

Distributors Ltd., New Delhi, 1994.

4. Goyal, S.C. and Jain, O.P. "Manual of Estimating", Nem chand & Bros., Roorkee(U.P.). 1960.
5. Hoelscher, R.P. & Springer, C.H., "Engineering Drawing & Geometry", John wiley & Sons Inc., London, 1958.
6. Shah. M.G., Kale, C.M. and Patki, S.Y., "Building Drawing", Tata McGraw Hill publishing Co. Ltd., 2<sup>nd</sup> edition, New Delhi, 1985.
7. Chakraborty, M., "estimating costing and valuation in civil Engg."

## VIII SEMESTER

### CE 1801 STEEL STRUCTURES II (3-1-0)

#### I. Moment-resistant Connections

Connections for frames, brackets.

#### II. Industrial Buildings

Loads, General arrangement and stability considerations, Design of purl ins, roof trusses, industrial building frames, gantry girder and bracings.

#### III. Bridge

Plate girder and truss bridges, General arrangement, Design loads for highway/railway bridges, Design of truss bridge for railway loading.

#### IV. Tanks

Cylindrical tanks, Pressed steel tanks, Stagings for tanks.

#### V. Towers

Transmission line towers, Microwave towers, Design loads, Classification, design procedure and specifications.

#### VI. Plastic methods

Analysis and design of beams and frames.

#### References

1. Arya, A.S., Ajmani, J.L., "Design of Steel Structures", Nem Chand & Bros., Roorkee (U.P.), 1992.
2. Bresler, B., Lin, T.Y. and Scalzi, I.B., "Design of Steel Structures", Wiley Eastern Pvt. Ltd., New Delhi, 1970.
3. Duggal, S.K. "Design of Steel Structures", Tata McGraw - Hill Book Pub. Co. Ltd., New Delhi, 1993.
4. Kazimi, S.M.A. and Jindal, S.K., "Design of Steel Structures", Prentice Hall of India Pvt. Ltd., New Delhi, 10iN.
5. I. ... tisllllllllldLIJar, B.S. and Sinha, U.A., "Ijc~igJl of Steel Structures", Tata McGraw Hill Pub Co. Ltd., New Delhi, 1979. Negi, L.S., "Design of Steel Structures", Tata McGraw Hill Publishing Co Ltd, New Delhi, 1995. Punmia, B.C., Jain, A.K. and Jain, A.K., "Design of Steel Structures", Vol. I, Arihant Publications, Bombay - Jodhpur, 1995.
6. Raghupathi, M., "Design of Steel Structures", Tata McGraw-Hill Pub. Co. Ltd., New Delhi, 1995.

9. Rum Chandra "Design of Steel Structures", Standard Book House, Nai Sarak, Delhi - 6, 1975.
10. Cooper, S.E. and Chen, AC., "Designing Steel Structures", Prentice-Hall, Inc., N.J. USA, 1985.
11. Gaylord, E.H., Jr. and Gaylord, C.N. Charles, "Design of Steel Structures", International Student Edn., McGraw Hill Book Co., Inc./Koga-kusha Co. Ltd., 1975.
12. Marow, H.W., "Elements of Steel Design", Prentice - Hall Inc., N.J., USA, 1987 ..
13. McCormac, J.C., "Structural Steel Design", International Text book co. Pennsylvania, USA, 1967.
14. McGuire, Willam, "Steel Structures", Prentice Hull Inc., N.J., U.S.A., 1968.

## CE 1802 WATER RESOURCES ENGINEERING II (3-1-0)

### I. Regulation Works

Falls, classification of falls. Design of falls, Distributary head regulator and cross-head regulator. Escape. Bed bars.

### II. Cross-Drainage Structures

Necessity of cross-drainage structures. their types and selection, comparative merits and demerits. designs of various types of cross-drainage structures-aqueduct, syphon aqueducts. super passage. syphon, level crossing and other types.

### III Diversion Headworks

Selection of site and layout, different parts of diversion-headworks, types of weirs and barrages.

Design of weirs on permeable foundation, silt excluders and different types of silt ejectors.

