

# 2023-2024

# Civil Engineering Program Specification فصول در اسية





# Contents

	Items	Pages
1	Program Basic Information	
2	Professional Information- Program vision- Program mission	
3	Attributes of the civil engineering graduates	2
4	Program aims	3
5	Competencies & Learning Outcomes (LO'S)	4
6	Academic standards	8
7	Reference standards	8
8	Program Curriculum Structure and Contents	9
9	The reference frames determinants for bachelor stage	9
10	Contact Hours According to the Requirements	12
11	Curriculum Structure distribution	15
12	Curriculum Structure and Contents	
13	Program admission requirements	
14	Regulations for progression and program completion	
15	Teaching and Learning Methods	28
16	Methods and rules for student evaluation	29
17	Program evaluation	29
18	Civil engineering courses contents	29
19	Appendix 1: Matrix for Civil Engineering Program	
20	Appendix 2: Competencies and aims for Civil Engineering Program	
21	Appendix 3: Aims and attributes for Civil Engineering Program	
22	Appendix 4: Mission and Goals with Competencies	
23	Appendix 5: Mission and Goals with Aims	





# **Civil Engineering**

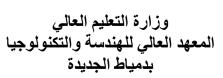
# **B.Sc. Program Specification**

1.		Basic Information		
	1.1	Program title		Civil Engineering
	1.2	Program type		Single
	1.3	Department (s)		Civil Engineering
	1.4	Coordinator	Prof. I	Dr./ Mohamed Elkiki
	1.5	External evaluator(s)		8/2023
	1.6	Last date of program specifications approval		10/2023
	1.7	Year of starting the program		2019

2.		Professional Information	
	2.1	2.1 Program Vision	
		The department works to become a distinguished school that presents civil engineers with high technical competencies and encourages advanced research to meet current and future challenges in the fields of civil engineering and local, regional and international excellence.	
	2.2		
		Offering advanced bachelor's programs in civil engineering to inculcate moral and ethical values of community service while developing skills to add value to the competencies of graduates. Transferring knowledge and activities to students with an emphasis on developing leadership qualities and teamwork. Providing infrastructure events and resources that contribute to a student- friendly learning environment. Providing a knowledge base and advisory services to the community in all fields of civil engineering. Encouraging students to pursue continuous learning and development to take professional competitive exams with the required training, to meet the needs of the labor market at the local, regional and international levels.	

3.	Graduate Attributes	
The graduates of the civil engineering program should be having the following		
attributes:		
	1 - Master a wide spectrum of engineering knowledge and specialized skills and can	
1	apply acquired knowledge using theories and abstract thinking in real life situations.	



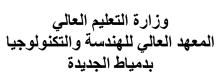




2	Apply analytic critical and systemic thinking to identify, diagnose and solve engineering problems with a wide range of complexity and variation.
3	Behave professionally and adhere to engineering ethics and standards.
4	Work in and lead a heterogeneous team of professionals from different engineering specialties and assume responsibility for own and team performance.
5	Recognize his/her role in promoting the engineering field and contribute in the development of the profession and the community.
6	Value the importance of the environment, both physical and natural, and work to promote sustainability principles.
7	Use techniques, skills and modern engineering tools necessary for engineering practice.
8	Assume full responsibility for own learning and self-development, engage in lifelong learning and demonstrate the capacity to engage in post- graduate and research studies.
9	Communicate effectively using different modes, tools and languages with various audiences; to deal with academic/professional challenges in a critical and creative manner.
10	Demonstrate leadership qualities, business administration and entrepreneurial skills.

4.	Program aims		
The	The graduates of the Civil engineering program should be able to:		
1	Apply a broad range of engineering knowledge, science and specialized skills with analytic, systemic and critical thinking to identify and solve engineering problems in real life.		
2	Lead, supervise, manage and work in a diverse team of professionals from various engineering disciplines, taking responsibility for own and team performance to achieve society's requirements of occupational safety, health, and quality standards.		
3	Recognize the role in promoting engineering and contributing to the profession's and community's development and appreciating the importance of the environment.		







4	Use the techniques, skills, and current engineering tools required for engineering practice by taking full responsibility for one's own learning and development of the ability to pursue postgraduate.
5	Communicate effectively with a variety of audiences using a variety of forms, methods, and languages.
6	Analyze data from the intended tests to manage resources creatively.
7	Achieve an optimum professionally in design and supervision of civil engineering projects and use the codes of practice of all civil engineering branches.
8	Apply analytical, experimental, design, construction engineering processes with proficiency aided by modern engineering tools.
9	Work to develop the profession and the community and promote sustainability principles and behave professionally and adhere to engineering ethics and standards.
10	Select the appropriate construction and building materials professionally and effectively and sustainable technologies for construction of buildings.

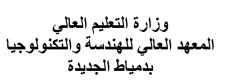
5.	Competency	LOS
Achi	0 0	Dutcomes would indicate that the graduates are
	· · · ·	edge and skills to achieve the Educational
		ojectives.
C1		al Describe the relevant mathematical
	complex engineering problems	1 1 1
	by applying engineering	a2 Explain the scientific principles and
	fundamentals, basic science, and	
	mathematics.	<b>a3</b> Explain the basic principles of engineering.
		<b>b1</b> Using math ideas and theories that are
		applicable to the field.
		<b>b2</b> Using scientific concepts and theories that
		are relevant to the profession.
		b3 Applying engineering basics that are
		relevant to the subject.
		c1 Identify, formulate, and solve complex
		engineering problems by -applying the
		concepts and the theories of mathematics.
		c2 Identify, formulate, and solve complex
		engineering problems by applying the
		concepts and the theories of sciences,
		appropriate to the discipline.





		<b>c3</b> Identify, formulate, and solve complex engineering problems by applying engineering fundamentals.
C2	Develop and conduct appropriate experimentation and/or simulation, analyze and interpret data, assess, and evaluate findings, and use statistical analyses and objective engineering judgment to draw conclusions.	<ul> <li>a1 Define, basic characteristics, properties, concepts, and techniques of structural analysis and mechanics, properties and strength of materials, surveying, soil mechanics, hydrology and fluid mechanics.</li> <li>a2 Define the principles, basic properties, and features of construction material, as well as their use in sustainable technologies for construction of buildings, infrastructures, and water structures.</li> <li>b1 Conduct basic experiments to learn about the basic characteristics and features of structural analysis and mechanics, properties and strength of materials, surveying, soil mechanics, hydrology, and fluid mechanics.</li> <li>b2 Conduct basic experiments to learn about the applications of structural analysis and mechanics, hydrology, and fluid mechanics.</li> <li>b2 Conduct basic experiments to learn about the applications of structural analysis and mechanics, hydrology, and fluid mechanics in the fields of transportation and traffic, roadways and airports, railways, sanitary works, irrigation, water resources and harbors, or any other emerging field relevant to the discipline.</li> <li>b3 Analyze and interpret data.</li> <li>b4 Evaluate components, systems, and processes are evaluated for their characteristics and performance.</li> <li>c1 Choose relevant mathematical and computer-based methodologies for problem modelling and analysis.</li> <li>c2 Develop suitable experimentation and/or simulation.</li> <li>c3 Applying statistical analyses and objective engineering judgment to draw conclusions.</li> </ul>
C3	Apply engineering design processes to produce cost-	<b>a1</b> Learn the general principles of design techniques specific to reinforced concrete and
	effective solutions that meet specified needs with	steel structures, foundations and earth retaining structures.
	consideration for global, cultural, social, economic, environmental,	

