, Test of Independence, Analysis of Variance, Correlation and Regression Analysis etc.

## **2<sup>nd</sup> YEAR EVEN SEMESTER**

### **URP 2201: Urban Planning Techniques**

**3 credit; 3 hours/week theory**

Functions, forms and contents of urban development plan, strategy plan, structure plan, master plan, local area plan, action plan, subject plan. Data and information need for planning, planning techniques applied in different stages of the urban planning process, techniques for urban renewal and upgrading (conservation, improvement and redevelopment), techniques for land development (land readjustment, guided land development). Planning standards for different urban functions, types of planning standards and their importance. Urban planning studies and techniques of analysis of population, employment, economic functions, shopping, housing,

leisure and recreation. Implementation tools and development control.

### **CE 2251: Water Resources Planning**

**3.0 Credits; 3 hours/week theory**

Hydrologic cycle, precipitation, stream flow, evaporation and transpiration, rainfall-runoff relationship, hydrograph analysis, storm water drainage, groundwater occurrence and wells; behavior of alluvial rivers, navigation and dredging, river training and bank protection works; irrigation planning and methods of irrigation; flood mitigation approaches; integrated water resources management—economic, social, environmental and institutional aspects.

### **URP 2223: GIS and Remote Sensing**

**3.0 credits; 3 hours/week theory**

Meaning of GIS and its application in planning. Essential elements of GIS. Data structures-raster data structures, vector data structures. Data acquisition-existing data sets, developing new data sets. Data management. Data manipulation and analysis. Remote sensing and image analysis - processing of remotely sensed digital data. Integration of remote sensing with GIS. Applications of GIS in planning.

### **URP 2241: Statistics for Planners – II**

**3 credits; 3 hours/week theory**

Decision Making: Statistical inference: hypothesis testing, inference about means, standard deviations and proportions; analysis of variance: Chi-Square test. Measurement scales. Nonparametric tests. Simple correlation and linear regression: Least-squares equation, goodness-of-fit criteria, standard errors, significance tests for coefficients. Simple curvilinear regression by variable transformation. Forecasting methods—time series analysis, causal and probabilistic methods. Population forecasting methods: arithmetic, geometric, decreasing rate of increase,

logistic, ratio and correlation, trend projection and cohort survival.

**Hum 2203: Public Finance**

**2 credit; 2 hours/week theory**

Meaning and scope of public finance. Public expenditure: nature, principles and effects. Taxation: principles, types and effects. Public debt. The public budget: balanced and unbalanced budget. Deficit financing. Fiscal policies and their impacts. Public finance in Bangladesh: nature and structure of taxation, national budget and fiscal policies.

**Hum 2205: Accounting**

**2.0 credits; 2 hours/week theory**

Introduction to Accounting; Accounting equation; Business data processing—Transaction, Double entry mechanism, Journal, Ledger, Trial balance. Preparation of financial statement, financial statement analysis.

Long-term investment decision—Capital budgeting; Decision under uncertainty. Cost concept and classification; Cost-volume-profit analysis; Break-Even-Point & sensitivity analysis. Taxation-Definition of tax; types of tax; Canons of tax; Tax administration in Bangladesh; Tax holiday; Capital allowance; corporation tax; Tax credit.

**URP 2216: Site and Area Planning Studio**

**3.0 credits; 6 hours/week sessional**

Studio works related to course Plan 2115. Practical and field works relating to site, area and land subdivision planning.

**URP 2224: GIS and Remote Sensing Studio**

**3 credits; 6 hours/week sessional**

Individual or group projects to analyze planning problems with the help of GIS and RS techniques

**URP 2234: Programming Techniques**

**2 credits; 4 hours/week sessional**

Exercises for developing algorithms for simple computer programs for data analysis and solving planning problems; programming exercises in a high level language like C/C++ involving, inter alia, reading data from files, using different data types, iterative and conditional processing and producing formatted outputs.

**3<sup>rd</sup> YEAR ODD SEMESTER**

**URP 3115: Landscape Planning and Design**

**2.0 credits; 2 hours/week theory**

Introduction to landscape planning and its scope. Historical references landscape planning and design. Basic design methods and approaches. Ecological systems and climatic elements. Landscape conservation in macro and regional level. Landscape planning in urban scale for residential, recreational and commercial environments. Site development objectives and design principles. Plantation and plantation design.

