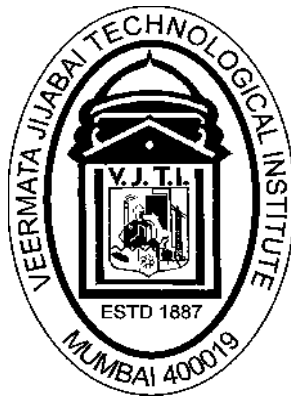


VEERMATA JIJABAI TECHNOLOGICAL INSTITUTE
(VJTI)
MATUNGA, MUMBAI 400 019

(Autonomous Institute affiliated to University of Mumbai)



Curriculum
(Scheme of Instruction & Evaluation and Course contents)

For
Multi-Disciplinary Minor
in
Contract Law, Arbitration, And Valuation

Implemented for the batch admitted in Academic Year 2023-24



V J T I Veermata Jijabai Technological Institute
(Central Technological Institute, Maharashtra State, INDIA)
H. R. Mahajani Marg, Matunga, Mumbai 400019
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Curriculum

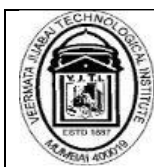
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Credit Framework for
Multi-Disciplinary Minor
in

Contract Law, Arbitration, And Valuation

Sr.	Semester	Course Code	Course Name	L	T	P	Hr	Cr	Examination Weightage in %		
									TA	MST	ESE
1	III	R5CE2202T	Legal Framework for Construction	2	0	0	2	2	20	30	50
2	IV	R5CE2205T	Contracts, Claims, and Dispute Management	2	0	0	2	2	20	30	50
3	V	R5CE3202T	Project Accounting and Cost Management	3	0	0	3	3	20	30	50
4	VI	R5CE3205T	Construction Safety, Quality, and Risk Management	3	0	0	3	3	20	30	50
5	VII	R5CE4202T	Appraisal Implementation for Infrastructure Projects	3	1	0	4	4	20	30	50
Total								14			

Abbreviations: **L** Lecture, **T** Tutorial, **P** Practical, **TA** Teacher Assessment / Term work Assessment, **MST** Mid Semester Test, **ESE** End Semester Written Examination,

Programme Name	Bachelor of Technology in Civil Engineering	Semester – III
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Semester – III		Multidisciplinary Minor (Contract Law, Arbitration, and Valuation)						
SN	Course Code	Course Title	L-T-P (Hours/Week)	Credit	TA	MST	ES E	ESE hours
1.	R5CE2202T	Legal Framework for Construction	2-0-0 = 2	2	20	30	50	3
Course Outcome: After completion of this course, students will be able to, 1. Explain needs of various laws and legislation related to Construction Industry. 2. Describe application of various Contracts and their form. 3. Evaluate needs & Methods of arbitration and dispute resolution mechanism								

Module	Course Content:
1	Introduction to Construction Law: Overview of construction law and its importance, Key legal concepts and terminologies
2	Legal Frameworks and Regulatory Environment: Overview of relevant laws and regulations (e.g., Planning and Construction Law of 1965 in Israel), National and international standards and codes.
3	Construction Contracts: Types of construction contracts, Key clauses and contract negotiation, Contract management and administration
4	Liability and Risk Management: Legal responsibilities and liabilities in construction, Risk assessment and mitigation strategies, Insurance and bonding
5	Construction Dispute Resolution: Common disputes in construction projects, Mediation, arbitration, and litigation processes, Case studies on dispute resolution
6	Regulatory Compliance and Ethics: Compliance with environmental, safety, and building codes, compliance with labour laws, Ethical considerations in construction practice, Professional responsibility and conduct.
7	Emerging Issues in Construction Law:

	Impact of technology on construction law, Legal challenges in sustainable construction, Recent legal developments and case studies, Learning Outcomes
	Recommended Reading: 1) Jha K.N., Construction Project Management- Theory and practice, Pearson India Education Services Pvt. Ltd., 2nd Edition, 2015. (ISBN 9789332542013) 2) P C Markanda., Building and Engineering Contracts: Law and Practice, 6th Edition, 2023 (ISBN: 9788119403042) 3) G. T. Gajria and Kishore Gajria., Law Relating to Building and Engineering Contracts in India, Lexis Nexis, 4th Edition, 2000, (ISBN: 9788187162162) 4) Will Hughes, Ronan Champion and John Murdoch, Construction Contracts Law and management, Fifth Edition 2015, (ISBN 9780367240325)

Programme Name	Bachelor of Technology in Civil Engineering	Semester – IV
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Semester – IV		Multidisciplinary Minor (Contract Law, Arbitration, and Valuation)						
SN	Course Code	Course Title	L-T-P (Hours/Week)	Credit	TA	MST	ESE	ESE hours
2.	R5CE2205T	Contracts, Claims, and Dispute Management	2-0-0 = 2	2	20	30	50	3
Course Outcome: After completion of this course, students will be able to, 1. Demonstrate the ability to manage contract lifecycles, from initiation to closure, by effectively drafting, negotiating, and administering various contract types. 2. Develop the skills to identify, document, and analyze different types of claims and insurance issues, using critical thinking to prepare effective claim resolutions. 3. Apply various dispute avoidance and resolution techniques, including alternative dispute resolution methods and litigation strategies, to manage conflicts effectively. 4. Assess the legal frameworks, regulations, and ethical considerations that impact contract and claims management.								

