

# Master of Technology in Construction Technology and Management

Department of Civil Engineering

## The overall credits structure

Category	PC	PE	OE	Total
Credits	37.5	15	0	52.5

### Program Core

Course Code	Course Name	PC	PE	OE	Total
CVC771	Seminar In Construction Technology and Management-I	0	0	2	0
CVC772	Seminar In Construction Technology and Management-II	0	0	2	0
CVD772	Major Project Part-I (CEC)	0	0	18	9
CVD773	Major Project Part-II (CEC)	0	0	24	12
CVL772	Construction Project Management	3	0	0	3
CVL773	Quantitative Methods in Construction Management	3	0	0	3
CVL774	Construction Contract Management	3	0	0	3
CVL775	Construction Economics and Finance	3	0	0	3
CVL776	Construction Practices and Equipment	3	0	0	3
CVP772	Computational Laboratory for Construction Management	0	0	3	1.5
<b>Total Credits</b>				<b>37.5</b>	

### Program Electives for All Background

CVD771	Minor Project (CEC)	0	0	6	3
CVS771	Independent Study (CEC)	0	3	0	3
MCL754	Operations Planning and Control	3	0	0	3
MCL756	Supply Chain Management	3	0	0	3
MCL757	Logistics	3	0	0	3
MCL771	Value Engineering and Life Cycle Costing	3	0	0	3
MSL705	HRM Systems	2	0	0	1.5
MSL804	Procurement Management	3	0	0	3
MSL822	International Business	3	0	0	3
MSL846	Total Productivity Management	3	0	0	3

### Program Electives for Civil Engineering Background

EEL747	Electrical Systems for Construction Industries	3	0	2	4
CVL702	Ground Improvement and Geosynthetics	3	0	0	3
CVL714	Field Exploration and Geotechnical Processes	3	0	0	3
CVL715	Excavation Methods and Underground Space Technology	3	0	0	3
CVL727	Environmental risk assessment	3	0	0	3
CVL747	Transportation Safety and Environment	3	0	0	3
CVL750	Intelligent Transportation Systems	3	0	0	3
CVL765	Concrete Mechanics	3	0	0	3
CVL771	Advanced Concrete Technology	3	0	0	3
CVL777	Building Science	3	0	0	3
CVL778	Building Services and Maintenance Management	3	0	0	3
CVL779	Formwork for Concrete Structures	3	0	0	3
CVL820	Environmental Impact Assessment	3	0	0	3
CVL838	Geographic Information Systems	2	0	2	3
CVL840	Planning and Design of Sustainable Transport Systems	3	0	0	3
CVL871	Durability and Repair of Concrete Structures	3	0	0	3
CVL872	Infrastructure Development and Management	3	0	0	3
CVL873	Fire Engineering and Design	3	0	0	3
CVL874	Quality and Safety in Construction	3	0	0	3
CVL875	Sustainable Materials and Green Buildings	3	0	0	3

### Program Electives for Electrical Engineering Background

ELL700	Linear Systems Theory	3	0	0	3
ELL712	Digital Communications	3	0	0	3
ELL750	Modelling of Electrical Machines	3	0	0	3
ELL751	Power Electronic Converters	3	0	0	3
ELL752	Electric Drive System	3	0	0	3
ELL753	Physical Phenomena in Electrical Machines	3	0	0	3
ELL754	Permanent Magnet Machines	3	0	0	3
ELL755	Variable Reluctance Machines	3	0	0	3

