

University of Mumbai



Revised Syllabus for
Master of Architecture Programme:
M. Arch. (Project Management)
Semester – (I to IV)
(Choice Based Credit System)

(With effect from the academic year 2025-26)

SEMESTER-II

SEMESTER II Exam Conducted by the University						
Course Code	Course Name	Teaching Scheme (HRS)				CREDITS
		L	T	S	TOTAL	
PM-C 201	Project Finance Management	3	--	--	3	3
PM-C 202	Law 2: Contract Management	3	--	--	3	3
PM-C 203	Facility and Equipment Management	3	--	--	3	3
PM-C 204	Research Methods - 1	2	--	--	2	2
PM-E 205	Choice Based Elective - 3	2	--	--	2	2
PM-S 206	Advanced Construction Materials and Methods	1	--	8	9	5
PM-S 207	Computer Applications in Construction Management-2	--	--	6	6	3
Total/Semester					28	21

SEMESTER II Exam Conducted by the University					
Course Code	Course Name	Examination Scheme			
		Theory Paper	Internal	External Viva	Total Marks
PM-C 201	Project Finance Management	50	50	--	100
PM-C 202	Law 2: Contract Management	50	50	--	100
PM-C 203	Facility and Equipment Management	50	50	--	100
PM-C 204	Research Methods - 1	--	100	--	100
PM-E 205	Choice Based Elective - 3	--	100	--	100
PM-S 206	Advanced Construction Materials and Methods	--	150	150	300
PM-S 207	Computer Applications in Construction Management-2	--	200	--	200
TOTAL					1000

PM-C 201 Project Accounts & Economics

Course Title	Project Accounts & Economics					
			Marks			
Course Code	Hrs/week	Credits	Theory	Internal	External	Total
PM-C 201	3	3	50	50	--	100

Objectives:

- To gain a robust understanding of how financial and economic principles applicable in construction projects.
- To understand theories and techniques that are used to manage costs, optimize resources, and ensure financial success.

Course Contents:

- Introduction to Management Accounting, Concept of Control, Status Relationship Between Management Accounting and Top-Level Managements.
- Accounting Mechanism: Accounting Mechanism & Accounting Practices in India. Preparing of Financial Statements, Accounting Policies with Special References to Revenue Recognition Matching Expenses and Revenue & Depreciation Accounting
- Financial Statements and Their Analysis: Understanding of Financial Statements and Their Analysis, Like Balance Sheet, Profit & Loss Account, Ratio Analysis, Fund Flow Analysis, Statement of Changes In Financial Position.
- Cost Estimating and Budgeting: Types of costs, Methods of cost estimating, Preparing and managing a project budget, Cost control techniques
- Taxation and Legal Aspects in Construction Economics: Statutory Requirements for taxation, Accounting and Auditing.
- Accounting Types: Inflation Accounting, Creative Accounting, Social Accounting and Social Audit
- Corporate Reporting Practices in India.

Sessional Work:

Assignments, Case Studies, Report, Group Projects and Presentations.

PM-C 202 Law 2: Contract Management

Course Title	Law 2: Contract Management					
			Marks			
Course Code	Hrs/week	Credits	Theory	Internal	External	Total
PM-C 202	3	3	50	50	--	100

Objectives:

- To gain a thorough understanding of the principles, processes, and tools required for managing contracts effectively in construction projects,
- To gain knowledge about legal compliances related to construction contracts leading to project success.
- To understand concepts of contract administration and office management
- To gain knowledge of dispute resolution processes related to construction contracts.

Course Contents:

- Introduction to Contract Management: Overview of contract management in construction projects, Importance of effective contract management for project success, Key stages in the contract lifecycle: formation, execution, and closure
- Construction Contracts: Types of Construction Contracts, Contract selection criteria based on project scope, budget, and risk, Contract Formation – components of a contract, Negotiation strategies.
- Contract Management: bid cycle, contract conditions interpretation by parties to contract, obligation and responsibilities of the parties, protection and indemnification, bonds and insurance
- Contract Administration: inspection of work, change of work, rejected work and deficiencies, deviations extra claim and their management, project closure
- Dispute Resolution and Claims Management: Types of disputes in construction contracts: delay, quality, payment, Procedures for resolving disputes: negotiation, mediation, arbitration, litigation, Claims management process: documentation, notification, and settlement
- Office Management: proper record keeping in contract administrating, establishment of standard procedure, coordination between various agencies involve, providing data for contract clauses.

Sessional Work:

Assignments, Case Studies, Report, Group Projects and Presentations.

PM-C 203 Facility, Equipment & Personnel Management

Course Title	Facility, Equipment & Personnel Management					
			Marks			
Course Code	Hrs/week	Credits	Theory	Internal	External	Total
PM-C 203	3	3	50	50	--	100

Objectives:

- To gain a comprehensive understanding of the key principles, practices, and tools required for effective management of facilities, equipment and personnel in construction settings.
- To appreciate costing and phases of lifecycle of facility and equipment, their operation and maintenance
- To understand the values of human resource in construction industry and issues faced by construction labour.

Course Contents:

- Facility Management: Operation and Maintenance of facility, Facility life cycle management, Phases of facility lifecycle- planning, design, construction, operation, and decommissioning, Managing energy and utility systems.
- Equipment Management: Mechanization on construction projects, Sizing, and matching of equipment, Selection and Planning for equipment, Estimating output of an equipment, Owning, hiring, leasing of construction equipment, Equipment maintenance, Cost of use of equipment, Life of equipment, Physical, Economic, & usefulness, Depreciation, Replacement of equipment
- Human Resources Management: importance of human resources, Sources of personnel staffing & recruitments, job analysis, job specification, recruitments tests, selection & placement, need for training, training objectives, strategies and methods training assessment, performance appraisal, compensation, basic pay, variable pay, merit rating, job evaluation
- Labour Issues: definition of labour and labour welfare, contract labour & temporary labour, various theories, historical development, agencies for labour welfare.
- Industrial Relations: strikes, lockouts, lay-offs, grievance functions, meaning, grievance redressal procedures, collective bargaining, trade unions, overview of statutory measures for labour welfare.

