Institute of Engineering, Pulchowk Campus, Lalitpur
Course Structure 2025
MSc in Structural Engineering

Year : I — Part I

Teaching Schedule				Examination Scheme			Total	Remarks
SN	Course Code	Course Title	Credit	Assessment Marks	Final Exam			
					Duration Hours	Marks		
1	ENCEST501	Solid Mechanics	4	40	3	60	100	
2	ENCEST502	Advanced Structural Analysis	4	40	3	60	100	
3	ENCEST503	Structural Dynamics	4	40	3	60	100	
4	ENCEST504	Advanced Concrete Technology and Design	4	40	3	60	100	
		Total	16	160		240	400	

Year : I — Part II

Teaching Schedule				Examination Scheme			Total	Remarks
S. N.	Course Code	Course Title	Credit	Assessment Marks	Final Exam			
					Duration Hours	Marks		
1	ENCEST551	Earthquake Resistant Design of Structures	4	40	3	60	100	
2	ENCEST552	Structural Engineering Laboratory	4	40	3	60	100	
3	ENCEST56X	Elective-I	4	40	3	60	100	
4	ENCEST57X	Elective-II	4	40	3	60	100	
		Total	16	160		240	400	

Year : II — Part I

Teaching Schedule				Examination Scheme			Total	Remarks
S. N.	Course Code	Course Title	Credit	Assessment Marks	Final Exam			
					Duration Hours	Marks		
1	ENCEST61X	Elective-III	4	40	3	60	100	
2	ENCEST62X	Elective-IV	4	40	3	60	100	
3	ENCEST601	Project	4	100			100	
		Total	12	180		120	300	

Year: II — Part II

Teaching Schedule				Examination Scheme			Total	Remarks
S. N.	Course Code	Course Title	Credit	Assessment Marks	Final Exam			
					Duration Hours	Marks		
1	ENCEST651	Thesis	16	100			100	

Note: Students will write a thesis in the fourth semester. However, the thesis work must start from the beginning of third semester, which may be associated to the project work. Students can carry out the research thesis with one or more supervisors.

Elective Courses:

Elective courses will be offered as per the availability of resource persons. The lists of electives are as follows:

Elective I:

1. Computer Aided Design and Structural Optimization [Code: ENCEST561]
2. Construction Technology and Management [Code: ENCEST562]
3. Earthquake Engineering and Risk Assessment [Code: ENCEST563]
4. Theory of Shells [Code: ENCEST564]

Elective II:

1. Finite Element Method [Code: ENCEST571]
2. Performance Based Design [Code: ENCEST572]
3. Seismic Resistant Design of Masonry [Code: ENCEST573]
4. Artificial Intelligence and Expert Systems [Code: ENCEST574]

Elective III:

1. Design of Foundation [Code: ENCEST611]
2. Non-linear Analysis of Structures [Code: ENCEST612]
3. Structural Control and Base Isolation [Code: ENCEST613]
4. Repair and Rehabilitation of Structures [Code: ENCEST614]

Elective IV:

1. Design of Industrial Structures [Code: ENCEST621]
2. Design of Bridges [Code: ENCEST622]
3. Structural Health Monitoring [Code: ENCEST623]
4. Design of Temporary Structures [Code: ENCEST624]

Further Explanation about Project and Thesis works

The project and thesis component theme could be one of the following:

- Industrial/organizational problem assessment (mainly done at industry/organization)
- Community based problem assessment (mainly done at community)
- Literature based problem assessment (mainly done at institution)
- Analytical or experimental or prototype based problem assessment (mainly done at institution)
- Case study based problem assessment (mainly done at case specific site)
- Field work based problem assessment (mainly done at specific site)
- Any other relevant and deemed suitable by department
- The project component will be of approximately 3 months (full - time) duration

Eligibility and Degree Award:

Eligibility: **BE in Civil Engineering**
Degree Award: **MSc in Structural Engineering (Civil Engineering)**