**URP 3127: Transportation Study**

**3.0 credits; 3 hours/week theory**

Elements of transportation system. The land use and transport interaction. Fundamentals of landuse-transport planning. Fundamentals of transport demand and supply analysis. Urban transportation study: defining the study area and the network, volume study, O-D survey, parking survey, public transport survey, goods traffic survey, employment survey, inventory of physical infrastructure. Characteristics of different modes. Concepts of roadway capacity. Hierarchy of roads. Concept of environmental area; pedestrian traffic. Cross-sectional elements.

**CE 3151: Elements of Solid Mechanics****3.0 credits; 3 hours/week theory**

Force, resultants and components, moments and parallel coplanar forces, centroids, moment of inertia. Fundamental concepts of stress and strain. Mechanical properties of materials: stress and strain in members subject to tensile, compressive and shear forces; bending moment and shear force diagrams for statically determinate structures.

**URP 3111: Rural Development Planning I****3.0 credits; 3 hours/week theory**

Distinction between urban and rural areas. Analysis of rural settlement patterns. Social and cultural characteristics of rural communities. Meaning of rural development. The concept, nature and scope of integrated rural development. Integration of functional and spatial aspects in the context of rural development. Planning procedures for integrated rural development.

Resources for rural development - land, water, human, forest, livestock etc. Policies for rural resources development. Rural industrialization and rural centre planning. Rural development programs in Bangladesh - past and present. Governmental and nongovernmental organizations involved in rural development activities. Problems and issues in local level rural planning in Bangladesh.

**Hum 3105: Social Psychology****2.0 credits; 2 hours/week theory**

Introduction to Social Psychology. The Nature of Social Psychology. Social factors in perceptual cognitive processes: Social perception; person perception. Social attitudes: The nature of attitude; the formation of attitude; the change of attitude. Process of social learning; Socialization and family structure. Emerging norms and conformity. Leadership. Youths and drugs: youths in Bangladesh; Sources of frustration among youths, drugs as a menace to the society and individuals.

**URP 3145: Land Economics****2 credits; 2 hours/week theory**

Basic concepts of land economics. Land market. The demand for and supply of land resources. Population pressure and the demand for land. Determination of the requirements of land resources. Economic returns to land resources. The land development process. Locational and institutional factors affecting land use. The value of land and the methods of land valuation.

**URP 312: Urban Planning Studio****3.0 credits; 6 hours/week sessional**

Case studies in urban studies and planning. Studio works related to course Plan 2101 - practical and field works on urban planning.

**URP 3112: Rural Planning Studio****3.0 credits; 6 hours/week sessional**

Individual or group projects involving application of planning techniques for analyzing problems related to rural development planning.

**3<sup>rd</sup> YEAR EVEN SEMESTER****URP 3213: Regional Development Planning****3.0 credits; 3 hours/week theory**

Definition and types of regions. Regionalization and the delineation of planning regions. Levels of planning - national, regional, sub-regional and local. Need and scope of regional planning. Regional analysis: regional data base; income measures and regional social accounting; input-output analysis; industrial structure analysis; interregional trade multiplier analysis. Theories and models of regional growth: Aggregate growth models; industrial location theory; central place theory; growth pole theory; agropolitan growth. Regional growth – convergence or divergence. Regional development policies at home and abroad. Policy issues: Place

prosperity vs. people prosperity; economic development vs. regional growth. Regional distribution of public investment - dispersal vs. concentration; balance vs. imbalance; growth vs. welfare; efficiency vs. equity. Policy instruments

### **URP 3227: Transportation Planning II**

#### **3.0 credits; 3 hours/week theory**

Transportation system in Bangladesh. The key issues in urban and national transport policy and implementation of transport plans and programs. Policy options in urban transportation; the role of different modes; cost structure. The transportation planning process at national, regional and urban levels. Fundamentals of transportation economics. Transportation and environment. Local area transportation planning. System modeling and strategy development. Planning of transport infrastructure. Planning for urban public transportation. NMT planning and management. Demand management.

### **CE 3251: Elements of Civil Engineering Structures**

#### **3.0 credits; 3 hours/week theory Prerequisite CE 3151**

Structural forms and systems for buildings, bridges, communication and transmission structures; loads on structures; types of foundation, concept of bearing capacity and settlement. Introduction to design in reinforced and pre-stressed concrete; design codes.

