



مشروع تحويل
النظام الدراسي من السنوي الى الفصلي للدراسات
الاولية

جامعة ميسان – كلية الهندسة

قسم الهندسة المدنية

A Proposal to
change studying program from annual to semesters for
undergraduate study

Misan University – Engineering College

Science in Civil Engineering

٢٠١٧-٢٠١٦

1. Overview

Since it had been established in 2012, the Department of Civil Engineering continues to expand in activities of research, teaching and professional services. The Bachelor Degree in Civil Engineering is structured into a four-year program. The units of the courses are decided to equip students with a broad knowledge base and designed to fulfill its Vision and Mission statements. These statements are:

1.1 Vision Statements

Civil Engineering department seeks to achieve discrimination locally regionally and globally as a pioneer section providing software engineering and development engineering services to the community and in accordance with international standards of TQM

1.2 Mission Statements

Civil engineering department aims to prepare the engineering staffs that contribute to the building of institution and development of engineering work. and work on research and applied studies, depending on system distinguished academic plan of study and modern scientific laboratories

1.3 Program Educational Objectives

1. Contribute to the preparation of specialized engineers in the field of Civil engineering to provide the society with engineering expertise and competencies.
2. Rehabilitation graduates to do the planning, design and implementation of engineering projects through the introduction of modern technological means in the curriculum of the department.
3. Building an integrated and balanced personality of the graduate and deepen understanding of the moral responsibilities necessary professional future for them and their needs.
4. Encourage scientific research by providing all forms of support for him as well as the development of partnership relations between scientific research and scientific problems in all sectors including the service industries .
5. Substrate configuration informed sober be reference to solve technical problems in construction projects through the provision of engineering consultancy.

1.4 Student Outcomes

The Civil Engineering Department at the University of Misan offers a program that provides students with the following upon graduation:

1. An ability to apply knowledge of mathematics, science, and engineering.
2. An ability to design and conduct laboratory experiments, as well as to analyze and interpret data.
3. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
4. An ability to function on multi-disciplinary teams.
5. An ability to identify, formulate, and solve engineering problems.
6. An understanding of professional and ethical responsibility.
7. An ability to communicate effectively.
8. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
9. Recognition of the need for, and an ability to engage in life-long learning.
10. Knowledge of contemporary issues.
11. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Graduates Description

Scientific personality has leadership skills. He has knowledge in civil engineering sciences and the ability of changing and improving the construction issues and services in community.

2. Course Description

The units are calculated such as, the theoretical hours (1 hour per week = 1 unit), practical hours (2-3 hours per week = 1 unit), and the tutorial hours (units = 0). Prerequisites, if any, are indicated at the course description. These have been established to assure an adequate and uniform background for students in advanced classes.

Course code is presented according to three requirements:

- 1- University requirement started by the letter **U**
- 2- Engineering College requirement is started by the letter **E**
- 3- Department requirement (Civil Engineering) is started by the letters **CE**

Course code starts with capital letter followed by number of 3-digit as following:

1st digit represents the **class number**

2nd digit represents the **semester number**

3rd digit represents the **subject number**

For examples:

Example: U113 represents University requirements, first year, first semester, and third subject.

Example: CE212 represents Department requirements, second year, first semester, and second subject.

3. Graduation Requirements

<i>Requirements</i>	<i>Units</i>	<i>Total hours/Year</i>
<i>University Requirements</i>	<i>4</i>	<i>60</i>
<i>College Requirements</i>	<i>36</i>	<i>765</i>
<i>Department Requirements</i>	<i>117</i>	<i>2715</i>
<i>Total</i>	<i>157</i>	<i>3540</i>

4. University Requirements: 4 Units

<i>Subject Code</i>	<i>Subject</i>	<i>Units</i>	<i>Weekly hours</i>		
			<i>Th.</i>	<i>Prac.</i>	<i>Tut.</i>
<i>U111</i>	<i>English Language</i>	<i>2</i>	<i>2</i>	<i>-</i>	<i>-</i>
<i>U211</i>	<i>Human Rights and Democracy</i>	<i>2</i>	<i>2</i>	<i>-</i>	<i>-</i>
<i>Total</i>		<i>4</i>	<i>4</i>		

