

M.Arch (Sem. III & IV)

SEMESTER : III

301 :- Project Management – III

Contact Hours per week	Assessment	
Lectures - 2	Theory Paper -	100 Marks
Studio - 2	Internal -	50 Marks
Total - 4	External -	100 Marks
	Total -	250 Marks

The intent of the course is to disseminate about the application of Project Management during the “Bid and Award Phase” of the project life cycle. In addition, the course covers the monitoring and control processes.

The process of project management covers topics related to selection of contract types, various international and national contract forms, Pre-qualification of contractors, Preparation of contract documents, Evaluation of contract bids, Alternate dispute resolution, issues related to contract administration, etc. The project controlling processes to be disseminated are Overall change control, scope change control, cost control, performance reporting and risk response control. The project Closing processes to be disseminated in administrative closure and contracts close out. Post construction management would include maintenance management, organization structures and contractual aspects of maintenance management, financial management of maintenance activities.

The course will also disseminate broad coverage on new and emerging project management areas such as business Process re-engineering, constructability etc. professional practice & contract administration like BOT, BOOT, BOLT etc. international contracting & FEEDIC conditions, Good practices and managerial responsibilities.

302 :- Laws and Legal Aspects in Construction Projects

Contact Hours per week	Assessment	
Lecture – 2	Theory Paper	100 Marks
Studio -	Total	100 Marks

Total - 2

The objective of the course is to provide an overview of all laws and regulations related to construction projects in the various stages of the project cycle.

The coverage includes Building regulation and bylaws of local authorities. Laws related to land development. Land acquisition, lease & easement rights, property acts and Guntewari acts. Permits and approval for construction activities ; statutory requirements and clearance related to environment impact, urban form, fire regulation, completion certificate. Laws and legislation related to construction Industry labour laws & consumer protection Act, MRTP act. The building and construction workers (regulation of employment and conditions of service) Act, 1996, workmen's compensation Act. Payment of wages Act, The employees provident fund and Miscellaneous provisions Act 1995 etc. Indemnity & guarantee, Industrial act and labour laws, Environmental laws. National Building code, role of Zilla Parishad & IRDP in rural housing.

Types of disputes in construction contracts and methods of dispute resolution processes. Alternative dispute resolution and dispute review mechanisms. Arbitration and conciliation Act 1996. Managerial approach to dispute minimization, Conduct of Arbitration proceedings, Making of Arbitration award and Termination proceedings, powers of arbitrator, case studies of arbitration award, setting aside of awards and enforcement of awards, appeal and revision and court proceedings, introduction to civil & criminal procedure code with special reference to laws & order at project sites, project police relations.

303 :- Facility Management

Contact Hours per week	Assessment	
Lecture – 2	Internal -	50 Marks
Total – 2	Total Marks -	50 Marks

Course Objective

To develop students capability to manage various building services to increase safe and healthy utilisation of buildings and properties with minimal breakdown time.

Course Content

Planning norms for various Services & Utilities, Township facilities; Schools, Hospitals, Housing, Commercial Complexes etc. Importance of building services, type of services required to keep the facility usable, planning of services, organization structures of services management. Role and administrative functions of Supervisors. Fire fighting - Basic requirement for the work fire fighting system, various components of the fire fighting system, maintenance required of the system, fire lighting in high-rise buildings, commercial / industrial complexes, public buildings, checklist for fire safety, fire fighting. Lifts / elevators, escalators, permissions & procedures legal formalities for Elevators, various types of lifts, working mechanisms of lift and escalators. Indian standard codes for planning & installations of elevator, inspection & maintenance of lifts. Plumbing Services : Basics of Plumbing systems, Requirement of Plumbing works, Agency, Activity Flow chart for Plumbing work, Quality, checking of materials. Water Supply System : Water Supply distribution system in high-rise buildings & other complexes, pumps and pumping mechanism, operation & maintenance of fittings & fixtures of w/s. Do's & Don'ts for water pipe networks. Modern Sewage Treatment Plants.

Landscaping & Horticulture, Building maintenance management. Air - conditioning and Heating: Flowcharts of air conditioning & heating. Centralized systems, monitoring working of the equipments, checklist of Inspection, Performance testing. Water proofing, Damp proofing & Termite proofing. Working Procedure & stages of work of water proofing for W.C., bathrooms, Terrace, Sloping roof, Basements, tanks. Use of chemicals for water proofing treatment. Role of consultants. Damp proof course, Causes and precautions for Dampness.

