

Master of Science in Civil Engineering

Minimum Duration : 4 Semesters, 2 Years
 Maximum Duration : 14 Semesters, 7 Years
 Minimum CGPA required to earn degree 2.50

Program Code 049
 Number of Courses 9-12
 Credit Hours 33-36

Program Objectives:

To escort the graduates in continual learning by pursuing advanced degrees or additional educational opportunities through conducting innovating research, prepare them to develop team work and have excellent interpersonal communication skills.

Program Outcomes:

After completion of MS Program, Scholars will be able:

- ▲ Excel professionally in the field of Civil Technology by planning, designing, constructing and operating inter-disciplinary projects of civil works.
- ▲ Attain optimum level of technical expertise and impart efficient managerial skills.
- ▲ Take-up any challenging task by utilizing time and resources along with their technical creativity and proactive approach in order to play leading role in organization.
- ▲ Solve problems on the site of construction and remove any constraint.

Eligibility

Candidates possessing the relevant bachelor of engineering degree, obtained after 16 years of education with 2.00 CGPA on the scale of 4.00 in semester system or at least 50% marks in annual system from recognized institute/university shall be eligible for admission.

Applicant need to pass GAT (General) to be conducted by NTS / ETEA any registered testing agency or University with at least 50% cumulative score and to clear departmental interview at the time of Admission.

SEMESTER ONE	Course Code	Course Title	Cr. Hrs. 9
		Core -I	3-0
		Core -II	3-0
		Elective I	3-0

SEMESTER TWO	Course Code	Course Title	Cr. Hrs. 9
		Core -III	3-0
		Core -IV	3-0
		Elective II	3-0

Master of Science in Civil Engineering

SEMESTER THREE			SEMESTER FOUR		
Course Code	Course Title	Cr. Hrs.	Course Code	Course Title	Cr. Hrs.
	Core -V	3-0		Plan A: MS with Research Work	
	Core -VI	3-0	RES 690	Research Thesis	6-0
RES 585	*Applied Research Methods	3-0		Plan B: MS with Course Work	
				Elective III	3-0
				Elective IV	3-0
				Elective V	3-0

Specializations Offered

Transportation Engineering	Structural Engineering	Environmental Engineering
Geotechnical Engineering	Water Resources Engineering	Construction Engineering & Management

List of Core Courses

Geotechnical Engineering Specialization

Course Code	Course Title	Cr. Hrs.
CE504	Geotechnical Earthquake Engineering	3-0
CE505	Soil Dynamics	3-0
CE506	Advanced Foundation Engineering	3-0
CE507	Shallow Foundations	3-0
CE508	Deep Foundations	3-0
CE509	Rock Mechanics and Tunnelling Engineering	3-0
CE510	Ground Improvement Techniques	3-0
CE511	Engineering Properties of Soils	3-0
CE512	Advanced Engineering Geology	3-0
CE513	Geotechnical Modeling	3-0
CE514	Earth Retaining structures	3-0
CE516	Site Investigation and Instrumentation	3-0
CE517	Geoenvironmental Engineering	3-0
CE518	Slope Stability Analysis	3-0
CE519	Special Topics in Geotechnical Engineering	3-0
Ce573	Introduction to Unsaturated Soil Mechanics	3-0

Structural Engineering

Course Code	Course Title	Cr. Hrs.
CE501	Advanced Concrete Design	3-0
CE503	Advanced Concrete Technology	3-0
CE521	Advanced Mechanics of Materials	3-0
CE522	RC Structures (Special Topics)	3-0
CE523	Repair and Retrofitting of Structures	3-0
CE524	Bridge Engineering	3-0
CE525	Dynamics of Structures	3-0
CE526	Finite Element Analysis	3-0
CE529	Design of Masonry Structures	3-0
Ce528	Computer Applications to Structural Engineering	3-0
CE530	Special Topics in Structural Engineering	3-0
CE547	Advanced Structural analysis	3-0
CE610	Advanced Steel Design	3-0
CE620	Pre-Stressed Concrete Design	3-0

Master of Science in Civil Engineering

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Transportation Engineering

Course Code	Course Title	Cr. Hrs.
CE541	Pavement Structure and Design	3-0
CE542	Traffic Engineering and Management	3-0
CE543	Advanced pavement Engineering	3-0
CE544	Intelligent Transport system (ITS)	3-0
CE545	Traffic Safety	3-0
CE546	Transportation Planning and Modeling	3-0
CE554	Airport Engineering	3-0
CE548	Railway Engineering	3-0
CE549	Geometric Design of Highways	3-0
CE550	Pavement Evaluation and Rehabilitation	3-0
CE551	Materials specification for Highway Engineering	3-0
CE552	Retaining Structures and Embankments for Highways	3-0
CE510	Ground Improvement Techniques	3-0

Environmental Engineering

Course Code	Course Title	Cr. Hrs.
CE640	Environmental Impact Assessment	3-0
CE587	Physico-Chemical Processes in Environmental Engineering	3-0
CE588	Wastewater Collection, Treatment and disposal	3-0
CE589	Industrial and Hazardous Waster Management	3-0
CE590	Water Collection, Treatment and Supply System	3-0
CE591	Environmental Chemistry and Microbiology	3-0
CE592	Solid Waste Management	3-0
CE593	Air and Noise Pollution Control	3-0
CE594	Ecology and Risk Assessment	3-0
CE595	Environmental Health and Safety	3-0
CE596	Water Quality Modeling	3-0
CE597	Agriculture Pollution Control	3-0
CE598	Special Topics in Environmental Engineering	3-0
CE599	Marine Pollution and Control	3-0
CE516	Geoenvironmental Engineering	3-0

Water Resources Engineering

Course Code	Course Title	Cr. Hrs.
CE561	Open Channel Flow	3-0
CE562	Advanced Engineering Hydrology	3-0
CE563	Advanced Irrigation Engineering	3-0
CE564	Sediment Transport and River Engineering	3-0
CE565	Design of Hydraulic Structures	3-0
CE566	Dam and reservoir Engineering	3-0
CE567	Hydropower Engineering	3-0
CE568	Flood Estimation and Control	3-0
CE569	Reservoir Design and Operation	3-0
CE570	Statistical Hydrology	3-0
CE581	Remote Sensing and GIS Applications in Water Resources	3-0
CE582	Ground Water Hydrology and Exploration	3-0
CE583	Applied Hydrology	3-0
CE583	Special Topics in Water Resources Engineering	3-0

Construction Engineering & Management Specialization

Course Code	Course Title	Cr. Hrs.
CE 574	Contract Management	3-0
CE 576	Economic Decision Analysis	3-0
CE 577	Construction Planning, Scheduling & Control	3-0
CE 578	Construction Safety Management	3-0
CE 579	Construction Risk Management	3-0
CE 584	Construction Project Administration	3-0
CE 585	Sustainable Construction	3-0
CE 586	Construction Cost Estimation	3-0
CE 555	Human Resource Management in Construction	3-0