5. College Requirements: 36 Units

<i>No.</i>	<i>Subject Code</i>	<i>Subject</i>	<i>Units</i>	<i>Weekly hours</i>		
				<i>Th.</i>	<i>Prac.</i>	<i>Tut.</i>
<i>1</i>	<i>E112</i>	<i>Mathematics I</i>	<i>3</i>	<i>3</i>	<i>-</i>	<i>1</i>
<i>2</i>	<i>E121</i>	<i>Mathematics II</i>	<i>3</i>	<i>3</i>	<i>-</i>	<i>1</i>
<i>3</i>	<i>E113</i>	<i>Statics I</i>	<i>3</i>	<i>3</i>	<i>-</i>	<i>1</i>
<i>4</i>	<i>E122</i>	<i>Statics II</i>	<i>3</i>	<i>3</i>	<i>-</i>	<i>1</i>
	<i>E128</i>	<i>Dynamics</i>	<i>2</i>	<i>2</i>	<i>-</i>	<i>-</i>
<i>5</i>	<i>E116</i>	<i>Computer Science I</i>	<i>2</i>	<i>1</i>	<i>2</i>	<i>-</i>
<i>6</i>	<i>E123</i>	<i>Computer Science II</i>	<i>2</i>	<i>1</i>	<i>2</i>	<i>-</i>
<i>7</i>	<i>E124</i>	<i>Engineering Statistics</i>	<i>2</i>	<i>2</i>	<i>-</i>	<i>1</i>
<i>8</i>	<i>E115</i>	<i>Engineering Drawing I</i>	<i>2</i>	<i>-</i>	<i>4</i>	<i>-</i>

9	E125	Engineering Drawing II	2	-	4	-
Total for 1 st Year			24	18	12	5
10	E212	Applied Mathematics I	3	3	-	1
11	E221	Applied Mathematics II	3	3	-	1
11	E222	Engineering Ethics	2	2	-	-
Total for 2 nd Year			8	8	0	2
Total for 3 rd Year			0	0	0	0
12	E411	Engineering Project I	2	-	3	-
13	E421	Engineering Project II	2	-	3	-
Total for 4 th Year			4	0	6	0
Total			36	26	18	7
				51		

6. Department Requirements: 117 Units

Subject Code	Subject Title	Units	Weekly hours		
			Th.	Prac.	Tut.
CE115	Engineering Geology	2	1	2	1
CE117	Engineering Materials Properties	2	1	2	-
CE118	Engineering Workshops	2	-	4	-
CE126	Construction Materials	2	1	2	1
CE127	Concrete Materials	2	1	2	1
Total for 1 st Year		9	4	12	3
CE213	Mechanics of Materials I	3	3	-	1
CE223	Mechanics of Materials II	3	2	2	2
CE214	Fluid Mechanics I	3	2	2	1
CE224	Fluid Mechanics II	3	2	2	1
CE215	Engineering Surveying I	3	2	2	1
CE225	Engineering Surveying II	3	2	2	-
CE216	Concrete Technology I	3	2	2	-
CE226	Concrete Technology II	3	2	2	-
CE217	Computer Programming I	2	1	2	1
CE227	Computer Programming II	2	1	2	-
CE218	Building Construction I	2	2	-	-
CE228	Building Construction II	2	2	-	-
Total for 2 nd Year		32	23	18	7
CE311	Engineering Analysis	2	2	-	2
CE321	Numerical Analysis	3	2	2	2
CE312	Theory of Structures I	3	3	-	1
CE322	Theory of Structures II	3	3	-	1
CE313	Soil Mechanics I	3	2	2	1
CE323	Soil Mechanics II	3	2	2	1
CE314	Reinforced Concrete Design I	3	3	-	2
CE324	Reinforced Concrete Design II	3	3	-	2
CE315	Irrigation Engineering	2	2	-	1
CE325	Drainage Engineering	2	2	-	1
CE316	Engineering Management	2	2	-	-
CE326	Engineering Economy	2	2	-	-
CE317	Traffic Engineering	3	2	1	1
CE327	Transportation Engineering	2	2	-	1

