جامعة الإسراء
Isra University

Faculty of Engineering

Department of Civil Engineering

Study Planfor the Master Degree in Structural Engineering

2019 / 2020

Program Objectives:

Intended Learning Outcomes (ILOs):

At the end of program, students of the Master in Structural Engineering are expected to be able to:

1. Apply principles of engineering mechanics and use appropriate tools to solve problems in structural engineering.
2. Design and evaluate structural components and systems to meet the desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, constructability, and sustainability.
3. Plan, compose, and integrate verbal, written, and graphical communication to technical and non-technical audiences.
4. Function effectively as a member of an engineering team.
5. Discuss professional responsibility in light of social context of engineering problems.

6. Framework for Structural Engineering Master Degree (33 Cr. Hrs.)

Track	Requirements	Credit Hours
Thesis	Compulsory courses	15
	Elective Courses	9
	Thesis	9
Total		33
Non-Thesis	Compulsory courses	24
	Elective Courses	9
Total		33

Course Numbering:

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Faculty Code		Dept. Code		Course Level		Knowledge Field		Sequence

1. Thesis Track

Compulsory Requirements: (18 Credit Hours)

Course No.	Course Title	Cr. Hr.	Prerequisite
04037130	Scientific Research Methodology	3	--
04037131	Advanced Structural Mechanics	3	--
04037132	Advanced Structural Analysis	3	--
04037230	Finite Element Analysis	3	--
04037240	Seismic Design of Structures	3	--
	Total	**15**	

Elective: 9 Credit Hours from the following courses.

Course No.	Course Title	Cr. Hr.	Prerequisite
04037231	Applied Mathematics in Structural Engineering	3	--
04037133	Structural Dynamics	3	--
04037232	Theory of Elastic Stability	3	--
04037140	Advanced Steel Structures Design	3	--
04037141	Advanced Concrete Structures Design	3	--

04037241	Prestressed Concrete Structures	3	--
04037233	Blast and Impact Effects on Structures	3	--
04037142	Advanced Foundation Engineering	3	--
04037242	Sustainable Concrete Technology	3	--
04037143	Construction Projects Management	3	--
04037243	Optimization Techniques	3	--
04037144	Special Topics in Structural Engineering	3	--

Thesis: 9 Credit Hours

Course No.	Course Title	Cr. Hr.	Prerequisite
04037139	Thesis (1)	3	
04037239	Thesis (2)	3	04037139
04037249	Thesis (3)	3	04037239
	Total	**9**	

2. Non-Thesis Track

Compulsory Requirements: (24 Credit Hours)

Course No.	Course Title	Cr. Hr.	Prerequisite
04037130	Scientific Research Methodology	3	--
04037131	Advanced Structural Mechanics	3	--
04037132	Advanced Structural Analysis	3	--
04037230	Finite Element Analysis	3	--
04037240	Seismic Design of Structures	3	--
04037140	Advanced Steel Structures Design	3	--
04037141	Advanced Concrete Structures Design	3	--
04037241	Prestressed Concrete Structures	3	--
	Total	**12**	

Elective: 9 Credit Hours from the following courses.

Course No.	Course Title	Cr. Hr.	Prerequisite
04037231	Applied Mathematics in Structural Engineering	3	--
04037133	Structural Dynamics	3	--
04037232	Theory of Elastic Stability	3	--
04037233	Blast and Impact Effects on Structures	3	--
04037142	Advanced Foundation Engineering	3	--
04037242	Sustainable Concrete Technology	3	--
04037143	Construction Projects Management	3	--
04037243	Optimization Techniques	3	--
04037144	Special Topics in Structural Engineering	3	--