

Syllabi of

Eighth Semester B.Tech Degree Programme in

CIVIL ENGINEERING

CE4004 ECONOMICS AND MANAGEMENT

L	T	P	C
3	0	0	3

Prerequisite: Nil

Total hours: 42

Module 1 (12 hours)

Organisations and their Economic Environment

Definition of Economics and Managerial Economics – Nature and Scope – Definition and Concept of Good, Want, Value, Wealth, Utility – Utility and Demand – Law of Diminishing Marginal Utility – Assumptions and Importance. Demand and Supply – Law of Demand and Law of Supply. Market price and natural price. Standard market forms- Monopoly, Perfect competition. Organisational forms- Proprietorship, partnership, Joint Stock Company – Cooperative organisation.

Module 2 (10hours)

Macroeconomics

Money- nature and functions – Inflation and Deflation – Kinds of Banking – commercial banks – Central banking – Credit instrument - Monetary Policy – International trade – Balance of trade and Balance of Payments – taxation – Direct and Indirect taxes – Impact and Incidence of tax- Concept of National Income – Features with reference to developing countries.

Module 3 (8 hours)

Introduction to Management

Management Theory- Characteristics of management – Systems Approach to management – Concepts of goal, objective, strategies, programmes. Decision making under certainty, uncertainty and risk – Introduction to functional areas of management – Operations management, Human resources management, marketing management.

Module 4 (12hours)

Financial and Inventory Management

Need for Financial Management – Types of financing – Short term and long term Borrowing – Equity financing – Analysis of Financial Statement – balance sheet – Profit and Loss account – Fund flow statement – Ratio Analysis . Investment and Financial decision – Financial control and Job control. Functions and objectives of Inventory management – Decision models – Economic Order Quantity (EOQ) model – sensitivity analysis of EOQ model, Economic production lot size model – inventory model with planned shortages – Periodic order quantity – single period Inventory models – Simulation model for inventory analysis.

References

1. Konni, Donnel C. O. and Weighnrch, H., Management, Eight Edition, McGraw Hill International Book Company, 1997.
2. Philip Kotler, Marketing Management, Prentice-Hall of India, Edition, 1998.
3. Plossl, G. W., Production and inventory control by,Prentice Hall, 2000.
4. Paul A Samuelson and William D Nardhaus , Economics, Mcgraw Hill International Edition, 1991.
5. Barthwal, R. R., Industrial Economics – An Introductory Text Book, New Age International Pvt Ltd, 2000.
6. Aninnya Sen, Microeconomics – Theory and Apoplications , OUP. 7. Sharma J.L., Construction management and accounts, Sathya Prakashan, New Delhi, 1994.
7. Srinath, L. S., An Introduction to Project Management, Tata McGraw Hill publications, 1995

CE4005 CONSTRUCTION MANAGEMENT AND QUANTITY SURVEYING

L	T	P	C
3	1	0	3

Prerequisite: Nil

Total hours: 56

Module 1 (16 hours)

Construction Management – Network techniques – introduction – Bar charts – use of CPM and PERT for planning – time estimates – critical path – updating – crashing – resource smoothing – resource leveling – critical chain method – linear scheduling method

Construction planning: Preparation of job layout – labour schedule – material schedule – equipment schedule

Module 2 (14 hours)

Quantity surveying and budgeting: preparation of detailed estimates for buildings - reinforced concrete structures - sanitary and water supply works – project cost management – learning curves – construction project budgets

Module 3 (13 hours)

Project execution and monitoring – Tendering – contract – contract documents – measurements – types of contracts – introduction to PPP– inspection and quality control – standardization – organizations at national and international level (BIS and ISO) – role of certification project- project evaluation and control – earned value concept

Module 4 (13 hours)

Preparation of specification for common materials of construction and items of work as per IS - analysis of rates and preparation of abstract of estimate.

Introduction to valuation of real properties: Depreciation – Sinking fund – methods of valuation

References

1. Jeffry K Pinto, Project Management Achieving competitive Advantage, Pearson Publication, 2009
2. Peurifoy, R. L., and Clifford J Schexnayder., Construction Planning Equipment and Methods, McGraw Hill, 2006.
3. Dutta, B. N., Estimation and Costing in Civil Engg, UBSPD, 1992.
4. Chakrabarthy, Estimation, Costing, Specification in Civil Engg, , 1982.
5. Shah, N. A., Quantity Surveying and Specification in Civil Engg., 1981.
6. I.S 1200 (1968), Methods of Measurement of Building and Civil Engg. Works
7. Mahajan, S. P., Civil Estimating and Costing, Sathyaprakasham, 1988.
8. Jha, J., and Sinha ,S. K., Construction and Foundation Engineering, Khanna Publications

CE4006 PROFESSIONAL PRACTICE

L	T	P	C
3	0	0	3

Prerequisite: Completed upto and including third level courses and to have undergone seventh semester core courses.

Objective: The Course is primarily meant to provide an overall preparation for Civil engineering practice and is to cover broadly the syllabi of all the core courses in the programme. The course delivery by faculty in different areas preferably with guest lectures from practicing Engineers is envisaged as far as possible. The course delivery to include modern developments in relevant areas beyond those included in the course syllabi. The assessment is to be in continuous mode with additional assignments etc. than those prescribed at the end of each module.