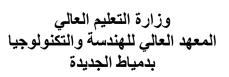






	ethical, and other aspects as appropriate to the discipline and within the principles and contexts of sustainable design and development.	<ul> <li>a2 Understand the professional ethics and impacts of engineering solutions on society and environment.</li> <li>a3 Recognizes the various construction defects, instability and quality issues and assess environmental impacts of projects.</li> <li>b1 Judge engineering decisions considering balanced costs, benefits, safety, quality, reliability, and environmental impact.</li> <li>c1 Incorporate economic, societal, global, environmental, and risk management factors into design.</li> <li>c2 Applying engineering design procedures to generate cost-effective solutions while adhering to the principles and contexts of sustainable design and development.</li> </ul>
C4	Utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements, environmental issues, and risk management principles.	<ul> <li>a1 Describe quality assurance systems, codes of practice, and standards, as well as health and safety regulations and environmental concerns.</li> <li>a2 List the engineering-related business and management principles.</li> <li>a3 Define contemporary engineering technologies and their applications in relation to disciplines.</li> <li>b1 Create methodical approaches when dealing with new and advancing technology.</li> <li>c1 Apply safe systems at work by taking the necessary precautions to manage hazards.</li> <li>c2 Use fundamental organizational and project management abilities.</li> <li>c3 Utilize modern technologies.</li> <li>c4 Apply quality assurance procedures and follow codes and standards.</li> </ul>
C5	Practice research techniques and methods of investigation as an inherent part of learning.	<ul> <li>a1 Define technical language and report writing.</li> <li>b1 Assess different ideas, views, and knowledge from a range of sources.</li> <li>c1 Prepare technical reports.</li> <li>d1 Search for information to engage in lifelong self-learning discipline.</li> </ul>
C6	Plan, supervise and monitor implementation of engineering	<b>a1</b> Show the appropriate and sustainable technologies for construction of buildings,

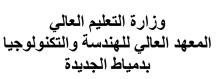






C7	projects, taking into consideration other trades requirements. Function efficiently as an individual and as a member of	<ul> <li>infrastructures and water structures.</li> <li>b1 interpret data derived from laboratory observation from equipment flow sheets, charts, and curves to interpret data derived from laboratory observation.</li> <li>c1 Conduct experimental work related to the reinforced concrete and steel structures, foundations and earth retaining structures.</li> <li>c2 Acquire entrepreneurial skills.</li> <li>d1 Collaborate effectively within multidisciplinary team.</li> </ul>
	multi-disciplinary and multicultural teams.	<ul><li>d2 Work in stressful environment and within constraints.</li><li>d3 Motivate individuals.</li></ul>
C8	Communicate effectively – graphically, verbally and in writing – with a range of audiences using contemporary tools.	1
C9	Use creative, innovative, and flexible thinking and acquire entrepreneurial and leadership skills to anticipate and respond to new situations.	<ul> <li>d1Think creatively in solving problems of design.</li> <li>d2 Effectively manage tasks, time, and resources.</li> <li>d3 Refer to relevant literature.</li> </ul>
C10	Acquire and apply new knowledge, and practice self, lifelong and other learning strategies.	<ul> <li>d1 Search for information to engage in lifelong self-learning discipline.</li> <li>d2 Professionally merge engineering knowledge, understanding, and feedback to improve design, products and/or services.</li> </ul>
C11		<ul> <li>a1. Recognize the fundamentals of structural analysis and mechanics, properties and strength of materials, surveying, soil mechanics, hydrology, and fluid mechanics.</li> <li>a2. Summarize appropriate and sustainable technologies for construction of buildings, infrastructures, and water structures.</li> <li>c1 Using either numerical techniques or physical measurements and/or testing by applying a full range of civil engineering concepts and techniques of structural analysis and mechanics, properties and strength of</li> </ul>







	soil mechanics, hydrology and	materials, surveying, soil mechanics,
C12	fluid mechanics. Achieve an optimum design of Reinforced Concrete and Steel Structures, Foundations and Earth Retaining Structures; and at least three of the following civil engineering topics: Transportation and Traffic, Roadways and Airports, Railways, Sanitary Works, Irrigation, Water Resources and Harbors; or any other emerging	<ul> <li>hydrology, and fluid mechanics.</li> <li>b1 Achieve an optimum design of Reinforced Concrete and Steel Structures, Foundations and Earth Retaining Structures.</li> <li>b2 Achieve an optimum design of works for transportation and traffic, roadways and airports, railways, sanitary works, irrigation, water resources and harbors; or any other emerging field relevant to the discipline.</li> </ul>
	field relevant to the discipline.	
C13	Plan and manage construction processes; address construction defects, instability, and quality issues; maintain safety measures in construction and materials; and assess environmental impacts of projects.	<ul> <li>a1 defines plan and mange construction process.</li> <li>b1 Address construction defects, instability, and quality issues</li> <li>c1 Assess environmental impacts of projects.</li> </ul>
C14	Deal with biddings, contracts and financial issues including project insurance and guarantees.	<ul> <li>a1 define biddings, contracts, and financial issues.</li> <li>b1 Address biddings, contracts and financial issues including project insurance and guarantees.</li> <li>c1 Apply biddings, contracts, and financial issues on civil engineering projects</li> </ul>

#### 6. Academic standards

The program adopts the National Academic reference standards of Civil engineering program (NARS 2018) which is approved by the national authority for quality assurance and accreditation of education NAQAAE.

#### 7. Reference standards

a. External references for standards (Benchmarks)

- ABET Engineering Criteria 2000
- -University of Texas at Austin, College of Engineering, Dept. of CIVIL Engineering
- Iowa State University, CIVIL Engineering Dept.

-Kuwait University, College of Engineering and Petroleum, Civil Engineering Department.





# 8. Program Curriculum Structure and Contents

#### 8.1 Program duration:

The program duration is five years

#### 8.2 Program structure:

- Total hours of the program: 264 contact hours
- Theoretical:139 contact hours
- Practical/Exercises: 125 contact hours
- **Compulsory**:248 contact hours
- Elective: 16 contact hours

T			No. Hours / Week				Average hours/week			Total/
Level	First T	Cerm (15 V	Veeks)	Second Term (15 Weeks)		1			Week	
	Lecture	ure Exerc. Lab.		Lecture Exerc. Lab.		Lecture	Exerc.	Lab.		
0	11	8	8	15	6	6	13	7	7	27
1 <sup>st</sup>	15	10	2	13	7	5	14	8.5	3.5	26
$2^{nd}$	14	8	5	14	11	1	14	9.5	3	26.5
3 <sup>rd</sup>	16	10	2	14	10	2	15	10	2	27
4 <sup>th</sup>	13	10	2	14	12	-	13.5	11	1	25.5
Total	69	46	19	70	46	14	69.5	46	16.5	132

Level	and S	anities Social nces		iness stration	and	ematics Basic ences	Engin Cul	eering ture	Bas Engine Scier	ering	App Engine and D	eering	a	jects nd ctice	Total
	1 <sup>st</sup>	2 <sup>nd</sup>	1 <sup>st</sup>	2 <sup>nd</sup>	1 <sup>st</sup>	2 <sup>nd</sup>	1 <sup>st</sup>	2 <sup>nd</sup>	1 <sup>st</sup>	2 <sup>nd</sup>	1 <sup>st</sup>	2 <sup>nd</sup>	1 <sup>st</sup>	2 <sup>nd</sup>	
	term	term	term	term	term	term	term	term	term	term	term	term	term	term	
0	0	8	0	0	22	14	0	5	5	0	0	0	0	0	54
$1^{st}$	4	4	0	0	4	4	5	4	15	12	0	0	0	0	52
$2^{nd}$	0	0	3	0	8	4	0	0	16	18	0	4	0	0	53
3 <sup>rd</sup>	0	0	0	4	0	0	0	0	8	0	20	22	0	0	54
4 <sup>th</sup>	0	8	0	0	0	0	0	0	0	0	20	12	5	6	51
Total	2	4		7	5	56	1	4	7	4	7	8	1	1	264
%	9.	09	2.	65	21	.21	5.	.30	28	.03	29	.54	4.	17	100





#### 9. THE REFERENCE FRAMES DETERMINANTS FOR BACHELOR STAGE

A. Humanities and Social Sciences

Code	Course Name	Contact hour
BAS025	Int. to Engineering and Environment	2
BAS026	Technical English Language 1	4
BAS027	BAS027 Human Rights	
BAS114	Technical English Language 2	4
BAS122	BAS122 Technical Report Writing	
BAS421	Research and Analytic Skills	2
BAS422	Environmental Management	3
CIE421	CIE421 Legislation and contracts	
	Total	24