Module	Course Content:
1	Introduction to Contract Management Definition and importance of contract management, Types of contracts and key elements, Contract lifecycle: initiation, execution, and closure
2	Contract Formation and Negotiation Key principles of contract law, Drafting and reviewing contracts, Negotiation techniques and strategies
3	Contract Administration Effective contract management practices, Roles and responsibilities in contract administration, Monitoring performance and compliance
4	Claims and Insurance Management Types of claims and insurances (e.g., delay, disruption, acceleration), Identifying and documenting claims, Claim analysis and preparation
5	Construction Dispute Resolution:

	Common disputes in construction projects, Mediation, arbitration, and litigation processes, Case studies on dispute resolution
6	Dispute Avoidance and Resolution Techniques for preventing disputes, Alternative Dispute Resolution (ADR) methods: mediation, arbitration, Litigation process and strategies
7	FIDIC Contracts and Claims Overview of FIDIC contract types, FIDIC claims procedures and management, Case studies on FIDIC disputes
8	Legal and Ethical Considerations Legal frameworks and regulations impacting contracts and claims, Ethical issues in contract and dispute management, Professional responsibility and conduct
9	Case Studies and Practical Applications Real-world case studies and examples, Practical exercises and role-plays, Group discussions and presentations
	Recommended Reading: 1. Jha K.N., Construction Project Management- Theory and practice, Pearson India Education Services Pvt. Ltd., 2nd Edition, 2015. (ISBN 9789332542013) 2. P C Markanda., Building and Engineering Contracts: Law and Practice, 6th Edition, 2023 (ISBN: 9788119403042) 3. Pauline Collins, Dalma Demeter, Susan Douglas, Dispute Management, Cambridge University Press, 2021, (ISBN: 1108881793)

Programme Name	Bachelor of Technology in Civil Engineering	Semester – V
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Semester - V		Multidisciplinary Minor	Contract Law, Arbitration, and Valuation					
SN	Course Code	Course Title	L-T-P (Hours/Week)	Credit	TA	MST	ESE	ESE hours
3	R5CE3202T	Project Accounting and Cost Management	3-0-0=3	3	20	30	50	3
Course Outcome: After completion of course students will be able to 1. Understand fundamental concepts and principles of project accounting 2. Prepare comprehensive project budgets aligned with organizational goals. 3. Analyze project financial data to aid in decision-making.								

Module	Course Contents
1	Introduction to Project Accounting and Cost Management Definition and importance, The Project Accountant, Project Pricing Methodologies: Cost Plus Pricing, Fixed Fee Pricing, Contractual Modifiers.
2	Project Billing and Revenue Progress Billings, Project Revenue Recognition, Percentage of Completion Method, Completed Contract Method, Contract Modifications, Measurement of Progress Completion
3	Construction financing and control Cost associated with constructed facilities, Techniques for cost estimation, effect of scale on construction cost, Measurement of Progress Completion, cost control in construction.
4	Project Cost Management Progress Monitoring, Cost Variance Reporting, Change Order Management, Allowance Management, Contingency Management, The Sunk Cost Consideration.
5	Decision Making Tools Marginal Costing, Techniques of Marginal Costing, Application of Marginal Costing in Decision Making, Differential Cost Analysis, Transfer Pricing, Methods of Transfer Pricing.
6	Budgeting and Budgetary Control Budgetary Control and Preparation of Functional and Master Budgeting, Fixed, Variable, Semi-variable Budgets, Financial statements for projects, Zero Based Budgeting (ZBB).
7	Tools for Financial Analysis and Planning Financial Ratio Analysis, Fund Flow Analysis, Cash Flow Analysis
8	Project Measurements Learning Curve, Cost Variance, Net Present Value, Breakeven Analysis, Return on Assets.
	Recommended Reading

	1. Prasanna Chandra, Projects: Planning, Analysis, Selection, Financing, Implementation, and Review, Tenth edition. 2. K.Nagarajan, Project Management, New Age International Publishers. 3. Panneerselvam R., Engineering Economics, PHI. Textbooks 1. M N Arora, A Textbook Of Cost And Management Accounting , Vikas Publishing House, 2017
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Programme Name	Bachelor of Technology in Civil Engineering	Semester – VI
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Semester - VI		Multidisciplinary Minor	Contract Law, Arbitration, and Valuation					
SN	Course Code	Course Title	L-T-P (Hours/Week)	Credit	TA	MST	ESE	ESE hours
4	R5CE3205T	Construction Safety, Quality, and Risk Management	3-0-0=3	3	20	30	50	3
		Course Outcome: After completion of course students will be able to 1. Identify common construction site hazards and appropriate mitigation strategies. 2. Develop and implement site-specific safety plans and protocols. 3. Utilize quality assurance (QA) and quality control (QC) techniques to maintain construction standards.						

