AC – 27/01/2025
Item No. – 6.7(R)

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 – III

	SEMESTER III Exam Conducted by Individual College on behalf of the University					
Course Code	**Course Name**	**Teaching Scheme (HRS)**				
		L	T	S	TOTAL	CREDITS
PM-C 301	Project Appraisal and Finance Management	3	--	--	3	3
PM-C 302	Quality & Safety Management	3	--	--	3	3
PM-C 303	Managerial Decision Making	3	--	--	3	3
PM-C 304	Research Methods -2	2	--	--	2	2
PM-E 305	Choice Based Elective - 4	2	--	--	2	2
PM-S 306	Construction Management Studio	1	--	8	9	5
PM-S 307	Advanced Contracts, Tendering and Public Procurement	--	--	6	6	3
		Total/Semester			**29**	**21**

SEMESTER III Exam Conducted by Individual College on behalf of the University					
Course Code	**Course Name**	**Examination Scheme**			
		Theory Paper	Internal	External Viva	Total Marks
PM-C 301	Project Appraisal and Finance Management	50	50	--	100
PM-C 302	Quality & Safety Management	50	50	--	100
PM-C 303	Managerial Decision Making	50	50	--	100
PM-C 304	Research Methods -2	--	100	--	100
PM-E 305	Choice Based Elective - 4	--	100	--	100
PM-S 306	Construction Management Studio	--	150	150	300
PM-S 307	Advanced Contracts, Tendering and Public Procurement	--	200	--	200
				TOTAL	**1000**

PM-C 301 Project Appraisal & Finance Management

Course Title	Project Finance Management					
			Marks			
Course Code	Hrs/week	Credits	Theory	Internal	External	Total
PM-C 301	3	3	50	50	--	100

Objectives:

- To offers students a solid understanding of the financial principles, tools, and techniques necessary for the successful appraisal and financial management of construction projects.
- To emphasise the importance of sound financial planning, risk management, and strategic decision-making.
- To introduce the concepts of working capital and its management
- To learn about the workings of financial institutions in India

Course Contents:

- Project Formulation: Investment opportunities generation and screening of project ideas, project identification, project rating, preliminary analysis, market, technical, financial, economic and ecological pre-feasibility report, project estimates and technoeconomic feasibility report, detailed project report, different project clearances.
- Project Estimation: importance of estimation, method of cost estimating, parameter cost estimating, cost capacity factor, detailed cost estimation, provision of escalation, inflation provision and operation of contingency Provisions.
- Project Costing: Project cash flows, time value of money, cost of capital.
- Project appraisal: NPV, BCC, IRR, ARR, urgency, payback period, assessment of various methods Indian practice of investment appraisal as followed by institutions for private projects and for government projects, international practice of appraisal analysis of risk, different method, selection of project and risk analysis in practice.
- Working Capital Management: policy for working capital, estimating working capital needs, inventory management, accounts receivable, credit and cash management, managing payments to supplies and outstanding
- Working Capital Needs: sources, procedures, practices in construction business capital investment & budgeting, capital investment decisions, techniques of capital budgeting, types of budgets, procedure for master budget, key factor, budget manual, new approach to budgeting, cash flow forecasts.
- Long term financing: working of financial institutes in India and abroad, self-financing stock exchanges types of securities, borrowings and debentures relevant laws, laws concerning income tax, sales tax, professional tax turnover tax, etc.

Sessional Work:
Assignments, Case Studies, Report, Group Projects and Presentations.

PM-C 302 Quality & Safety Management

Course Title	Quality & Safety Management					
			Marks			
Course Code	Hrs/week	Credits	Theory	Internal	External	Total
PM-C 302	3	3	50	50	--	100

Objectives:

- To provide a comprehensive understanding of the essential principles, tools, and practices in quality management specific to construction projects.
- To understand the value of ensuring consistent high standards, compliance, and customer satisfaction throughout the project lifecycle.

Course Contents:

- Quality Management in Construction: Introduction and key concepts - Quality Assurance (QA), Quality Control (QC), and Continuous Improvement, The relationship between quality, cost, and time in project success
- Quality Management Systems (QMS): Overview of Quality Management Systems, Principles of QMS: customer focus, leadership, engagement of people, process approach, The role of documentation and standard operating procedures (SOPs) in quality management
- Quality Planning and Assurance: Defining quality objectives and standards, Developing a quality assurance plan: scope, schedule, and responsibilities, Establishing quality metrics and performance indicators
- Quality Control in Construction: compliance with project specifications, Inspection, testing, and verification processes, Tools and techniques for quality control: checklists, audits, and sampling, Process auditing and monitoring: internal and external audits
- Safety Management in Construction: Legal and regulatory requirements, The role of safety management in reducing accidents, hazard identification and mitigation, Safety Planning and Procedures
- Safety Management Systems (SMS): Overview of Safety Management Systems: principles and components, Roles and responsibilities in safety management- employer, contractor, workers, Safety policies and procedures in the construction environment
- Safety Planning and Procedures: Creating a site-specific safety plan, Emergency procedures and response plans- fire, medical emergencies, evacuation protocols, Personal Protective Equipment (PPE) requirements and management
- Safety audits, inspections, safety and quality culture
- Case Studies and Best practices in implementing quality and safety management systems

Sessional Work:
Assignments, Case Studies, Report, Group Projects and Presentations.