304 :- Real Estate Management

	Assessment	
Contact Hours per week	Internal -	50 Marks
Lectures - 3	External -	50 Marks
Total - 3	Total -	100 Marks

Intent of the course is to impart detailed knowledge of all aspects related to management of Real Estate projects to train the students as Real Estate Project Managers.

Real Estate Scope : Classification of real estate activities and peculiarities ; Factors affecting real estate market; Role of Government in real estate market; Statutory provisions, laws, rules and regulations application, land use controls in property development, registration and licensing requirements; Functions of Real Estate development like project formulation, feasibility studies, developing, costing and financing, managing including planning, scheduling and monitoring of real estate projects, risk management, facilities management, marketing/advertising, post construction management etc.; Interests in real estate; Documentation in real estate processes; Transfer of titles and title records; Real Estate appraisal and valuation; Role, scope, working characteristics and principal functions of real estate participant and stakeholders; Real estate consultants and their activities; Types of agreements between the consultants and principal; Knowledge base for assessment and forecasting the Real Estate market; Role and responsibilities of property managers; Real Estate investment, sources and related issues; Code of ethics for Real Estate participants; Environmental issues related to Real Estate transactions: Closing the Real Estate transactions. Good practices and managerial responsibilities.

305 :- Integrated Energy Conservation in Construction :-

TEACHING SCHEME	EXAMINATION SCHEME	
Lecture – 2	Theory Paper –	100 Marks
Studio – 2	Internal Sessional -	25 Marks
	External Viva	-
Total – 4	Total Marks -	125 Marks

Course Objective

To develop awareness of environmental issues in relation to construction, and acquire abilities to handle them.

Aim :- To develop awareness of environmental & energy issues in relation to construction and acquire abilities to handle them.

Course content out line :-

- Energy scenario, Energy & its various forms.
- Energy management & audit.
- Energy efficiency in thermal & electrical utilities
- Conventional energy systems.

- Renewable energy sources.
- General aspect, waste heat recovery, energy storage, energy conservation in Buildings.
- Building & Energy
- Selection of energy efficient materials.
- Energy, conservation & energy management (Thermal, Mechanical, Cogen, heat, Electrical, Bio energies)
- Energy codes

Studio Programme :

Assignments related to the above topics.

306 :- Quality and Site Safety & Management :-

Contract Hours per week	Examination Scheme	
Lecture – 3	Theory Paper	-
	Internal sessional	50 Marks
	External sessional	50 Marks
Total - 3	Total	100 Marks

The intent of the course is to give an insight into the concepts of Quality Management System and further develop applications relevant to planning, design & construction of buildings. Module on construction health, safety & environment management principles, systems & practices of safety management occupational health, heigene in construction.

Quality : Traditional approaches. Its importance in technology driven, competitive market economy. New approaches and recent developments,

Quality Control, Quality Assurance, Quality Management and Total Quality Management (TQM) : Meaning, scope and relationship of the concept. The need of a continuum,

Quality Standards in construction : Standards for various building materials and other inputs for construction process, methods and techniques for construction outputs, products and services, Indian Standards, British, American, German & Japanese standards; study comparisons and equivalence,

Managing Quality in Construction : Building quality into designs of structures, Inspection of incoming materials and machinery .In –process quality inspection and tests, Designing of quality manuals, Checklists and inspection reports, installing the quality assurance system, monitoring and control, Quality Assurance Department and quality control responsibilities of the line organization, Quality in foundations and piling work, structural work, concreting, electrical system, building facilities , waste recycling and maintenance,

Developing quality culture in the organization : Training of people, Manualisation of operations, Bench-marking quality , synergy, Quality circles, ISO 9000 , ISO 14000 & QS 9000 standards and certification procedures

Concept : Psychological, Physiological and technological factors in safety in construction, Hazards and causes of accidents, safety measures. Safety legislation and standards for construction industry, Safety in construction of Buildings, civil works and infrastructure development projects, Management of Accidents, employment injuries and occupational hazards / diseases, Safety organization, site management. Role of safety department, safety officer, safety committee. Safety training, incentives and monitoring, Writing safety manuals, preparing safety checklists and inspection reports.