Sessional Work:

Assignments, Case Studies, Report, Group Projects and Presentations.

PM-E 204 Research Methods - 1

Course Title	Research Methods - 1					
			Marks			
Course Code	Hrs/week	Credits	Theory	Internal	External	Total
PM-C 204	2	2	--	100	--	100

Objectives:

Introduction to the basics of research methods shall help students to set the systematic procedures for exploring, investigating, understanding, and writing of issues in Landscape Design and related areas in an objective manner.

Course Contents:

- Purpose of research
- Data, Information and Knowledge
- Method and Methodology
- Literature Review
- Qualitative and Quantitative Research Methods
- Forms of Academic Writing
- Ethics of research and academic writing
- Citations and referencing styles

The course explores the fundamental principles, methods and process of research. The course enables the students to examine the need for research and methods to carry out the research. At the end students shall be able to understand, how to frame the research questions and execute the data and analyse them. They will also learn about ethics of conducting research and that of academic writing – such as confidentiality, consent, privacy, plagiarism, attribution, citations and referencing.

Sessional Work for internal evaluation:

The individual colleges will detail the exercises based on, but not restricted to the following pointers:

- Applications of qualitative and quantitative survey methods
 - Research Essay/Paper
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PM-E 205 Choice Based Elective - 3

Course Title	Choice Based Elective - 3					
			Marks			
Course Code	Hrs/week	Credits	Theory	Internal	External	Total
PM-E 205	2	2	--	100	--	100

Course Contents:

Individual colleges will offer electives from which the student would choose as per their own interest. The colleges should design and develop the topics, objectives and contents of choice based elective courses based on their vision and strength. Sessional work for internal evaluation should be carried out in accordance with the course contents. Suggested exercises could be in the form of case study presentations, project work, essays, debates, seminar, quizzes or class tests.

PM-S 206 Advanced Construction Materials and Methods

Course Title		Advanced Construction Materials and Methods				
			Marks			
Course Code	Hrs/week	Credits	Theory	Internal	External	Total
PM-S 206	8	5	--	150	150	300

Objectives:

- To learn about advancements in construction materials and their application in the industry.
- To gain knowledge of recent advances in Material Science
- To gain knowledge of cutting-edge construction methods, techniques and practices
- To gain an understanding about building systems in specialised building types and facilities

Course Contents:

- Conceptual Understanding of various large span structures, like Geodesic domes, hyperbolic paraboloids, and free form shapes etc. used for Airports, Stadia, Industrial buildings, public spaces etc. Construction details understanding, Service systems, Structural Systems, Sequence of erection and facilitating maintenance of such structures. Identify specialized equipment required for erection of such structures. Case studies of such structures and reporting.
- Study of advance building materials like Special alloys of steel & other metals, glass, polymer, fabric, Various types of finishes & treatments, Construction chemicals, specially manufactured items from manufacturers catalogues, etc. and specialized equipment required for erection used in erection of structures mentioned in Block 1 above. Market survey and collection of information about the materials.
- Conceptual Understanding of High-rise buildings in normal and adverse conditions considering topography of the site, for erection of such structures. Case study/ies of such structures and reporting. Water-logging, marine structures, et. Construction details understanding, Service systems, Structural Systems, Sequence of erection and facilitating maintenance of such structures. Identify specialized equipment required
- Conceptual Understanding of Pre-fabrication in building construction. Concept of Modular co-ordination. Construction details understanding, Service systems, Structural Systems, Sequence of erection and facilitating maintenance of such structures. Essential process of manufacturing, handling of pre-fabricated components. Identify specialized equipment required for erection of such structures. Case study/ies of such structures and reporting.

Sessional Work:

Studio Assignments, Case Studies, Report, Group Projects and Presentations.

PM-S 207 Computer Applications in Construction Management-2

Course Title	Computer Applications in Construction Management-2					
			Marks			
Course Code	Hrs/week	Credits	Theory	Internal	External	Total
PM-S 207	6	3	--	200	--	200

Course Objectives:

This course is the part-2 of training the students in Computer Applications.

- Training in a range of project management software tools to enhance their digital skills in project planning, scheduling, and monitoring.
- Enable students to generate comprehensive project reports and dashboards using software tools, facilitating better communication and stakeholder engagement.
- Integration of digital skills into overall project management practices, emphasizing the importance of technology in modern project environments

Course Contents:

Advanced Project Management Softwares and digital tools and training in using them.

Advanced Scheduling Techniques and using software for scheduling, Resource Allocation and Management plans, Project Monitoring Project Progress, Report Generation and Documentation.

Some important and essential software used in Project Management

- Project Management Information Systems (PMIS) like: Procore, PlanGrid, Oracle Primavera
- Building Information Modeling (BIM) software: Autodesk Revit, Graphisoft ArchiCAD
- Scheduling and planning tools: Microsoft Project, Oracle Primavera P6, Asta Powerproject
- Collaboration and communication platforms: Microsoft Teams, Slack
- Cost estimation and management software: Sage Estimating, PlanGrid
- Document management and control systems: SharePoint, Procore, Aconex
- Risk management and quality control tools: @RISK, Riskconnect
- Data analytics and reporting software: Tableau, Power BI, Excel

Sessional Work:

Studio exercises using Project Management Softwares.