#### **B.** Business Administration

Code	Course Name	Contact hour	
BAS213	Engineering Economy	3	
BAS321	BAS321 Project Management and Control		
	Total		

#### C. Mathematics and Basic Sciences

Code	Course Name	Contact hour
BAS011	Mathematics 1	4
BAS012	Mechanics 1	4
BAS013	Physics 1	6
BAS014	Engineering Chemistry	4
BAS016	Int. to Computer Systems	4
BAS021	Mathematics 2	4
BAS022	Mechanics 2	4
BAS023	Physics 2	6
BAS111	Mathematics 3	4
BAS121	Mathematics 4	4
BAS211	Engineering Probability and Statistics	4
BAS214	Computer Programming	4
BAS221	BAS221 Numerical Methods in Engineering	
	Total	56





# D. Engineering Culture

Code	Code Course Name		
BAS024	BAS024 Production Engineering		
BAS112	BAS112 Electrical Engineering Fundamentals		
BAS123	BAS123 Int. to Information Technology		
	Total		

# E. Basic Engineering Sciences

Code	Course Name	Contact hour
BAS015	Engineering Drawing and Projection	5
BAS113	Engineering Thermodynamics	5
BAS124	Strengthen of Materials	4
BAS212	Fluid Mechanics	4
CIE111	Structures Analysis 1	5
CIE112	Civil Engineering Drawing 1	4
CIE121	Structures Analysis 2	5
CIE122	Civil Engineering Drawing 2	4
CIE211	Structure Analysis 3	4
CIE212	Properties and Strength of concrete Materials	4
CIE213	Surveying 1	4
CIE221	Hydrology and Irrigation Engineering	4
CIE222	Reinforced Concrete 1	6
CIE224	Traffic and Transportation Engineering	4
CIE225	Principles of Building Construction	4
CIE312	Geology and Soil Mechanics 1	4
CIE313	CIE313 Open Channels Hydraulics	
	Total	74

# F. Applied Engineering and Design

Code	Course Name	Contact hour
CIE223	Surveying 2	4
CIE311	Reinforced Concrete 2	6
CIE314	Steel Structures Design 1	6





CIE315	Highways and Airport Engineering	4	
CIE316	Water Supply Engineering	4	
CIE321	Reinforced Concrete 3	5	
CIE322	Soil Mechanics and Foundation	4	
CIE323	Computer Application in Civil Engineering	4	
CIE324	Steel Structures Design 2	5	
CIE326	Water and wastewater treatment	4	
CIE411	Foundation Engineering 1	4	
CIE412	Inland Navigation and Harbor Engineering	4	
CIE413	Design of Irrigation Works	4	
CIE415	Elective 1	4	
CIE416	Elective 2	4	
CIE422	CIE422 Reinforced Concrete 4		
CIE424	Elective 3	4	
CIE425	CIE425 Elective 4		
	Total		

G. Projects and Practice

Code	Course Name	Contact hour
CIE226	Training 1	-
CIE325	Training 2	-
CIE414	Project 1	5
CIE423	Project 2	6
	11	

From the previous tables, the reference frames determinations can be summarized as follows:

No.	Department	Contact Hours	The program percentage%	Reference Frames' percentage %
Α	Humanities and Social sciences	24	9.09	8-12
В	<b>Business Administration</b>	7	2.65	2-4
С	Mathematics and Basic Sciences	56	21.21	18-22
D	Engineering Culture	14	5.30	4-6
Е	Basic Engineering Sciences	74	28.03	25-30
F	Applied Engineering and Design	78	29.54	25-30
G	Projects and Practice	11	4.17	4-6





Total	264	

# 10. Contact Hours According to the Requirements

# A. University Requirements

Code	Course Name	Contact hour						
BAS016	Int. to Computer Systems	4						
BAS025	Int. to Engineering and Environment	2						
BAS026	Technical English Language 1	4						
BAS027	Human Rights	2						
BAS114	Technical English Language 2	4						
BAS421	Research and Analytical Skills	2						
CIE421	Legislation and contracts	3						
	Total							

# B. Institute Requirements

Code	Course Name	Contact hour
BAS011	Mathematics 1	4
BAS012	Mechanics 1	4
BAS013	Physics 1	6
BAS014	Engineering Chemistry	4
BAS015	Engineering Drawing and Projection	5
BAS021	Mathematics 2	4
BAS022	Mechanics 2	4
BAS023	Physics 2	6
BAS024	Production Engineering	5
BAS111	Mathematics 3	4
BAS112	Electrical Engineering Fundamentals	5
BAS113	Engineering Thermodynamics	5
BAS121	Mathematics 4	4
BAS122	Technical Report Writing	4
BAS123	Int.to Information Technology	4
BAS211	Engineering Probability and Statistics	4
BAS221	Numerical Methods in Engineering	4
	Total	76





# C. General Department Requirements

Code	Course Name	Contact hour
BAS124	Strength of Materials	4
BAS212	Fluid Mechanics	4
BAS213	Engineering Economy	3
BAS214	Computer Programming	4
BAS321	Project Management and Control	4
BAS422	Environmental Management	3
CIE111	Structures Analysis 1	5
CIE112	Civil Engineering Drawing 1	4
CIE121	Structures Analysis 2	5
CIE122	Civil Engineering Drawing 2	4
CIE211	Structure Analysis 3	4
CIE212	Properties and strength of concrete Materials	4
CIE213	Surveying 1	4
CIE221	Hydrology and Irrigation Engineering	4
CIE222	Reinforced Concrete 1	6
CIE223	Surveying 2	4
CIE224	Traffic and Transportation Engineering	4
CIE225	Principles of Building Construction	4
CIE312	Geology and Soil Mechanics 1	4
CIE313	Open Channel Hydraulics	4
CIE322	Soil Mechanics and Foundation	4
CIE323	Computer Application in Civil Engineering	4
	Total	90

# D. Specific Department Requirement

Code	Course Name	Contact hour
CIE226	Training 1	-
CIE311	Reinforced Concrete 2	6
CIE314	Steel Structure Design 1	6
CIE315	High ways and Airport Engineering	4
CIE316	Water Supply Engineering	4
CIE321	Reinforced Concrete 3	5
CIE324	Steel Structure Design 2	5
CIE325	Training 2	-





CIE326	Water and wastewater treatment	4
CIE411	Foundation Engineering 1	4
CIE412	Inland Navigation and Harbor Engineering	4
CIE413	Design of Irrigation Works	4
CIE414	Project 1	5
CIE415	Elective 1	4
CIE416	Elective 2	4
CIE422	Reinforced Concrete 4	4
CIE423	Project 2*	6
CIE424	Elective 3	4
CIE425	Elective 4	4
	Total	77

From the previous tables, the contact hours can be summarized as follow:

No.	Department	Contact Hours	The program percentage%			
1	University Requirements	21	7.95	6-10		
2	Institute Requirements	76	28.79	22-30		
3	General Department Requirements	90	34.09	30-35		
4	Specific Department Requirements	77	29.17	20-30		
	Total	264	(2	50-280)		





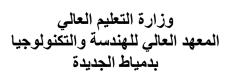
#### 11. <u>Curriculum Structure distribution</u> Level 0, Semester 1

			Ho	ours p	er we	ek			Deg	grees	
Code	Course Name	Lecture	Lab.	Exercise	Contact	Student's	Total	Periodic Exam	Practical\ Oral	Final Exam	Total
BAS011	Mathematics 1	2	-	2	4	4	8	60	-	90	150
BAS012	Mechanics 1	2	-	2	4	4	8	40	-	60	100
BAS013	Physics 1	2	2	2	6	4	10	60	15	75	150
BAS014	Engineering Chemistry	2	2	-	4	4	8	50	15	60	125
BAS015	Engineering Drawing and Projection	1	2	2	5	4	9	50	-	75	125
BAS016	Int. to Computer Systems	2	2	-	4	3	7	40	10	50	100
	Total	11	8	8	27	23	50				750