CE318	<i>Computer Applications in Civil Engineering</i>	2	-	4	-
CE328	<i>Steel Structures; Fundamentals</i>	2	2	-	-
	<i>Total for 3rd Year</i>	40	34	11	14
CE412	<i>Reinforced Concrete Design III</i>	2	2	-	2
CE422	<i>Topics in Concrete Design</i>	3	3	-	1
CE413	<i>Foundation Engineering I</i>	3	3	-	1
CE423	<i>Foundation Engineering II</i>	3	3	-	1
CE414	<i>Steel Structures Design I</i>	2	2	-	1
CE424	<i>Steel Structures Design II</i>	2	2	-	1
CE415	<i>Hydraulic Structures</i>	2	2	-	1
CE425	<i>Engineering Hydrology</i>	2	2	-	2
CE416	<i>Highway Engineering</i>	3	3	-	1
CE426	<i>Highway Pavement Analysis & Design</i>	3	2	2	1
CE417	<i>Water Supply Engineering</i>	2	2	1	1
CE427	<i>Sanitary Sewage Engineering</i>	2	2	1	1
CE418	<i>Construction Methods and safety planning</i>	2	2	-	1
CE428	<i>Estimation and Specifications</i>	2	2	-	1
CE419	<i>Sustainable building and Repair Process</i>	2	2	-	-
CE429	<i>Special Topics</i>	2	2	-	-
	<i>Total for 4th Year</i>	36	35	5	16
	TOTAL	117	95	46	40
				186	

7. CE Program: Curriculum

Typical degree program is shown in the following Tables for Civil Engineering, where recommended CE course plan by semester is presented

First Year

First Semester						Second Semester					
Subject	Subject Code	Units	Weekly hours			Subject	Subject Code	Units	Weekly hours		
			Th.	Prac.	Tut.				Th.	Prac.	Tut.
Mathematics I	E112	3	3	-	1	Mathematics II	E121	3	3	-	1
Statics I	E113	3	3	-	1	Statics II	E122	2	2	-	1
Computer science I	E114	2	1	2	-	Computer Science II	E123	2	1	2	-
Engineering Geology	CE115	2	1	2	1	Engineering Statistics	E124	2	2	-	1
Engineering Drawing I	E116	۲	-	۴	-	Engineering Drawing II	E125	۲	-	۴	-
Engineering Material properties	CE117	2	1	2	-	Construction Materials	CE126	2	1	2	1
Engineering Workshops and safety requirments	CE118	2	-	4	-	Concrete Materials	CE127	2	1	2	1
English Language	U111	2	2	-	-	Dynamic	E128	۲	۲	-	-
Total		1۸	11	1۴	3			17	12	1۰	6
			۲۸						۲8		

Second Year

First Semester						Second Semester					
Subject	Subject Code	Units	Weekly hours			Subject	Subject Code	Units	Weekly hours		
			Th.	Prac.	Tut.				Th.	Prac.	Tut.
Applied Mathematics I	E212	3	3	-	1	Applied Mathematics II	E221	3	3	-	1
Mechanics of Materials I	CE213	3	3	-	1	Mechanics of Materials II	CE223	3	2	2	2
Fluid Mechanics I	CE214	3	2	2	1	Fluid Mechanics II	CE224	3	2	2	1
Engineering Surveying I	CE215	3	2	2	1	Engineering Surveying II	CE225	3	2	2	-
Concrete Technology I	CE216	3	2	2	-	Concrete Technology II	CE226	3	2	2	-
Computer Programing I	CE217	2	1	2	1	Computer Programing II	CE227	2	1	2	-
Building Construction I	CE218	2	2	-	-	Building Construction II	CE228	2	2	-	-
Human Rights and Democracy	U211	2	2	-	-	Engineering Ethics	E222	2	2	-	-
Total		21	17	8	5	Total		21	16	10	4
			30						30		

Third Year

First Semester						Second Semester					
Subject	Subject Code	Units	Weekly hours			Subject	Subject Code	Units	Weekly hours		
			Th.	Prac.	Tut.				Th.	Prac.	Tut.
Engineering Analysis	CE311	2	2	-	2	Numerical Analysis	CE321	3	2	2	2
Theory of Structures I	CE312	3	3	-	1	Theory of Structures II	CE322	3	3	-	1
Soil Mechanics I	CE313	3	2	2	1	Soil Mechanics II	CE323	3	2	2	1
Reinforced Concrete Design I	CE314	3	3	-	1	Reinforced Concrete Design II	CE324	3	3	-	1
Irrigation Engineering	CE315	2	2	-	1	Drainage Engineering	CE325	2	2	-	1
Engineering Management	CE316	2	2	-	-	Engineering Economy	CE326	2	2	-	-
Traffic Engineering	CE317	3	2	1	1	Transportation Engineering	CE327	2	2	-	1
Computer Applications in Civil Engineering	CE318	2	-	4	-	Steel Structures; Fundamentals	CE328	2	2	-	-
Total		20	16	7	7	Total		20	18	4	7
			30						29		

