

SEMESTER - III

SL No.	Course No.	Course Title	Contact Hours/ Week	Credit
1.	CE 203	Engineering Materials	4	4
2.	CE 211	Mechanics of Material-I	3	3
3.	CE 221	Fluid Mechanics-I	4	4
4.	Math 201	Mathematics -III	4	4
5.	Hum 201	Sociology and Government	2	2
6.	CE 204	Engineering Materials Sessional	3	1.5
7.	CE 210	Details of Constructions	3	1.5
8.	CE 222	Fluid Mechanics Sessional -1	3	1.5
Total			26	21.5

No. of Theory Courses = 05
 No. of Sessional Courses = 03

Total Contact Hour =26
 Total Credit =21.5

SEMESTER – III

CE 203 Engineering Materials

Lecture:4 hrs/ week

Credit:4.00

Brick: Constituents of brick clay, characteristics, specifications, classification and uses of bricks, efflorescence.

Aggregate: Classification and properties of aggregate, grading of aggregate, testing of aggregate, classification, properties, tests and function of sand.

Cement: Point of difference between cement and lime, composition of ordinary cement, functions of various ingredients of cement, physical properties of Portland cement, types and tests of cement.

Mortar and plaster: Types of mortar, functions of sand and surki in mortar, uses of mortar, preparation of cement mortar, precautions in using mortars, plastering, pointing, white and color washing and distempering.

Concrete: Function of aggregate and water in concrete, segregation, bleeding, properties of concrete, strength and workability of concrete, factors influence the properties of concrete, creep of concrete, chemical attack of concrete, design of concrete mixes.

Corrosion and its prevention, paints, varnishes, properties and uses of rubber, timber plastics and ferrocement.

Atomic structures and bonding, yielding, fracture, elasticity, plasticity.

CE 211 Mechanics of Materials-I

Lecture:3 hrs/ week

Credit:3.00

Prereq. CE 103

Fundamental concept of stress and strain. Mechanical properties of materials, strain energy, stresses and strains in members subjected to tension, compression, shear and temperature changes. Bending moment and shear force diagrams of beams and frames, flexural and shearing stresses in beam, shear flow and shear center. Thin walled pressure containers: riveted and welded Joints.

CE 221 Fluid Mechanics-I

Lecture:4 hrs/ week

Credit:4.00

Development and scope of fluid mechanics fluid properties, Fluid static's Manometers and

pressure gages, pressure head, center of pressure, application of hydrostatic forces. Buoyancy

and Floatation: Principle of Archimedes's stability of floating body, Metacenter. Kinematics of

fluid flow. Fluid flow concept and basic equation continuity equations, Bernoulli's equation,

Energy equation, Momentum equation and forces in fluid flow. Similitude and dimensional

analysis. Study in compressible flow in pressure conduits, laminar and turbulent flow. Pipe flow: general equation for pipe flow and minor losses in pipe flow. Pipe flow problems: pipe in series and parallels, branching of pipes and pipe networks. Fluid measurements: pitot tube, orifice, mouthpiece, nozzle, venturimeter and Weir.

Math 201 Mathematics-III

Lecture: 4 hrs/ week

Credit:4.00

Differential equation: Definition, formation of differential equation and solution of first order ordinary differential equation by various methods. Solution of differential equation of first order and higher degrees. Solution of linear equations of second degree and higher orders with constant co-efficient. Solution of differential equations when the dependent and independent variables are absent. Solution of differential equation in series by the method of Fobenious: Bessel's function, Legendre's polynomials and their properties.

Fourier series and partial differential equation: Fourier series, Periodic functions, odd and even function, evaluation of Fourier co-efficient, Fourier integral, Fourier transforms and their uses to physical problem.

Partial differential equation: Solution of first order partial differential equation by Lagrange method and Charpit method. Definition of harmonics, Laplace equation in Cartesian, polar, cylindrical and spherical co-ordinates.

Hum 201 Sociology & Government

Lecture:2 hrs/ week

Credit:2.00

Sociology: scope, some basic concepts. social evolution and techniques of production, culture and civilization. Social structure of Bangladesh. Population and world resources. Oriental and occidental societies, industrial revolution. Family urbanization and industrialization, urban ecology, co-operative and socialist movements. Rural sociology.

Government: Some basic concepts of government and politics. Functions, organs and forms of modern state government, socialism, Fascism, Marxism, U.N.O. Government and politics of Bangladesh. Some major administrative systems of developed countries. Local self-government.

CE 204 Engineering Materials Sessional

Contact Hours: 3 hrs/ week

Credit: 1.50

Test of specific gravity, unit weight, moisture content and absorption of coarse and fine aggregate, normal consistency, setting time, direct tensile and compressive strength of cement mortar, gradation of coarse and fine aggregate, design and testing of concrete mix.

CE 210 Details of Construction

Sessional: 3 hrs/ week

Credit: 1.50

Brick masonry, framed structures, arches and lintels, details of floors and roofs, pointing, plastering and interior finishing. Scaffolding and staging, shoring and underpinning, thermal insulation and acoustics, stairs: types and construction details, specifications of materials for the above constructions.

CE 222 Fluid Mechanics Sessional-I

Contact Hours: 3 hrs/ week

Credit: 1.50

Center of pressure, proof of Bernoulli's theorem, flow through venturimeter, flow through orifice and mouthpiece, concept of velocity by co-ordinate method, flow through mouthpiece, flow over V-notch, fluid friction in pipes, flow over sharp-crested weir.