# Level 0, Semester 2

			He	ours p	er we	ek			Degr	ees	
Code	Course Name	Lecture	Lab.	Exercise	Contact	Student's	Total	Periodic Exam	Practical/	Final	Total
BAS021	Mathematics 2	2	I	2	4	4	8	60	-	90	150
BAS022	Mechanics 2	2	I	2	4	4	8	40	-	60	100
BAS023	Physics 2	2	2	2	6	4	10	60	15	75	125
BAS024	Production Engineering	3	2	-	5	4	9	50	15	60	125
BAS025	Int. to Engineering and Environment	2	-	-	2	2	4	25	-	50	75
BAS026	Technical English Language 1	2	2	-	4	3	7	40	10	50	100
BAS027	Human Rights	2	-	-	2	2	4	20	-	30	50
	Total	15	6	6	27	23	50				750







# Level 1, Semester 1

			Но	urs p	er we	ek			Deg	grees	
Code	Course Name	Lecture	Lab.	Exercise	Contact	Student's	Total	Periodic Exam	Practical\ Oral	Final Exam	Total
BAS111	Mathematics 3	2	-	2	4	4	8	60	-	90	150
BAS112	Electrical Engineering Fundamentals	3	-	2	5	4	9	60	-	90	150
BAS113	Engineering Thermodynamics	3	-	2	5	4	9	50	15	60	125
BAS114	Technical English Language 2	2	2	-	4	3	7	40	10	50	100
CIE111	Structures Analysis 1	3	-	2	5	4	9	50	-	75	125
CIE112	Civil Engineering Drawing 1	2	-	2	4	3	7	40	-	60	100
	Total	15	2	10	27	22	49				750

# Level 1, Semester 2

			Но	ours p	er we	ek			Degr	ees	
Code	Course Name	Lecture	Lab.	Exercise	Contact	Student's load	Total	Periodic Exam	Practical\Oral	Final Exam	Total
BAS121	Mathematics 4	2	-	2	4	4	8	60	-	90	150
BAS122	Technical Report Writing	2	2	-	4	4	8	40	10	50	100
BAS123	Int.to Information Technology	2	2	-	4	4	8	40	10	50	100
BAS124	Strength of Materials	2	-	2	4	4	8	40	-	60	100
CIE121	Structures Analysis 2	3	-	2	5	5	10	60	-	90	150
CIE122	Civil Engineering Drawing 2	2	1	1	4	3	7	60	-	75	150
	Total	13	5	7	25	24	49				750





#### Level 2, Semester 1

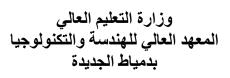
			Но	ours p	er we	ek			Degr	ees	
Code	Course Name	Lecture	Lab.	Exercise	Contact	Student'	Total	Periodic Exam	Practical\	Final	Total
BAS211	Engineering Probability and Statistics	2	-	2	4	4	8	40	-	60	100
BAS212	Fluid Mechanics	2	1	1	4	4	8	60	15	75	150
BAS213	Engineering Economy	2	-	1	3	4	8	40	-	60	100
BAS214	Computer Programming	2	2	-	4	4	7	40	10	50	100
CIE211	Structures Analysis 3	2	-	2	4	4	8	40	-	60	100
CIE212	Properties and Strength of concrete Materials	2	1	1	4	4	8	40	10	50	100
CIE213	Surveying 1	2	1	1	4	4	8	40	10	50	100
	Total	14	5	8	27	28	55				750

# Level 2, Semester 2

			Ho	urs p	er wo	eek			Degr	ees	
Code	Course Name	Lecture	Lab.	Exercise	Contact	Student's	Total	Periodic Exam	Practical/	Final	Total
BAS221	Numerical Methods in Engineering	2	-	2	4	5	9	40	-	60	100
CIE221	Hydrology and Irrigation Engineering	2	-	2	4	4	8	40	-	60	100
CIE222	Reinforced Concrete 1	4	-	2	6	5	11	60	-	90	150
CIE223	Surveying 2	2	1	1	4	4	8	50	15	60	125
CIE224	Traffic and Transportation Engineering	2	-	2	4	4	8	50	-	75	125
CIE225	Principles of Building Constructions	2	-	2	4	4	8	40	-	60	100
CIE226	Training 1*	-	-	-	-	-	-	30	-	20	50
	Total	14	1	11	26	26	52				

\* The student should make training in the summer following the 2nd semester for 4 weeks.







# Level 3, Semester 1

			Ho	ours p	er we	ek		Degrees			
Code	Course Name	Lecture	Lab.	Exercise	Contact	Student's	Total	Periodic Exam	Practical\ Oral	Final Exam	Total
CIE311	Reinforced Concrete 2	4	-	2	6	4	10	60	-	90	150
CIE312	Geology and Soil Mechanics1	2	1	1	4	4	8	40	10	75	125
CIE313	Open Channel Hydraulics	2	1	1	4	4	8	30	10	60	100
CIE314	4	-	2	6	4	10	60	-	90	150	
CIE315	CIE315 Design1 High ways and CIE315 Airport Engineering		-	2	4	4	8	40	-	60	100
CIE316	2	-	2	4	4	8	50	-	75	125	
	Total	16	2	10	28	24	52				750

# Level 3, Semester 2

			Ho	urs p	er we	ek		Degrees			
Code	Course Name		Lab.	Exercise	Contact	Student'	Total	Periodic Exam	Practical \Oral	Final Exam	Total
BAS321	Project Management and Control	2	-	2	4	4	8	40	-	60	100
CIE321	Reinforced Concrete 3	3	-	2	5	4	9	50	-	75	125
CIE322	Soil Mechanics and Foundation	2	-	2	4	4	8	50	-	75	125
CIE323 Computer Applications in Civil Engineering		2	2	-	4	4	8	40	10	50	100
CIE324	Steel Structure Design 2	3	-	2	5	4	9	50	-	75	125
CIE325	Training 2*	-	-	-	-	-	-	30	-	20	50
CIE3216	2	-	2	4	3	7	50	-	75	125	
	Total	14	2	10	26	23	49				750

\* The student should make training in the summer following the 2nd semester for 4 weeks.





# Level 4, Semester 1

			Ho	ours p	er we	eek		-	Degr	ees	
Code	Course Name	Lecture	Lab.	Exercise	Contact	Student's	Total	Periodic Exam	Practical\O	Final	Total
CIE411	Foundation Engineering 1	2	-	2	4	5	9	60	-	90	150
CIE412	Inland Navigation and Harbor Engineering	2	-	2	4	4	8	50	-	75	125
CIE413	CIE413 Design of Irrigation Works			2	4	4	8	50	-	75	125
CIE414	Project 1*	3	2	-	5	4	9	60	-	90	150
CIE415	Elective 1	2	-	2	4	4	8	40	-	60	100
CIE416 Elective 2			-	2	4	4	8	40	-	60	100
	Total	13	2	10	25	25	50				750

# Level 4, Semester 2

			Ho	urs p	er we	ek			Deg	grees	
Code	Course Name	Lecture	Lab.	Exercise	Contact	Student's	Total	Periodic Exam	Practical\ Oral	Final Exam	Total
BAS421	Research and Analytical Skills	2	-	-	2	2	4	10	-	40	50
BAS422	Environmental Management	2	-	1	3	3	6	40	-	60	100
CIE421	Legislation and contracts	2	-	1	3	4	7	40	-	60	100
CIE422 Reinforced concrete 4		2	-	2	4	4	8	40	-	60	100
CIE423	Project 2*	2	-	4	6	5	11	60	-	90	150
CIE424	Elective 3	2	-	2	4	4	8	40	-	60	100
CIE425 Elective 4		2	-	2	4	4	8	40	-	60	100
	Total			12	26	26	52				750

Continuous course; one oral examination for both CIE414 and CIE423 at the end of the second term.