PM-C 303 Managerial Decision Making

Course Title	Managerial Decision Making					
			Marks			
Course Code	Hrs/week	Credits	Theory	Internal	External	Total
PM-C 303	3	3	50	50	--	100

Objectives:

- To provide students with a comprehensive understanding of the theories, models, and tools used in decision making within the context of construction management.
- To emphasise both analytical and interpersonal skills required for making effective decisions at various stages of a construction project.

Course Contents:

- Management Decision Making: The role of decision making in construction management, Types of decisions: strategic, tactical, and operational, Decision Making Models and Approaches, Tools for Decision Making.
- Problem Identification and Analysis: Techniques for identifying problems and opportunities in construction projects, Root cause analysis and tools like the 5 Whys and Fishbone diagrams,
- Risk Assessment and Decision Making: Types of Risks: financial, technical, safety, and operational risks, Tools for risk assessment: Risk Matrix, Monte Carlo Simulation, sensitivity analysis,
- Group Decision Making and Team Dynamics
- The role of teams in construction management decision making: Decision-making techniques: brainstorming, consensus, Delphi method, Managing group dynamics: conflict resolution and leadership, Leveraging diverse perspectives for better decision outcomes
- Decision Making in Resource Allocation and Scheduling: Resource leveling and smoothing techniques, Making decisions on material procurement, labour allocation, and equipment usage
- Ethical Decision Making in Construction: Understanding ethical issues in construction management, Balancing profit motives with ethical responsibilities, Corporate social responsibility and sustainability in decision making
- The role of technology in modern construction decision making (e.g., BIM, AI, project management software), Using data analytics to inform decisions: trends, forecasts, and predictive models, Big data and its application in improving construction decision making

Sessional Work:
Assignments, Case Studies, Report, Group Projects and Presentations.

PM-C 304 Research Methods - 2

Course Title	Research Methods - 2					
			Marks			
Course Code	Hrs/week	Credits	Theory	Internal	External	Total
PM-C 304	2	2	--	100	--	100

Objectives:
The course shall enable the students to acquire their own research interest, to frame their thesis topics, and formulate research proposals for minor and major research. It will also enable them to conduct minor projects, write reports and present them.

Course Contents

- Advance Research Methods
- Big Data Sourcing
- Formulating Research Proposal and Research Design
- Conducting and presenting a minor research project
- Writing Project Report

The course explores the advance principles, methods and process of research. It also explores the recent technique of Big Data sourcing and its application in framing the research questions.

Sessional Work for internal evaluation:

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

- Conducting a minor research project and writing project report
- Seminar
- Research Proposal for Thesis

PM-E 305 Choice Based Elective - 4

Course Title	Choice Based Elective - 4					
			Marks			
Course Code	Hrs/week	Credits	Theory	Internal	External	Total
PM-E 305	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 306 Construction Management Studio

Course Title	Construction Management Studio					
			Marks			
Course Code	Hrs/week	Credits	Theory	Internal	External	Total
PM-S 306	8	5	--	300	--	300

Objectives:

To provide an opportunity for students to apply theoretical knowledge in a practical, real-world context, demonstrating their proficiency in the key elements of construction project management.

Course Contents:

The studio exercise can simulate a real-world construction project, allowing students to demonstrate their understanding and application of key elements of construction project management. This could be done as group work if the individual college desires. Students can be asked to choose a construction project scenario produce necessary work to manage a hypothetical construction project from initiation through completion, addressing issues such as planning, scheduling, budgeting, quality, safety, and risk management, using industry-standard construction management practices, tools, and techniques.

Sessional Work:

The exercise will involve the following:

-Project description, scope statement, and WBS

-Gantt chart, project schedule, and resource allocation plan

-Project budget and cost estimation report

-Risk management and safety plans

-Quality assurance plan and inspection reports

-Regular project status updates and final project reports

-Tools: Students will use construction management software and manual methods (spreadsheets, diagrams) to model their plans and track project performance.

PM-S 307 Advanced Contracts, Tendering and Public Procurement

Course Title	Advanced Contracts, Tendering and Public Procurement					
			Marks			
Course Code	Hrs/week	Credits	Theory	Internal	External	Total
PM-S 307	6	3	--	200	--	200

Objectives:

To provide an opportunity for students to apply theoretical knowledge in a practical, real-world context, demonstrating their proficiency in the key elements of contract management and tendering process.

Course Contents:

This studio exercise will supplementary to PM-S 306, and the same studio exercise will be taken up for implementation of contract management and tendering.

Sessional Work:

Preparing a tender package for the construction project, including scope of work, technical specifications, and terms and conditions. Students will prepare the major components of a construction contract, including the scope of work, project schedule, payment terms, and warranties. key clauses like penalties, liquidated damages, dispute resolution, and force majeure.