Total hours: 42

Module 1 (10 hours.)

Topics in Survey, Functional Design and Construction

Review of topics with emphasis on Practical aspects covering broad contents of courses in Graphics, Surveying, Functional Design and Building Drawing and other related areas.

Module 2 (11 hours.)

Topics in Water Resources and Environmental Engineering

Review of topics with emphasis on Practical aspects covering broad contents of courses in Water Resources and Environmental Engineering and other related areas.

Module 3 (10 hours.)

Topics in Geotechnical Engineering and Transportation Engineering

Review of topics with emphasis on Practical aspects covering broad contents of courses in Geotechnical Engineering and Transportation Engineering and other related areas.

Module 4 (11 hours.)

Topics in Structural Engineering and Construction Management

Review of topics with emphasis on Practical aspects covering broad contents of courses in Structural Engineering and Construction Management and other related areas.

All the modules will be simultaneously covered (preferably different faculty) with one hour/per week for each module. Assessment may consist of written and/or oral examination In the case of oral examination a minimum of two members of faculty to be involved in the assessment. All interim tests to have equal weightage for all modules. An end semester oral assessment consisting of all topics to be held, preferably with at least one of the examiners from outside course faculty.

References

1. Tyler G. Hicks. "Handbook of Civil Engineering Calculations", Mc Graw Hill, 2007.
2. Wai-Fah Chen, J. Y. Richard Liew, "Civil Engineering Handbook", Second Edition, Taylor and Francis Group, LLC, 2006
3. Charles E. Reynolds and James C Steedman, "Reinforced Concrete Designer's Handbook." Tenth Edition, E and FN Spon, 11, New Fetter Lane, London EC4P 4EE, U.K, 2000

4. Editors Buick Davison and Graham W. Owens. “Steel Designers Manual” 6th Edition, Black well publishing, 9600 Garsington Road, Oxford OX4 2DQ, U.K, 2003.
5. National Building Code, 2000
6. Khanna, P. N., Indian Practical Civil Engineers' Handbook: An Encyclopaedia of Technical Information, 17th Edition, Engineers' Publishers, New Delhi, 1999.

CE** ELECTVE V**

L	T	P	C
3	0	0	3

--** ELECTVE VI (Global)**

L	T	P	C
3	0	0	3

CE4099 PROJECT

L	T	P	C
0	0	10	5

Prerequisite: CE4098 Project

Total hours: 140

The project work started in the seventh semester will continue in this semester. The students will complete the project work in this semester and present it before the assessment committee.

The assessment committee as constituted in the seventh semester will assess the various projects for the relative grading and group average. The guides will award the grades for the individual students depending on the group average. Each group will submit the copies of the completed project report signed by the guide to the department. The head of the department will certify the copies and return them to the students. One copy will be kept in the departmental library.

CE4004 ECONOMICS AND MANAGEMENT

L	T	P	C
3	0	0	3

Prerequisite: Nil

Economics and managerial Economics - Definition and Concept of Good, Want, Value, Wealth, Utility and Demand- Demand and Supply- Standard market forms- Organisational forms- Money- nature and functions- Taxation- Concept of National Income, Management – Systems Approach - Introduction to functional areas of management- Financial management - Inventory management

Total hours: 42

CE4005 CONSTRUCTION MANAGEMENT AND QUANTITY SURVEYING

L	T	P	C
3	1	0	3

Prerequisite: Nil

Construction Management – Network techniques – introduction – Bar charts CPM and PERT for planning – time estimates – critical path - computer applications. Construction planning: Preparation of job layout and schedules. Project Implementation – Tender - contract – measurements – completion certificate – inspection and quality control – standardization – role of certification. Quantity surveying - preparation of detailed estimates for buildings - reinforced concrete structures - sanitary and water supply works. Preparation of specification for common materials of construction and items of work as per IS - analysis of rates and preparation of abstract of estimate. Introduction to valuation of real properties: Depreciation – Sinking fund – methods of valuation

Total hours: 56

CE4006 PROFESSIONAL PRACTICE

L	T	P	C
3	0	0	3

Prerequisite: Completed upto and including third level courses and to have undergone seventh semester core courses.

Objective:

The Course is primarily meant to provide an overall preparation for Civil engineering practice and is to cover broadly the syllabi of all the core courses in the programme. The course delivery by faculty in different areas preferably with guest lectures from practicing Engineers is envisaged as far as possible. The course delivery to include modern developments in relevant areas beyond those included in the course syllabi. The assessment is to be in continuous mode with additional assignments etc. than those prescribed at the end of each module.

Topics: Survey, Functional Design and Construction; Water Resources Engineering environmental Engineering; Geotechnical Engineering , Transportation Engineering; Topics in Structural Engineering and Construction Management.

Total hours: 42

CE4099 PROJECT

L	T	P	C
0	0	10	5

Prerequisite: CE4098 Project

The project work started in the seventh semester will continue in this semester. The students will complete the project work in this semester and present it before the assessment committee.

Total hours: 140