### **Hum 3203: Political Science and Local Government**

#### **3.0 Credits; 3 hours/week theory**

Some basic concepts of government and politics, functions, organs and forms of modern state and government. Government and politics of Bangladesh. Some major administrative systems of developed countries.

Local government system in Bangladesh and its evolution. Relations between national and local governments. Structure, composition and functions of local government bodies. Local level

planning and resource mobilization. Problems and issues related to capacity building in local government bodies.

### **URP 3207: Neighborhood Planning and Community Development**

#### **3.0 credits; 3 hours/week theory**

Concept of neighborhood; the physical, spatial, social, economic, political and cultural aspects of neighborhood planning; neighborhood functions, service facilities and their standards; upgrading of service facilities; functional and environmental improvement; spatial organization.

The issues in community development; problems in urban communities of Bangladesh; community based organizations (CBOs); public participation in community development, community revitalization, service management and economic development in low income urban communities especially in the slums and squatter settlements.

### **URP 3217: Urban Design**

#### **3.0 credits; 3 hours/week theory**

Historical overview of urban design - from tree dwelling to Renaissance. Definition of urban design, its aims and objectives. Elements of design - unity and space, proportion and scale, balance, uniformity and contrast, etc. and their application in urban design. Urban aesthetics. Urban spaces and their types and perception. City planning and design according to artistic principles, approaches and levels of analysis.

### **URP 3247: Operations Research and Systems Analysis**

#### **3.0 credits; 3 hours/week theory**

Introduction to operations research. Techniques for analyzing interconnected policy decision areas. Optimization techniques in the decision making process; elements of mathematical programming: linear programming, graph theory, network analysis; fundamentals of simulation techniques, queuing theory. Systems approach in planning.



**URP 3211: Rural Development Planning II****3 credits; 3 hours/week theory**

Rural-urban disparities; rural-urban linkages and rural-urban migration; people's participation and rural development; Rapid Rural Appraisal and Participatory Rural Appraisal; rural services and utilities development (transport, water supply, sanitation, electrification and extension services); rural economic and social sectors development—agriculture, rural non-farm activities, community development, women's empowerment, health and nutrition, education; rural growth centre development in Bangladesh; strengthening local level institutions and rural development in Bangladesh; NGOs and rural development; rural poverty and micro credit programs for rural poverty alleviation; disaster management planning in rural areas; practices and experiences of rural development in developed and developing countries.

**URP 3208: Participatory Planning Studio****3.0 credits; 6 hours/week sessional**

Local level planning and its importance. Contexts of local level planning. Approaches to local level planning. Guidelines for local level planning. People's participation in planning—meaning and types of participation. Approaches to participation organizational and functional. Problems of participation.

**URP 3216: Landscape Planning Studio****3.0 credits; 6 hours/week sessional**

Application of design and planning principles and techniques of landscape developments. Site analysis and study of landscape elements. Application of landscape conservation principles and strategies on regional level development process

**4<sup>th</sup> YEAR ODD SEMESTER****URP 4000: Project/Thesis****2.0 credits; 2 hours/week/term (for 2 terms)**

Major individual studies on real world topics related to planning, development, implementation or policy issues. The objective is to develop initiative, self reliance, creative ability and some planning experience for the students. The outcomes of the study must be submitted in a comprehensive report following a standard format of presentation acceptable to the Department along with appropriate drawings, maps, charts, etc.

**URP 4105: Housing and Real Estate Development****3 credit; 3 hours/week theory**

Social, physical, economic and cultural aspects of housing. Typology of housing. Nature of housing problems in Bangladesh and scopes for housing development (including real estate development). Types and forms of ownership (single, multiple, tenancy in common, joint tenancy, general and limited partnership, syndicate, investment trust, condominiums, cooperatives etc.). Accessibility to housing by different income groups. Process of housing development. Housing finance and resource mobilization, housing package, credit facilities. Housing development and management in both public and private sectors. Role of various professional groups in housing sector development. Housing policies in Bangladesh and other developing countries. Social program and public policy for low income housing. Role of private formal sector in the housing sector of Bangladesh. Real estate economics: characteristics of supply and demand. Real estate trade cycle (both long term and short term). Real estate instruments: contract, deed, lease, mortgage, broker and brokerage. Planning considerations for real estate development. Evaluation of

real estate projects-cost estimation, feasibility study, environmental impact statement, implementation, monitoring and management. Regulatory measures to guide and monitor housing development and the developers.