# **12. Curriculum Structure and Contents** 12.1. Compulsory Courses

				1	A. Cor	npulso	ry	
	ter			Hou	irs per	week		Program
Level	Semester	Code	Course Name		Lab.	Exer.	Competencies	LO'S
		BAS011	Mathematics 1	2	-	2	C1	a1, b1, a3
		BAS012	Mechanics 1	2	-	2	C1	a1, a2, b1
		BAS013	Physics 1	2	2	2	C1	a1, a2, b1
	R 1	BAS014	General	2	2		C1	a1, c2, c3
	STE	DASUIT	Chemistry	2	2	-	C10	d2
	SEMESTER	BAS015	Engineering drawing and projection	1	-	2	C1	a1, a2, b1, b2
		BAS016	Int. to computer	2	2		C1	c2, c3
			systems	Z	Z	-	C5	b1
0			11	8	8			
LEVEL 0		BAS021	Mathematics 2	2	-	2	C1	a1, a3, b1, b3
LEV		BAS022	Mechanics 2	2	-	2	C1	a1, a2, b1, c1
		BAS023	Physics 2	2	2	2	C1	a1, a2, a3, b2
							C1	a1, a3, b3
	ER 2	BAS024	Production engineering	3	2	-	C3	c1, c2
	IESTER						C6	a1, c2
	SEMI	BAS025	Int. to Engineering and	2	_	_	C1	a2, a3, b2, c3
	S	DA3023	environment	2	-	-	C3	a2, a3, b1, c1
		BAS026	Technical English Language 1	1	-	2	C8	d1
		BAS027	Human Rights	2	-	-		
			Total	15	6	6		





				1	A. Cor	npulso	ry	
	er			Hou	irs per	week		Buognam
Level	Semester	Code	Course Name	Lec.	Lab.	Exer.	Competencies	Program LO'S
		BAS111	Mathematics 3	2	-	2	C1	a1, a2, a3, b1
		BAS112	Electrical Engineering	3	-	2	C1	a1, a2, b1, b2, c1, c2
			Fundamental				C2	a1, b3, b4, c1
	SEMESTER 1	BAS113	Engineering Thermodynamics	3	-	2	C1	a1, a2, a3, b1, b2, c1, c2
	<b>AES</b>		Technical English Language 2				C8	d1, d2
	SEN	-		2	2	-	C10	d1, d2
		CIE111	Structure	2		2	C1 C2	a3, b3, c3
		CIE111	Analysis 1	3	-	2	C11	a1, c3 a1, c1
		CIE112	Civil engineering drawing 1				C1	a1, a2
				2	-	2	C3	c1
LEVEL 1			_			10	C13	b1
E			Total	15	2	10		
Η		BAS121	Mathematics 4	2	-	2	C1	a1, a2, a3, b1,c1
		BAS122	Technical Report Writing	2	2	-	C5	a1, a2, b1, b2,c1,d1
							C8	d1,d2
	5	BAS123	Int. to Information	2	2	-	C4	a2,a3,c3
			Technology				C8	d1,d2
	SEMESTER	BAS124	Strengthen of materials	2	-	2	C1	a1, b1, c2, c3
	IW	GTE 1 8 1	Structure				C1	a1,b3
	SE	CIE121	analysis2	3	-	2	C2	al
							C11 C1	al
			Civil engineering				C1 C3	a2,a3 C1
		CIE122	drawing 2	2	1	1	C11	C1
			_				C12	b1
			Total	13	5	7		





				L	A. Cor	npulso	ry	
	er			Hou	irs per	week		Due gue au
Level	Semester	Code	Course Name	Lec.	Lab.	Exer.	Competencies	Program LO'S
		BAS211	Engineering Probability and Statistics	2	-	2	C1	a1, a2, b1, b3, c2
		BAS212	Fluid Mechanics	2	1	1	C2 C2 C11	a1,a2,b1,b2,b3 a1,a2,b1 a1, c1
		BAS213	Engineering Economy	2	-	1	C3 C4	a1,a2,b1,c1 a2,b1,c2
	TER	BAS214	computer programming	2	2	-	C1 C2	b3,c1,c2 a1,b3,c1
SEMESTER	SEMES	CIE211	Structure analysis 3	2	-	2	C1 C2 C11	a3,b3,c2,c3 a1,c3 a1,c1
	S	CIE212	Properties and strengthen of concrete	2	1	1	C4	a1,a3
			materials				C11 C1	a1,a2
Γ 3		CIE213	CIE213 surveying 1		1	1	C11	a2, b1 a1,C1
LEVEL 2			Total	14	5	8		
LE		BAS221	Numerical Methods in Engineering	2	-	2	C1	a1, a2, b1, b2, c1, c2
		CIE 221	Hydrology and Irrigation Engineering	2	-	2	C1 C2 C11 C12	a2, a3, b1, b2 a1, b1, b2 a1, c1 b1, b2
	SEMESTER 2	CIE 222	Reinforced concrete 1	4	-	2	C1 C2 C4 C11 C12	a3,c2 A2,c3 a1 C1 b1
	SEI	CIE 223	Surveying 2	2	1	1	C1 C1 C11	a3,c2 a1,c1
		CIE 224	Traffic and transportation Engineering	2	-	2	C1 C2 C11 C12	a1,c2 a2,b2,b3,c3 a2 b2
		CIE 225		2	-	2	C2 C4	a2 a1,a2,a3





				L	A. Cor	npulso	ry	
	er			Hou	irs per	week		Due gue m
Level	Semester	Code	Course Name	Lec.	Lab.	Exer.	Competencies	Program LO'S
			principles of Building constructions				C11	a2
							C3	a1,a2,a3, b1,c2
							C5	a1, b1, c1, d1
		CIE 226	Training 1 *	-	-	-	C6	a1, c2
							C7	d1, d2, d3
							С9	d1, d2
			Total	14	1	11		,
							C1	a2 ,c3
		CIE311	Reinforced concrete 2	4	-	2	C9	d1,d3
			concrete 2				C12	b1
			Geology and Soil				C1	a3, b3, c3
		CIE312	Mechanics1	2	1	1	C2	a1, c3
							C11	a1, c1
		CIE313	Open Channel	2	1	1	C2	a1, b1
		CIESTS	Hydraulics	2	1	1	C12	b1,b2
			Steel Structure Design 1				C1	a3, b3, c3
	-					2	C2	a1, c3
	ER	CIE314		4	-		C9 C11	<u>d3</u>
	L						C11 C12	a1, c1 b1
	E						C12 C2	a2,b2,b3
~	SEMESTER		High ways and				C3	a1,a3,b1
EVEL 3	SF	CIE315	Airport	2	-	2	C11	a2
VE			Engineering				C12	b2
E			Weten men la				C1	a3,b2
		CIE316	Water supply engineering	2	-	2	C11	a2
			engineering				C12	b2
			Total	16	2	10		
			Project				C3	b1,c2
	8 2	BAS321	Management and	2	_	2	C9	d2
	E	D/10321	Control	2		2	C13	a1, c1
	LS						C14	a1,b1,c1
	<b>1</b> E	CIE221	Reinforced	2		2	C2	a2,b1,c3
	SEMESTER 2	CIE321	Reinforced concrete 3	3	-	2	C11	a1,a2
		CIE322		2 -		2	C12 C1	b1 a3,b2
		UIE322		7	-	Δ.	UI	a5,02





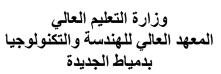
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	<b>'S</b> 2,c3 d2 a2 2 c1 1 b3 1
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	<b>'S</b> 2,c3 d2 a2 2 c1 1 b3 1
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	d2 a2 c1 l b3 l
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	a2 2 c1 l b3 l
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	2 c1 l b3 l
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	c1 l b3 l
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	l b3 l
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	b3 I
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	1
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	l
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	c1
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	1
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	
C9         d1, e           water and         C3         a2, e	
water and C3 a2,	
CIE326 wastewater 2 - 2 C12 b2	
treatment C13 c1	L
Total 14 2 10	
Foundation 2 C1 a3,b3	3,c3
CIE411 Engineering 1 2 - 2 C4 al	
	l
C3 al	
Inland Navigation C4 al	
CIE412 and Harbor 2 - 2 C11 a1,a2	
Engineering C12 b1,t	
$\checkmark$ $\simeq$ CIE412 Design of 2 C3 a1, 1	
CIE413 Design of L Irrigation Works 2 - 2 C11 a2 C12 b1,1	
THAT         CIE413         Design of Irrigation Works         2         -         2         C3         a1,1           CIE413         Design of Irrigation Works         2         -         2         C11         a2           CIE413         Design of Irrigation Works         2         -         2         C11         a2           C12         b1,1         C12         b1,1         C12         c1,c2         c1,c2           C3         a1,a2,c1         C12         c1,c2         c1,c2         c1,c2         c1,c2	2, b3, b4,
C3 $a1, a2, a2$	
$\begin{array}{c c} \hline \hline \\ $	
CIE414         Project 1*         3         2         - $C3$ $01, C1$ CIE414         Project 1*         3         2         - $C7$ $d1, d2$	
C8 $d1, d2$	
C11 a1, a2	
C12 b1,1	
C13 al, bl	