### IV. Dams

Suitable sites, different types, principles of design of straight gravity and earth dams, mass concreting of dams.

### V. Spillways

Spillway capacity, flood routing through spillways, different types of spillways and gates, energy Dissipation below spillways.

### VI. Hydro-Power Plants

General features of hydroelectric schemes, elements of power house structure, selection of turbines.

draft tube and setting of turbine, cavitation.

## VII. Ground Water

Occurrence and distribution of ground water, aquifers, movement of ground water, Darcy's law, safe yield of a basin, steady flow towards well in confined and unconfined aquifers, well losses and specific capacity of well, ground water quality and ground water budget, types of wells, construction and design of wells - screens, and gravel packs, pumping equipment.

### References

1. Asawa, G.L., "Irrigation Engineering", 2nd Ed., New Age International Publishers, New Delhi. 1996.
2. Bharat Singh. "Fundamentals of Irrigation Engineering", 7th Ed., Nem Chand & Bros., Roorkee, 1983
2. Varshney, R.S., S.C. Gupta and R.L. Gupta, "Theory and Design of Irrigation Structures", Nem Chand & Bros., Roorkee, 1982.
3. Sharma, H.D. and Chawla, A.S., "A Manual on Ground Water and Tube Wells", Report No. 18, CBIP, New Delhi, J 977.

CE 1804-P COLLOQUIUM (0-0-2)

Student has to select a topic of current interest in his branch of Engg. and finally to be approved by his head.

Then he has to prepare his interest in writing with suitable diagrams and references and then to present it in about 15 minutes, before a panel of teacher of his department who will mark them • each teacher will give marks separately and an average of these marking (round off) should be entered in the final mark sheets.

This gives a chance to the student to present the subject matter before the audience (his class fellows and teachers of the department), which will further increase their confidence in facing the audience.

## LIST OF OPEN & PROFESSIONAL ELECTIVES

*Note: The Institutions can Frame Syllabi of Professional Electives & Open electives to be offered by them in the particular Area.*

	Sl.No.	Code	Paper
<b>OPEN ELECTIVE I</b>	01	HS 2751	Operation Research Technique
	02	CE 2751	Reliability Engg.
	03	CE 2752	Statistical Methods in Engg.
	04	HS 2752	Science & Religion
<b>PROFESSIONAL ELECTIVE I</b>	01	CE 2753	Construction Equipments & Project Management
	02	CE 2754	Computer Aided Structural Analysis
	03	CE 2755	Building Design
	04	CE 2756	Bridge Engineering
	05	CE 2757	Quality Control & Management
	06	CE 2758	Earthquake Engineering
	07	CE 2759	Pre stress Concrete Structures
	08	CE 2760	Modern Surveying Techniques
	09	EC 2751	Remote Sensing & its Applications

	Sl.No.	Code	Paper
<b>OPEN ELECTIVE II</b>	01	HS 2851	Optimization Methods
	02	CE 2851	Advanced Engineering systems
	03	HS 2852	Industrial Psychology
	04	HS 2853	Energy Management
<b>PROFESSIONAL ELECTIVE II</b>	01	CE 2852	Geographic Information System & Its Applications
	02	CE 2853	Computational Hydraulics
	03	EC 2851	Instrumentation in Fluid Mechanics
	04	CE 2854	Water Resources Planning & Management
	05	CE 2855	Fundamentals of Environmental Geo-technology
	06	CE 2856	Geotechnical Processes
	07	CE 2857	Rock Mechanics
	08	CE 2858	Environmental Pollution and Management
	09	CE 2859	Industrial Waste Treatment
	10	CE 2860	Air Pollution & Control Measures
<b>PROFESSIONAL ELECTIVE III</b>	01	CE 2861	Rural Water Supply & Sanitation
	02	CE 2862	Environmental Impact Assessment & Auditing
	03	CE 2863	Traffic Engineering
	04	CE 2864	Advanced Highway Engineering
	05	CE 2865	Transport Planning & Management
	06	ME 2851	Advanced Strength of materials
	07	ME 2852	Theory of Plates and Shells
	08	ME 2853	Experimental Stress Analysis
	09	ME 2854	Composite materials