ELL756	Special Electrical Machines	3	0	0	3
ELL757	Energy Efficient Motors	3	0	0	3
ELL758	Power Quality	3	0	0	3
ELL759	Power Electronic Converters for Renewable Energy Systems	3	0	0	3
ELL760	Switched Mode Power Conversion	3	0	0	3
ELL761	Power Electronics for Utility Interface	3	0	0	3
ELL762	Intelligent Motor Controllers	3	0	0	3
ELL763	Advanced Electric Drives	3	0	0	3
ELL764	Electric Vehicles	3	0	0	3
ELL765	Smart Grid Technology	3	0	0	3
ELL766	Appliance Systems	3	0	0	3
ELL767	Mechatronics	3	0	0	3
ELL770	Power System Analysis	3	0	0	3
ELL771	Advanced Power System Protection	3	0	0	3
ELL772	Planning and Operation of a Smart Grid	3	0	0	3
ELL773	High Voltage DC Transmission	3	0	0	3
ELL774	Flexible AC Transmission system	3	0	0	3
ELL775	Power System Dynamics	3	0	0	3
ELL776	Advanced Power System Optimization	3	0	0	3
ELL777	Power System operation and control	3	0	0	3
ELL778	Dynamic Modelling And Control of Sustainable Energy Systems	3	0	0	3
ELL850	Digital Control of Power Electronics and Drive Systems	3	0	0	3
ELL851	Computer Aided Design of Electrical Machines	3	0	0	3
ELL852	Condition Monitoring of Electrical Machines	3	0	0	3
ELL853	Advanced Topics in Electrical Machines	3	0	0	3
ELL854	Selected Topics in Electrical Machines	3	0	0	3
ELL855	High Power Converters	3	0	0	3
ELL856	Advanced Topics in Power Electronics	3	0	0	3
ELL857	Selected Topics in Power Electronics	3	0	0	3
ELL858	Advanced Topics in Electric Drives	3	0	0	3
ELL859	Selected Topics in Electric Drives	3	0	0	3
ELL870	Restructured Power System	3	0	0	3
ELL871	Distribution System Operation and Planning	3	0	0	3
ELL872	Selected Topics in Power System	3	0	0	3
ELL873	Power System Transient	3	0	0	3
ELL874	Power System Reliability	3	0	0	3
ELP850	Electrical Machines Laboratory	0	0	3	1.5
ELP851	Power Electronics Laboratory	0	0	3	1.5
ELP852	Electrical Drives Laboratory	0	0	3	1.5
ELP853	DSP Based Control of Power Electronics and Drives Laboratory	0	0	3	1.5
ELP854	Electrical Machines CAD Laboratory	0	1	4	3
ELP855	Smart Grids Laboratory	0	1	4	3
ELP870	Power System Lab I	0	1	4	3
ELP871	Power System Lab II	0	1	4	3
ESL718	Power Generation, Transmission and Distribution	3	0	0	3
ESL732	Bioconversion and Processing of Waste	3	0	0	3
ESL734	Nuclear Energy	3	0	0	3
ESL740	Non-conventional Sources of Energy	3	0	0	3
ESL746	Hydrogen Energy	3	0	0	3
ESL768	Wind Energy and Hydro Power Systems	3	0	0	3
ESL770	Solar Energy Utilization	3	0	0	3
ESL870	Fusion Energy	3	0	0	3

### Program Electives for Mechanical Engineering Background

EEL747	Electrical Systems for Construction Industries	3	0	2	4
ITL709	Maintenance Planning and Control	3	0	0	3
ITL752	Bulk Materials Handling	2	0	2	3
MCL749	Mechatronics Product Design	3	0	2	4
MCL751	Industrial Engineering Systems	1	0	4	3

MCL753	Manufacturing Informatics	3	0	2	4	MCL785	Advanced Machining Processes	3	0	0	3
MCL755	Service System Design	3	0	0	3	MCL787	Welding Science and Technology	3	0	2	4
MCL769	Metal Forming Analysis	3	0	2	4	MCL788	Surface Engineering	3	0	2	4
MCL776	Advances in Metal Forming	3	0	0	3	MCL791	Processing and Mechanics of Composite Materials	3	0	2	4
MCL778	Design and Metallurgy of Welded Joints	3	0	2	4	MCL792	Injection Molding and Mold Design	2	0	2	3
MCL780	Casting Technology	3	0	2	4	MCL818	Heating, Ventilating and Air-conditioning	3	0	0	3
MCL781	Machining Processes and Analysis	3	0	2	4	MCL866	Maintenance management	3	0	0	3
MCL783	Automation in Manufacturing	3	0	2	4						
MCL784	Computer Aided Manufacturing	3	0	2	4						

Sem.	Courses (Number, abbreviated title, L-T-P, credits)						Lecture courses	Contact h/week				Credits
	L	T	P	Total	L	T		P	Total			
I	CVL772 Construction Project Management (3-0-0) 3	CVL773 Quantitative Methods in Construction Management (3-0-0) 3	CVP772 Computational Laboratory for Construction Management (0-0-3) 1.5	CVC771 Seminar In Construction Technology and Management-I (0-0-2) 0	PE-1 (3-0-0) 3	PE-2 (3-0-0) 3	4	12	0	5	17	13.5
II	CVL775 Construction Economics and Finance (3-0-0) 3	CVL776 Construction Practices and Equipment (3-0-0) 3	CVL774 Construction Contract Management (3-0-0) 3	CVC772 Seminar In Construction Technology and Management-II (0-0-2) 0	PE-3 (3-0-0) 3		4	12	0	2	14	12
Summer												
III	CVD772 Major Project Part-I (CEC) (0-0-18) 9	PE-4 (3-0-0) 3	PE-5 (3-0-0) 3				2	6	0	18	24	15
IV	CVD773 Major Project Part-II (CEC) (0-0-24) 12						0	0	0	24	24	12

**Total = 52.5**