$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$					1	A. Cor	npulso	pulsory				
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$		er			Hou	irs per	week		Drogram			
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	Leve	Semest	Code	Course Name	Lec.	Lab.	Exer.	Competencies	-			
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$									a1, b1, c1			
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$												
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$			CIE415	Elective 1	2	-	2					
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$												
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$			CIE/16	Flective ?	2		2					
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$			CIE410	Elective 2	2	-	2					
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$				Total	13	2	10					
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$			BAS421		2	-	-	C2	b3,c3			
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$				Environmental					a2,a3,b1,c1			
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$			BAS422		2	-	1		a1,c1,c3			
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$				management								
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$				Ŧ '1.' 1								
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$			CIE421		2	-	1					
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$				contract								
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$												
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$			CEE422		2	-	2					
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$				concrete 4			2		-			
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$		3							a2, b1, b2, b3, b4, c1, c2, c3,			
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		R							a1, a2, a3, b1			
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		LE							a1, a3, c2, c3			
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		S										
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		W	CIE423	Project 2*	2	-	4					
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		E										
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$												
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$												
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$												
CIE424     Elective 3     2     -     2     Cl2     bl       CIE425     Elective 4     2     -     2     Cl2     bl       CIE425     Elective 4     2     -     2     Cl2     bl       CIE425     Elective 4     2     -     2     Cl2     bl												
$\begin{array}{c c c c c c c c c c c c c c c c c c c $			CIE424	Elective 2	2		2		al			
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$			0112424	LIEUTIVE 3	2	-	۷		b1			
CIE425         Elective 4         2         -         2         C4         a1           CIE425         Elective 4         2         -         2         C12         b1												
CIE425 Elective 4 2 - 2 <u>C12 b1</u>												
			CIE425	Elective 4	2	-	2					
Total 14 - 12				Total	14	-	12	015				







<u>12.2. Elective Courses</u> The students should choose one course from each of the following tables:

	Code	Course name	Competencies	Lo's
	CIE415A	Bridge Engineering		
	CIE415B	Coastal Engineering Fundamentals		
	CIE415C	Concrete Structures Technology		
	CIE415D	Construction Contraction		
e 1	CIE415E	Coast Analysis for Structure		
tiv	CILTISE	Projects	C2	a2
Elective	CIE415F	Highway Materials and	C4	a1, a3
E	CIL4151	Construction	C11	a1, a2
	CIE415G	Modern Structure Materials		
	CIE415H	planning of buildings Maintenance		
	CIE415II	and Protection		
	CIE415I	Reliability of Structures		
	CIE415J	Environmental Pollution Control		

	Code	Course name	Competencies	Lo's
	CIE416A	Design of Earthquake Structures		
	CIE416B	Design of Marine Platforms		
	CIE416C	Design of Shell Structures		
	CIE416D	Engineering Project Evaluation		
7	CIE416E	Fiber Reinforced Cement		
	CIE410E	Composites	C2	a2
Elective	CIE416F	Project Decision Analysis	C4	a1, a3
El	CIE416G	Project Financial Management	C11	a1, a2
	CIE416H	Risk Management and		,
	CIE410II	Constructions Safety		
	CIE416I	Air conditioning Systems for		
	CILTIO	Building		
	CIE416J	Construction Estimating and		
	CIL+10J	Tendering		

	Code	Course name	Competencies	Lo's	
	CIE424A	Groundwater Hydraulics			
/e 3	CIE424B	Pavement Design	C3	al	
ctiv	CIE424BFavement DesignCIE424CPre- Fabricated Concrete FramesCIE424DProject Management2		C4	al	
Ele			C12	b1	
	CIE424E	Project Visibility Study	C13	c1	
	CIE424F	Urban Transportation Planning			





CIE424G	Special Concrete Structures 1
CIE424H Foundation Engineering 2	
CIE424I Productivity Enhancement	
Methods	
CIE424J	Quality Assurance

	Code	Course name	Competencies	Lo's
	CIE425A	River Engineering		
	CIE425B	Hydraulics Engineering		
	CIE425C	Traffic Control Systems		
4	CIE425D	Tunneling and Underground Excavation	<b>C</b> 2	al al b1 c1
Elective	CIE425E	Special Concrete Structures 2	C3 C4 C12 C13	
lec	CIE425F	Railway Engineering		
E	CIE425G	Reinforced Concrete 5		
	CIE425H	Design of lighting Systems for buildings		
	CIE425I	Soil Dynamics		
	CIE425J	Introduction to Earthquake Engineering		

#### **13. Programme admission requirements**

#### • Admission to the preparatory year:

Having Egyptian Secondary education or equivalent certificate with major in Mathematics with the minimum grades determined by the National Admission Office.

#### • Admission to the Civil Engineering Department:

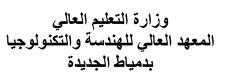
At the end of the preparatory year, students should fill an application form to choose the program he/she wishes to join (in a priority sequence). The students are selected according to the total no. of grades attained by each student at the end of the preparatory year. The number of students is determined according to the availability of educational resources.

#### 14. Regulations for progression and program completion

• All Years (except the last year)

The student is considered successful if he passes the examinations in all courses







of his class.

- $\circ$  The student must get a minimum of 50% to pass each course.
- To pass a level (Year) the student should not fail in more than two courses of his class or from lower classes.

#### • Last Year

- $\circ$   $\;$  To be graduated, the student must pass all the courses.
- If he fails in one or two courses, not including the project, he has the opportunity to be retested in September, and he must pass these courses to be graduated.
- If the student fails in the project; he must repeat it during the next academic year.

#### • The Grades of Success:

The student achieves one of the following grades in the examinations results and in the general grade according to the marks achieved:

- Excellent: from 85% of the total mark and upwards.
- Very Good: from 75% to less than 85% of the total mark.
- Good: from 65% to less than 75% of the total mark.
- Pass: from 50% to less than 65% of the total mark.

The grades of a failing student in a course are estimated in one of' the following grades:

- Weak: from 30% of the total mark to less than 50%
- Very Weak: Less than 30% of the total mark.

Also, the student is failing in exam if he doesn't have at least 30% of final exam maximum grade.

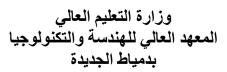
#### • Rules for dismissal from the program:

The student will be dismissed from the institute if the student stops studying without a prior excuse for a period of two semesters, or if he stops studying for the same period despite the rejection of the excuse he provided by the Institute's Board of Directors.

#### • Field training evaluation rules:

The student performs field training approved by the Institute for a period of eight weeks in fields and institutions after completing the second semester exams at the second and third levels. This training aims to link what the student studied at the Institute with practical applications as well as acquiring some skills in the field of specialization.







The distribution of the training degree is as follows:

- 30% of the grand finale is placed by the institute's supervisor
- 30% is set by the training entity's supervisor
- 40% to discuss the report submitted by the student

#### **<u>15. Teaching and Learning Methods</u>**

1.	Face-to-face lecture	8.	Projects
2.	On line Lecture	9.	Site visits
3.	Flipped Classroom	10.	Self-learning and research
4.	Presentation and Movies	11.	Cooperative
5.	Discussion	12.	Discovering
6.	Problem-solving	13.	Modeling
7.	Brain storming	14.	Lab

#### Teaching and Learning Methods of Disable Students:

No.	Teaching Method
1	Additional Tutorials
2	Online lectures and assignments

#### **<u>16. Methods and rules for student evaluation</u>**

Method (tool)	Lo's
Periodic Exams	To assess knowledge, understanding, professional and general and transferable skill.
Practical / Oral	To assess knowledge, understanding, professional and general and transferable skill.
Final Examination	To assess knowledge, understanding, professional and general and transferable skill.
Project applied on a practical field problem	To assess knowledge, understanding, professional and general and transferable skill.

