SEMESTER - VII

SL No.	Course No.	Course Title	Contact hour/ Week	Credit
1.	CE 411 Prereq. CE 313	Structural Analysis & Design-III	4.0	4.00
2.	CE 421 Prereq. CE 321	Irrigation and Flood Control	3.0	3.00
3.	CE 431 Prereq. CE 333	Geotechnical Engineering-III	3.0	3.00
4.	CE 441 Prereq. CE 341	Environmental Engineering-II	3.0	3.0
5.	CE 451 Prereq. CE 351	Transportation Engineering-II	3.0	3.0
6.	CE 412	Structural Analysis & Design Sessional-III	3.0	1.5
7.	CE 442	Environmental Engineering Sessional-II	1.5	0.75
8.	CE 452	Transportation Engineering Sessional-II	1.5	0.75
9.	*CE 400	Project & Thesis	6.0	1.5
Total			**28.0**	**20.50**

* This Credit will be assessed at the end of 8th semester.

No. of Theory Courses = 05
No. of Sessional Courses = 04

Total Contact Hour = 28.0
Total Credit = 20.50

SEMESTER - VII

CE 411 Structural Analysis and Design-III

Lecture: 4 hrs/ week
Credit: 4.00
Prereq. CE 313

Analysis of statically indeterminate structures by displacement method, slope deflection and moment distribution method**.** Analysis of composite structures. Influence lines for statically indeterminate beams, frames, arches and grids. Stiffness matrix, member stiffness, stiffness transformation, assembly of stiffness matrices & solution for beams, frames and plane trusses and flexibility matrix.

CE 411 Structural Analysis and Design Sessional-III

Contact Hours: 3 hrs/ week
Credit: 1.50

Principles of different types of bridges over rivers and wide canals, detailed design of a balanced cantilever bridge.

CE 421 Irrigation and Flood Engineering

Lecture: 3 hrs/ week
Credit: 3.00
Prereq. CE 321

Irrigation:

Importance of irrigation: source and quality of irrigation water, soil-water relationship, consumptive use, estimation of irrigation water requirements and irrigation scheduling and methods of irrigation. Design of irrigation canal system, irrigation structures and irrigation devices. Water logging, salinity and reclamation. Problems of irrigated land, irrigation projects and institutional constraints.

Flood Engineering:
Flood and its causes, Methods of flood management, structural and non-structural measures, economic aspects of flood management, flood risk and vulnerability analysis, direct and indirect losses of flood. Flood damage assessment, flood damage in urban and rural areas.

CE 431 Geotechnical Engineering-III

Lecture: 3 hrs/ week
Credit: 3.00
Prereq. CE 333

Foundation Engineering: report and selection of type of foundation, design and construction of mat and pile foundations. Sheet pilling wall, caissons and cofferdam. Introduction to soil improvement techniques, Design criteria for machine foundation and cofferdam.

CE 441 Environmental Engineering-II

Lecture: 3 hrs/ week
Credit: 3.00
Prereq. CE 341

Environmental sanitation, introduction to environmental sanitation, environmental pollution, environmental protection and management, sanitation practices in Bangladesh, different sanitation options-various types of pit latrines. Pour flush latrines etc., upgrading of existing systems, construction and maintenance of sanitation facilities, sanitation for densely populated area, community latrine cum bio-gas plant, design and construction of septic tank and soak well, building sanitation, code of practice.

Wastewater, estimation of wastewater, wastewater collection system, hydraulics of sewer, design, construction and maintenance of sanitary sewer and storm drainage system, microbiology of wastewater, preparatory, primary and secondary treatment waste stabilization ponds and other methods and disposal of waste water, aquaculture as treatment option, small bore sewer system, treatment and disposal of industrial effluents.
Health & hygiene: Disease description, transmission and control, hygiene education, scope and methodology, social mobilization for hygiene practice, integrated approach for water, sanitation and health education.

CE 442 Environmental Engineering Sessional-II

Contact Hours: 1.5 hrs/ week
Credit: 0.75

Bacteriological tests of water, design of water supply system.

CE 451 Transportation Engineering-II

Lecture: 3 hrs/ week
Credit: 3.00
Prereq. CE 351

Sub-grade, sub-base and base courses, soil stabilization and soil aggregates in road constructions, low-cost roads, mix design methods, design, construction and maintenance of flexible and rigid road pavements, equipment.

Railways: general requirements, alignment, permanent way, station and yards. signaling, points and crossings, maintenance.

Waterways: Introduction, harbors, ports, docks, coastal structure

CE 452 Transportation Engineering Sessional-II

Contact Hours: 1.5 hrs/ week

Credit: 0.75

Tests on sub-grade, sub-base and base materials, Mix design Method for bituminous concrete

CE 400 Project and Thesis

Hours/ week: 6

Credit: 1.50

Experimental and theoretical investigation of various topics in structural Engineering, concrete technology, Environmental Engineering, transportation Engineering, Geotechnical Engineering and water resources engineering. Individual or group study of one or more topics from any of the above fields. The students will be required to submit thesis/ project report at the end of the work.