### **URP 4137: Project Evaluation and Management**

#### **3 credit; 3 hours/week theory**

Project cycle. Concepts of evaluation: the efficiency versus equity criteria, economic versus financial evaluation; methods of evaluation; the welfare basis of social evaluation: consumers surplus, producers surplus, Pareto optimality, transfer payments, intangible items, shadow pricing, externalities, equity problem; concept of social cost benefit analysis; time value of money; discounting technique; choice of discount rate and social time preference; investment criteria: basic concepts of financial accounting; dealing with risk and uncertainty. Introduction to other techniques of evaluation. Appraisal requirements by national and international financing agencies. Concept of project management, introduction to different management techniques.

### **URP 4139: Environmental Planning and Management**

#### **3.0 credits; 3 hours/week theory**

Theories of natural systems. Concepts important to environmental planning. The environmental impacts of human actions. The and utilities development (transport, water supply, sanitation, electrification and extension services); rural economic and social sectors development—agriculture, rural non-farm activities, community development, women's empowerment, health and nutrition, education; rural growth centre development in Bangladesh; strengthening local level institutions and rural development in Bangladesh; NGOs and rural development; rural poverty and micro credit programs for rural poverty alleviation; disaster management planning in rural areas; practices and experiences of rural development in developed and developing countries.

### **URP 4115: Planning of Tourism and Recreational Facilities**

#### **3.0 credits; 3 hours/week theory**

Key concepts in recreation planning. Recreation needs and resources. Functions and classification of open space, parks, and recreation areas. Analyses of demand, supply and use pattern. Parks and open space standards - approaches to developing standards. Selection of sites. The recreation space master plan and its components. Implementation strategies.

### **CE 4151: Basic Environmental Engineering**

#### **3.0 credits; 3 hours/week**

Water Supply: objectives and basic elements of water supply system; water requirements; water requirements; population prediction and water demand assessment; fire demand; planning of water supply systems - sources, abstraction, transmission, treatment and distribution.

Sanitation: urban and rural sanitation; low-cost sanitation technologies; elements of a conventional water borne system - collection, transportation, treatment and disposal; planning of sanitation systems. Environmental pollution - air, water and soil, and noise pollution.

### **URP 4140: Internship**

#### **Non-credit; 4 weeks;**

4 weeks of internship in a planning related job at an organization/firm prescribed by the department. Performance will be evaluated based on report submitted by the intern and evaluation of the reporting officer at the organization/firm. Grade awarded shall be 'S' for satisfactory and 'U' for unsatisfactory.

**URP 4114: Regional Planning Studio****3.0 credits; 6 hours/week sessional**

Individual or group projects involving application of planning techniques for analyzing problems related to regional development planning.

**URP 4128: Transportation Planning Studio****3.0 credits; 6 hours/week sessional**

Case studies in transportation studies and planning. Workshops on local area transport planning, vehicular and pedestrian circulation plan for residential area, shopping complex, precinct, and other practical and field works related to courses Plan 343 and 345.

**4<sup>th</sup> YEAR EVEN SEMESTER****URP 4000: Project/Thesis****4.0 credits; 4 hours/week/term (for 2 terms)**

Major individual studies on real world topics related to planning, development, implementation or policy issues. The objective is to develop initiative, self reliance, creative ability and some planning experience for the students. The outcomes of the study must be submitted in a comprehensive report following a standard format of presentation acceptable to the Department along with appropriate drawings, maps, charts, etc.

**URP 4201: Urban Management and Governance****3 credits; 3 hours/week theory**

Important factors influencing urban management. Principles, tools and methods of management. Organizations involved in urban management and their functions: service functions, regulatory functions, urban planning and development, staff management, financial administration, public relations, intergovernmental relations. Community participation in urban management. Definition and scope of governance. Aspects of and stake holders

in urban governance in Bangladesh. Problems of governance in large cities.

**URP 4203: Legal Basis of Planning****3.0 credits; 3 hours/week theory**

Legal aspects of planning and its importance. Enabling legislation process. Planning laws in different countries. The Development Plan (structure and local) process and need for legislation. Development control-planning permission, development orders, special forms of control. New town development laws. Compensation and betterment problems. Urban renewal practice. Planning laws in Bangladesh. Pourashava Ordinance, Town Improvement Act, East Bengal Building Construction Act, Building Regulations of RDA. Land acquisition and compensation rules and regulations. The meaning of development-the control of development including planning permission, development orders, purchase notice, the enforcement of planning controls, compensation and betterment problems with reference to Bangladesh.