#### **<u>17. Program Evaluation</u>**

Evaluator Tools	Sample evidence
-----------------	-----------------





1-Senior students	Questionnaires	15% of the students
2- Alumni	Questionnaires	
3- Stakeholders	Questionnaires	Samples representative from all sectors
4-external evaluator	Review reports	Dated 8/2022

# **<u>18. Civil Engineering Courses CONTENTS</u>**

# Level: 0 Semester: 1

<b>BAS011</b>	Mathematics 1 4 Contact Hou						
Content	vectors -mathema (simple repetitive intersection metho equations systems function (definition inverse - exponent functions and its i (definition - theory types) - curves dra applications - und	od – False position - Gauss Jordan me on - theories) - basic tial and logarithmic nverse - connection	umerical solut and modified method - arr ethod for del c trigonomet c functions - n (definition efinition - th al and engine Caylor expan	tions methods Newton's method - ays - linear etion. Derivation: ric functions and its hyperbolic - theories) - limits eories - higher order eering derivative sion - MacLean			
Lecture	2 hours/week	Laboratory	- Tutor	ial 2hours /week			

<b>BAS012</b>	]	4 Contact Hours				
Content	Applications of space vectors – results of group of Forces - momentums - equivalent couples – equivalent groups - equations of equilibrium for rigid bodies - Supports and pivots types - equilibrium under the effect of forces and the space couples - center of mass (groups of particles - flat surfaces) – moment of inertia (mean axes- equal surfaces).					
Lecture	2 hours / week	Laboratory	-	Tutorial	2hours / week.	

<b>BAS013</b>		Cont	tact 6 Hours		
Content	frequency motio viscosity – surfac thermodynamics	n, mechanica e tension–sou heat transi – entropy	quantities – Stand l properties for ma and waves – waves fer – Gas motion and second law d thermometers.	aterials –flu in elastic m n theory –	iid properties – nedia - Heat and First law of
Lecture	2 hours /week Laboratory 2 hours / week Tu		Tutorial	2hours /week	





<b>BAS014</b>	Engineering Chemistry 4 Contact Hours						
Content	Gaseous status - substantial and heat balance in fuel burning operations						
	and chem	ical operations	- properties of s	olutions -	dynamic balance in		
	physical and chemical operations - kinetic chemical interactions - electric						
	chemistry -introduction to chemical corrosion - water processing - building						
	materials -pollution and its treatment Selected chemical industries:						
	chemical manures - dyes - polymers - sugar -petrochemicals						
	semiconductors - oil, greases and industrial detergents.						
Lecture	2 hours / week	Laboratory	2 hours / week	Tutorial	- Hours / week.		

BAS015	Engineering	<b>5</b> Contact Hours		
Content	<ul> <li>orthogonal prointersections (culpersonals – projedrawing of perspective engineering sected devices - the asses Introduction to A of computer aided capabilities of C orthographic productional drawing of perspective engineering sected devices - the asses Introduction to A of computer aided capabilities of C orthographic productional drawing of perspective engineering sected devices - the assess of the engineering sected devices - the engineering sected device</li></ul>	jection – secon tters for solid b ections of simp bectives – dedu ions. <b>Drawing</b> embled drawing AutoCAD Func- ed drawing (CA AD software a bjection, and iso wings.	ndary orthogonal – podies – intersection le bodies – rules of lection of missing pr of the steel frame of for some mechan lamentals of engine AD) software. Basic nd drafting fundam ometric pictorials, p	ns of surfaces) - writing dimensions – ojections – drawing of <b>s</b> - binding and fixing ical steel components there is a steel way the features and
Lecture	1 hours / week	Laboratory	4 hours / week	Tutorial -

<b>BAS016</b>	Introduc	4 Cont	tact Hours		
Content	networks – i technology – C problems – log programming u	nitecture – compute nternet networks – omputer graphics – r gical design for the p using one structured of engineering problem	- Database sys nultimedia system programs and ma pr visual languag	tems and ms – metho atrices – aj	information ods of solving pplications in
Lecture	2 hours / week	Laboratory	2 hours / week	Tutorial	-

# Level 0, Semester 2

<b>BAS021</b>	Mathematics 2	4 Contact Hours





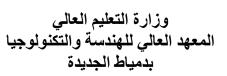
Content	two straight line circles – conical hyperbola) – a cylindrical – sp order – rotation <b>Integration:</b> in integration (dire theories) – app	<b>metry:</b> equations of s es – movement and ro l sectors (properties o malytical geometry herical – plane in sp and movement of axe definite integration (b ect – indirect) - definite plications of definite n technical length) –	tation of f conica in space ace – ec es in spa pasic fun te integr e integra	f axes – group l sectors - pa e – Cartesia quations of su ce ctions – theo ation (definit ation (plain	ps of unified axes arabola – ellipse – an coordinates – urfaces in second ories) – method of tion – properties - areas – circular
Lecture	2 hours / week	Laboratory	-	Tutorial	2hours /week.

<b>BAS022</b>		4 Contact Hours			
Content	path of particle projectiles - tied i motion in polar a particle in circula	<ul> <li>description</li> <li>notion for partitives</li> <li>relative r</li> <li>r path – princip</li> </ul>	of plan cle in st notion le of wo	e motion us traight path – between par ork and energ	particle – plane motion sing Cartesian axes – - motion in fixed axes - ticles - tied motion for gy of motion– principle mpulse and momentum
Lecture	2 hours / week	Laboratory	-	Tutorial	2hours /week.

BAS023	Physics 2	6 Contact Hours
Content	Electricity and magnetism: charge and column's law- electric flux- Gauss law- insulation materials-current, resistance a and simple circuits- magnetic field- Babo flux and gauss law- Faraday law - M engineering light – light properties for sp mirrors – wave properties for light interference - polarization- and diffraction construction – Bohar theorem – principal optical – electric phenomenon.	electric volt- condenser and nd electric force – ohm's law t and Savart laws – magnetic agnetic impedance Topics: herical surfaces – lenses and and Hygen's principle – n - Nuclear physics: nuclear
Lecture	2 hours / week Laboratory 2 hours / we	ek Tutorial 2hours / week.

<b>BAS024</b>	<b>Production Engineering</b>	<b>5</b> Contact Hours
Content	The engineering substances and its prop diagrams – heating equilibrium diagrams - a casting and the preparation of the mold) – for forming: forging -rolling – wire drawing – drawing - the extrusion) – processes of me	lloys - casting operation (sand orming processes (cold and hot blanking and piercing - deep







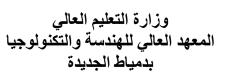
	processes – ha shaping – drilli	nd machining - ng –milling - gri	<ul> <li>automatic cut</li> <li>nding – work pie</li> </ul>	cesses (cutting eleme ting machining: lath ece fixation - cutting c) – measuring tools (	ning - g tools
	caliper – micrometers and its types) – engineering specifications – production cycle – production efficiency - industrial safety – practical				
	training in the d	lifferent worksho	ops.		
Lecture	3 hours / week	Laboratory	2 hours / week	Tutorial	-

BAS025	Introductions to Engineering and Environment 6 Contact Ho						
Content	<b>Engineering concepts</b> the engineering jobs environment economic ethics of the engineerin	What is enginee – relation betw e and social deve ng jobs. <b>Introduc</b> g environmental s nent – quality of environmental p ition – solid wast	ring – inter reen engin elopment <b>tion to en</b> cience – r the envin ollution as es pollutio	ernational of neering do – engineer wironmen modern teo ronment a nd methoo on –noise)	evelopment and ring branches – tal science: the chnology and its nd development l of control (air – economics of		
Lecture	2 hours / week	Laboratory	-	Tutorial	-		