Forth Year

First Semester						Second Semester					
Subject	Subject Code	Units	Weekly hours			Subject	Subject Code	Units	Weekly hours		
			Th.	Prac.	Tut.				Th.	Prac.	Tut.
Reinforced Concrete Design III	CE412	3	3	-	1	Topics in Concrete Design	CE422	2	2	-	2
Foundation Engineering I	CE413	3	3	-	1	Foundation Engineering II	CE423	3	3	-	1
Steel Structures Design I	CE414	2	2	-	1	Steel Structures Design II	CE424	2	2	-	1
Hydraulic Structures	CE415	2	2	-	1	Engineering Hydrology	CE425	2	2	-	-
Highway Engineering	CE416	3	3	-	1	Highway Pavement Analysis & Design	CE426	3	2	2	1
Water Supply Engineering	CE417	2	2	1	1	Environmental and Sanitary Sewage Engineering	CE427	2	2	1	1
Construction Methods and safety planning	CE418	2	2	-	1	Estimation and Specifications	CE428	2	2	-	1
Sustainable building and Repair Process	CE419	2	2	-	-	Special Topics	CE429	2	2	-	-
Engineering Project I	E411	2	-	3	-	Engineering project II	E421	2	-	3	-
Total		21	19	4	7	Total		20	1 ^v	6	7
			30						30		

Summer Training

The **Civil Engineering** curriculum requires students to complete one month of summer training at private companies or governmental firms. This training is a compulsory component of graduation requirements. It is supervised by the Summer Training Committee of the department.

8. CE Curriculum / Units Requirements

- 4 Years Program (Full - Time Study)
- 157 Units for the **Civil Engineering** included:
 - Mathematics and basic Science: 35 Units
 - Engineering Topics: 105 Units.
 - General Education: 4 Units.

9. How the Curriculum Aligns with the Program Educational Objectives

The faculty has complete authority to define, revise, implement, and achieve program educational objectives. Input is required from the students, alumni, and the employers of our alumni in the implementation of program objectives. The major role of the faculty is to create, revise, and evaluate subjects for the program as well as define and revise program educational objectives and ensure achievement of student outcomes. Therefore, the above process ensures alignment of the curriculum with Program Educational Objectives as shown in various tables. The **Civil Engineering** department insures that the students receive all the engineering analysis within the context of engineering program. At our faculty meetings, the discussion is possible to be introduced in the different subjects and brainstorm on ways to bring engineering program and open-ended problems into our subjects.

Program Outcomes: For the purpose of achieving its objectives, the civil engineering department has developed eleven Program Outcomes (POs) as an initial set of POs. These outcomes are, in effect, what the students expected to know and achieve post-graduation. The following Table shows these program outcomes:

OUTCOMES	Code
PO1: an ability to apply knowledge of mathematics, science, and engineering fundamentals.	a
PO2: an ability to outline and conduct experiments as well as analyze and interpret data.	b
PO3: an ability to design an integrated system and its various components and processes, within realistic economic, environment, social, political, ethical, health and safety, manufacturability, and sustainability constraints.	c
PO4: an ability to function on multi-disciplinary teams to analyze and solve problems.	d
PO5: an ability to identify, evaluate and solve engineering problems.	e
PO6: an understanding of the responsibility of engineers to practice in professional and ethical manner at all times.	f
PO7: an ability to communicate effectively using oral, written, and graphic forms.	g

PO8: the broad education necessary to understand the potential impact of engineering solutions on society and the environment.	h
PO9: an understanding of the need for up-to-date engineering tools and other knowledge acquired through life-long learning.	i
PO10: knowledge of contemporary issues related to engineering.	j
PO11: an ability to use modern engineering tools, skills and design techniques necessary for the practice of engineering.	k