307 :- Dissertation Stage – I

Contact Hours per week	Assessment	
Studio – 2	Internal -	25 Marks
Total – 2	Total Marks -	25 Marks

The objective of the thesis is to provide an opportunity to the students to prepare independent and original study of special project of his own choice.

The subject for special study may be conceptual or practical but pertaining to Building Design and Construction Management. This should however, offer scope to adopt a fresh approach in

formulating a concept of developing a methodology effective and useful. Each student will prepare the Thesis under the guidance of a principal advisor with regular reviews by the faculty of the department. The Thesis will be presented in the accepted form of a thesis report duly supported by copious References, sketches, graphs, statistical data, details of survey if any, detailed account of experimental analytical procedures adopted. Each student is required to defend his Thesis at a Viva Voce Examination by jury.

Synopsis (Copies – 12) should be submitted to university authority for scrutiny and registration. Synopsis should be completed in following respects –

- 1) Titles of the synopsis.
- 2) Abstract of research / study.
- 3) Objectives and scope.
- 4) Name, signature and consent of guide.
- 5) Synopsis should be submitted from 1st January to 15th February and 1st June to 15th July every year as per circular SU/PG/BVTR/ME/M.TECH/8154 dtd. 16/11/2007.
- 6) Literature study and collection of basic information, should be completed in Dissertation Stage – I.

308 :- Seminar – II

Contact hours per week

Studio – 2

Total – 2

EXAMINATION SCHEME

Internal - 50 Marks

Total Marks - 50 Marks

The state of art prepared on the chosen topic in the earlier seminar work is further studied and analyzed on the specific aspects of the topic and a comprehensive seminar report is prepared with the identification of areas for further research and development. Alternatively the students can also identify new topics for the seminar work which can be further developed into a thesis work in the final seminar.

SEMESTER : IV

401 :- Dissertation Stage – II

Eligibility :- Dissertation Stage – I should be completed.

	Assessment	
Contact Hours per week	Internal -	100 Marks
Studio – 4	External -	150 Marks
Total – 4	Total Marks -	250 Marks

(A continuation of Dissertation Stage – I)

- 1) Dissertation Stage – I should be completed (Passed)
- 2) Only after passing of all three Semesters (Sem. - I, II & III) External Exam. can be conducted by a panel of External Examiner one or two (outside Shivaji University) and Guide, after completion of two (2) academic years from date of registration for course.

Submission of Dissertation Report :-

The continuous assessment of the work carried out by the student shall be done and the Sessional marks shall be based on the performance of the student.

The dissertation shall consist of literature, survey on the topic chosen in the relevant field, theoretical and or experimental work based on the literature, discussion and conclusion.

Format of Dissertation Report :-

The dissertation work report shall be typed with double space on A4 size bond paper. The total No. of pages shall not be more than 200 and not less than 60. figures, graphs, annexure etc. by added as per requirement.

The report should be written in the following format :

- 1) Title Sheet
- 2) Certificate
- 3) Acknowledgment
- 4) List of figures, Photographs / Graphs / Tables

- 5) Abbreviations
- 6) Abstract / Final Synopsis
- 7) Contents
- 8) Text with usual scheme of chapters
- 9) Discussion of the results and conclusion
- 10) Bibliography (The source of illustrative matter be acknowledged clearly at appropriate place.)

Dissertation Report must be submitted after completion of two (2) academic years from date of Registration for course, as follows :-

- 1) Dissertation Copy – 1 (One)
- 2) Synopsis (approved) – 10 Copies
- 3) Synopsis Registration letter
- 4) Internal term work marks (sealed envelope)
- 5) Xerox copy of all mark list (attested)
- 6) Covering Letter of Head of Institute

Fee for dissertation (Report) with Convocation fee, Examiner and Guide as per University Rules and Regulations. External examination will be conducted.

402 / 403 :- Electives I / II (Two Electives)

	Assessment	
Contact Hours per week	Internal -	25 Marks
Lecture – 2	External -	50 Marks
Total – 2	Total Marks -	75 Marks

Contact Hours per Semester (24 hrs.)

(12 weeks duration)

The elective subjects are taught during the fourth semester for twelve weeks duration. Students shall take any one of the elective courses.

- 1) Management of Infrastructure Projects
- 2) Disaster Management

- 3) Building Automation
- 4) Marketing in construction
- 5) Site management
- 6) Energy management
- 7) Services co-ordination
- 8) Any other specialized topics in Building Design and Construction management
- 9) Design Management