Module	Course Contents
1	Introduction to Construction Safety Importance of safety in construction, Common hazards and risks, Regulatory frameworks and safety standards. Basic terminology in safety, types of injuries, safety pyramid. Accident patterns, theories of accident-causation.
2	Safety Management Systems Components of a safety management system, Implementing safety protocols, Monitoring and continuous improvement. Types of PPE and their uses, Proper usage and maintenance of PPE, Employer and employee responsibilities.
3	Planning for safety Safety budget, safety culture, Introduction to OSHA regulations, Role of stakeholders in safety, Site safety programs - Job hazard analysis, accident investigation & accident indices-violation, penalty.
4	Construction Quality Management Definition and importance of quality in construction, Quality control vs. quality assurance, Tools and techniques for quality management.
5	Standards and Compliance

	Industry standards for quality, Compliance with legal and regulatory requirements, Quality certifications and audits.
6	Risk Management Process Identifying risks, Analyzing and evaluating risks, Implementing risk controls. Introduction to risk management, Types of risks in construction (e.g., financial, legal, strategic), Risk assessment and mitigation strategies.
7	Best Practices for Construction Safety and Quality SoPs (Safe Operating Procedures) – Construction equipment, materials handling-disposal & hand tools. Awareness and training programs, Effective communication and documentation, Use of proper equipment and technology
	Recommended Reading 1. Hinze, J.W. (1997) Construction Safety, Prentice Hall 2. MacCollum, D.V. (1995) Construction SafetyPlanning, John Wiley & Sons 3. Total Quality Management: Dale H. Besterfield , Hemant Urdhwareshe , Mary Besterfield-Sacre , Carol. Textbooks 1. MacCollum, D.V. (2007) Construction Safety Engineering Principles, McGraw Hill Publishers 2. Bhattacharjee, S.K. (2011) Safety Management in Construction, Khanna Publishers

Programme Name	Bachelor of Technology in Civil Engineering	Semester – VII
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Semester - VII		Multi Disciplinary Minor	Contract Law, Arbitration, and Valuation					
SN	Course Code	Course Title	L-T-P (Hours/Week)	Credit	TA	MST	ESE	ESE hours
5	R5CE4202T	Appraisal Implementation for Infrastructure Projects	3- 1- 0	4	20	30	50	3
	Course Outcome: After completion of course students will be able to 1. Explain infrastructure projects and their lifecycle. 2. Apply project appraisal techniques. 3. Use project management tools and software. 4. Evaluate financial viability and PPP models.							

Module	Course Contents
1	Introduction to Infrastructure Projects Definition and importance of infrastructure projects, Types of infrastructure projects (e.g., transportation, energy, water), Overview of the project lifecycle: policies and planning, feasibility, project selection and approval, construction, operation and maintenance, project evaluation.
2	Project Appraisal Techniques Method of Project Appraisal: Economic analysis, Financial analysis, Market analysis, Technical analysis, Managerial competence, Ecological analysis.
3	Tools And Techniques for Project Management Tools And Techniques for Project Management. Project selection techniques (a) Cost-benefit analysis and (b) Risk and sensitivity analysis. Project execution planning techniques. Project monitoring and progressing techniques (a) Progress measurement technique (PROMPT) (b) Performance monitoring technique (PERMIT) and (c) Updating, reviewing and reporting technique (URT). Project cost and productivity control techniques (a) Productivity budgeting techniques (b) Value engineering (VE)
4	Financial Analysis and Funding

	Market and Demand Analysis: Information required for market and demand analysis , Secondary sources of information, Market survey , Demand forecasting, Uncertainties in demand forecasting. Financial feasibility and economic viability, Sources of financing (public, private, PPP). Budgeting and financial planning, Investment appraisal techniques (NPV, IRR, payback period)
5	Appraisal of PPP Projects Definition of PPPs, Roles and Responsibilities of the Parties to a PPP, PPP Structure, Principles of PPP Project Appraisal, Mechanism of Appraisal: Feasibility Assessment, Economic Viability, Risk & Reward Balanced, Post Appraisal Process.
6	Investment Appraisal Importance of investment appraisal, investment appraisal /capital budgeting process: planning, analysis, selection , implementation and review. Techniques for Investment Appraisal: Non discounting criteria & Discounting Criteria.
7	Case Studies and Best Practices Analysis of successful infrastructure projects, Lessons learned and best practices, Group projects and presentations
	Recommended Reading 1. Reed B. J, Coates, S., Parry Jones S et al. (2007) Infrastructure for all, WEDC, Loughborough University. 2. Reference Guide for PPP Project Appraisal, Infrastructure Finance Secretariat, Ministry of Finance, Government of India (2023). Textbooks 1. Prasanna Chandra, (2023), <i>Projects: Planning, Analysis, Selection, Financing, Implementation and Review</i>, McGraw Hill Education (India) Pvt. Ltd. 2. Alvin S. Goodman & Makarand Hastak (2015), <i>Infrastructure Planning Handbook: Planning, Engineering, and Economics</i>, McGraw Hill