**URP 4207: Development Planning****3.0 credits; 3 hours/week theory**

The nature of development planning. The rationale for planning in developing economies. Phases of development plan- the macro phase (national), the middle phase (regional), and the micro phase (micro regional). Aims, objectives and procedures of planning at different phases. Relationships among the macro, middle and the micro phase. Formulation of development plans: Use of models in planning - aggregate models, sector models, and inter-sectoral models. Important considerations in choosing particular models. Some problems of development planning: The concept of capital-output ratio; the choice of technique; investment criteria. Development planning in Bangladesh: Organizations involved in national, regional and local level planning. Types of national plans. The process of approval of plans. Processing of development projects and the use of standard proforma. Political factors in

development planning in Bangladesh. Assessment of development plans of Bangladesh.

**URP 4209: Planning of Utility and Municipal Services**  
**3 credits; 3 hours/week theory**

Nature of urban and rural services. Comparison between physical and social infrastructure services. Needs for services according to age groups: population pyramids and needs for social services. Planning, funding, provision, management and maintenance of basic utility services in urban areas: water supply, sewerage, drainage, electricity supply, gas and telephone, and associated problems: under-funding, under-investment, cost recovery, inadequate maintenance, lack of coordination and ineffective management. Participation and partnership in urban services management.

Types of municipal services: transport infrastructure, street lighting, water supply, solid waste management, parks and open spaces, graveyards, markets, slaughter house, basic services for slums, public health and education. Revenue sources of city corporations and municipalities, and problems faced in the delivery of services and collection of taxes.

**URP 4239: Environmental and Resource Economics**  
**3.0 credits; 3 hours/week theory**

An introduction to welfare economics examining basic concepts including consumer surplus, Pareto optimality, externalities and the welfare of future generations. Alternative economic approaches to pollution and congestion control, costing, the role of taxes and subsidies, the sale of pollution rights, the use of environmental standards and pollution control technology. Cost effectiveness analysis. Basic concepts of social cost-benefit analysis. Economic theories relating to resource depletion and conservation.

**URP 4243: Natural Hazards and Disaster Management**  
**3 credits; 2 hours/week theory, 2 hours/week sessional**

Meaning of hazard and disaster, types of hazards, assessment of hazards, vulnerability analysis, risk assessment, analysis of disaster-related behavior pattern, people's awareness and perception of hazards and response to danger, disaster management cycle, disaster management planning, links between development planning and disaster management planning, social considerations and people's participation in disaster management, institutional framework for disaster management. Hands-on exercises on hazard and risk assessment, land use planning with emphasis on vulnerability reduction etc.

**URP 4245: Urban and Regional Economics**  
**3 credits; 3 hours/week theory**

Urban economics: Nature and functions of cities. Urban spatial structure: models of urban spatial structure; models of intra-urban location decisions. Urban growth: the economic base and urban growth; the human ecological approach to urban growth; communication theory and urban growth; city size and urban growth. Nature of urban problems: land use, housing, urban transportation, urban environment and urban poverty. The urban public sector: urban fiscal problems; methods of financing urban government expenditures.

Regional economics: The region as a concept. Regional structure: systems of cities; industrial location patterns; transportation and the spatial organization of economic activities. Measurement and change in regional economic activity: regional accounts; interregional theory of income and trade; regional economic growth. Regional policy: the national interest and regional objective; aggregate efficiency and interregional equity; alternative strategies for problem regions

**URP 4249: Land Development and Management**  
**3.0 credits; 3 hours/week theory**

Land management in Bangladesh: land records, transfer, taxation, legal aspects. Urban and rural land policies in Bangladesh and other neighboring countries. Urban land development techniques:

land bank, excess condemnation, guided land development, land readjustment. Land subdivision Land market in Bangladesh. Land Information System (LIS): essential elements, planning and designing an LIS, data acquisition, data management, data manipulation and analysis, applications for planning, development control and management purposes.

**URP 4238: Project Evaluation and Management**

**2.0 credits; 4 hours/week sessional**

Cases studies in project evaluation. Project formulation practices and approval procedure in Bangladesh. Preparation of project documents: PPs and TAPPs; workshops related to course URP 401.