<b>BAS026</b>	Technical English Language 1				6	Contact Hours
Content						lyzing expository and essays that demonstrate
	0	1	•		•	y effective strategies of
	argument and	persuasion, a	and a comm	nand of	writter	English appropriate for
	college-level	work		<u> </u>		
Lecture	2 hours / weel	k Labor	atory -	Tuto	orial	1 hour / week
<b>BAS027</b>		Human	rights			2 Contact Hours
Content	الإقليمية القائمة القانونية لها الإسلامية مية والإقليمية - نسان) أجهزة	لدولية العالمية و لإنسان، والحماية سان في الشريعة قوق الإنسان العا رحماية حقوق لإ	، والمنظّمات ا ي من حقوق ا إلى حقوق الإند ادر الدولية لحا مية القائمة علم	الإنسان: المصر : لإضافة إ ان المصا	مة بحقوق ب الدستور الدولي، با وق الإنسا سان الأجه	الإلمام بأهمية حقوق الإنسان وا وأحكام الاتفاقيات الدولية الخاص على حماية تلك الحقوق، وموقف على الصعيد الوطني والصعيد ا الأصول التاريخية الفلسفية لحق المصادر الوطنية – لحقوق الإنب الأمم المتحدة (الحماية - الوطنيا لبعض طوائف حقوق الإنسان.
Lecture	2 hours / week	Laboratory	-	Т	utorial	-

Level: 1 Semester: 1



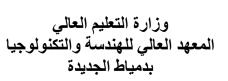




<b>BAS111</b>	Mathematics 3	4 Contact Hours
Content	<b>Partial differentiation applications</b> : maximum an more than one variable – directional analysis - the effects - the multi integrations and its applications orthogonal axis) – Gauss- Stokes theory - the endle expansion – basic concepts for the convergence and <b>Ordinary differential equations</b> : The first order (th be separated, homogeneous, exact and linear) - the equations from the second order and higher order variable coefficients), systems from the ordinary of Laplace transfer and its applications in the solution of	directional differential s (the curved and the ess series and function divergence. ne equations which can e ordinary differential rs (with constant and differential equations-
Lecture	2 hours / week Laboratory - Tutorial	2hours / week.

<b>BAS112</b>	Electrical Engineering Fundamentals5 Contact Hours
Content	Direct Current - Theory of electric circuits- Delta and Star connections - Sine A.C and D.C circuits - Time vectors diagram- Electric power and power factor in A.C circuits - 3-Phase current - Electric machines - D.C machines – Transformers - Induction and synchronous machines - Fractional power machines. Basic concepts of programming: problem analysis and developing the programs charts – structured programming with one programming language - form of the program - repetition - branching - matrix – processes and functions – registers - pointers - connected lists - self repetition - the return. Concepts of object-Oriented programming: Classes, inheritance and message passing, fundamentals of Java programming language and its syntax - major class libraries in Java - Java applets - Graphic User Interface programming – practice on Java programming language.
Lecture	3 hours / week Laboratory - Tutorial 2 hours / week
<b>BAS113</b>	Engineering Thermodynamics 5 Contacts Hours
Content	Fundamental concepts - Properties of a pure substance – Equation of state - thermodynamic systems - Work and heat - First law of thermodynamics; Applications to Systems and Control Volumes - Second Law of Thermodynamics; Principle of Carnot cycles; Heat engines, Refrigerators and heat pumps - Principle of the increase of entropy - Applications to systems and control volumes - Irreversibility and availability - Power and refrigeration cycles.
Lecture	3 hours / week Laboratory - Tutorial 2 hours/ week.







Content	Fundamental conc	Fundamental concepts - Properties of a pure substance – Equation of state						
	- thermodynamic s	- thermodynamic systems - Work and heat - First law of thermodynamics;						
	Applications to Systems and Control Volumes - Second Law of							
	Thermodynamics; Principle of Carnot cycles; Heat engines, Refrigerators							
	and heat pumps -	and heat pumps - Principle of the increase of entropy - Applications to						
	systems and control	systems and control volumes - Irreversibility and availability - Power and						
	refrigeration cycles.							
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours/ week.			

<b>CIE111</b>	Struct	tures Analysi	5 C	ontacts Hours		
Content	Basic concepts in structural analysis - Loads and reactions - Statically determinate beams - Statically determinate rigid frames - Statically determinate arches -Statically determinate trusses - Influence lines for statically determinate structures.					
Lecture	3 hours / week	Laboratory	-	Tutorial	2 hours / week.	

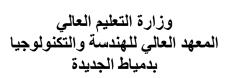
<b>CIE112</b>	Civil Engir	4 (	Contact Hours			
Content	Introduction to civil engineering drawings: Irrigation works (earth works, crossing of roads, Retaining walls; Brick – plain concrete – Reinforced concrete – Bridges – Culverts – Syphons – Aqueducts – Weirs – Regulators –Escapes)					
Lecture	1 hours / week	Laboratory	-	Tutorial	4 hours / week.	

# Level: 1 Semester: 2

<b>BAS121</b>	Μ	Mathematics 4 4 Contact Hours						
Content	Fourier's integrati solving the part Functions with co values functions	ions – solutions ial differential omplex variables - the analytical Taylor and Loran	of equ – c	the different ations usin complex qua nctions and	tions and Euler's laws – ial equations by series - g variables separation. ntities algebra– multiple Koshi's theorem - the os, unique points and the			
Lecture	2 hours / week	Laboratory	-	Tutorial	2hours /week.			

<b>BAS122</b>	<b>Technical Report Writing</b>	4 Contact Hours
Content	Writing the scientific reports by English lang report preparation - types of reports – formatti figures and shapes – importing text – chart dra for the pictures and documents – the border and	ng the reports – skills of wings – optical scanning







	reports. Saving and indexing the reports – searching for text – coping and safety of information – using the different computer programs					
	packages for writing and demonstrating the reports.					
Lecture	2 hours / week	Laboratory	2	Tutorial	-	

BAS123	Introductions to Information Technology 4 Contact Hour						
Content	Introduction to the design and use of computer-based information systems - Software and hardware used in information systems - information requirements - Communication systems – Networking - The internet; the foundations, resources and uses of the internet, emphasizing practical skills for finding, reading and authorizing materials - Fundamentals of computer communication networks – Introduction to computer networking elements; communications architectures and protocols, HTML principles and applications - Case studies.						
Lecture	2 hours / week Laboratory - Tutorial 2 hours / week						

BAS124	Stren	ngth of Ma	4 Con	tact Hours		
Content	Simple states of stress and strain -Torsion stresses - Bending and shearing stresses in beams - Compound stresses - Analysis of plane stress - Combined stresses - Analysis of thin-walled pressure vessels - Deflection of beams.					
Lecture	2 hours / week	Laboratory	1 hours /week.	Tutorial	1 hours /week.	

CIE121	Struct	ures Analysis 2		5 Co	ntacts Hours	
Content	Basic concepts in structure mechanics - Normal Stresses - Shear Stresses - Combined and Principal Stresses - Elastic deformations of statically determined structures - Statically indeterminate structures using the three moments equation.					
Lecture	3 hours / week	Laboratory	-	Tutorial	2 hours / week.	
<b>CIE122</b>	Civil Engi	neering Drawir	ng 2	4 Co	ontact Hours	
Content	Civil Engineering Drawing 24 Contact HoursReinforced concrete works (Slabs – Beams – Columns – Foundations).Steel works (Beams and columns sections – compound sections – Beam connections – Beams and columns connections – column bases – trusses). AutoCAD Fundamentals of civil engineering drafting by way of computer aided drawing (CAD) software. Basic features and capabilities of CAD software and drafting fundamentals including orthographic projection, and, part dimensioning in 2dimensional drawings.					
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.	





### Level: 2 Semester: 1

<b>BAS211</b>	Engineering Probability and Statistics 4 Contacts Hours					
Content	Statistics in engi	neering. Descri	ptiv	e Statistics	robability distributions. Sampling distributions. sting. Simple regression.	
Lecture	2 hours / week	Laboratory	I	Tutorial	2hours / week.	

BAS212	Fluid Mechanics	4 Cont	acts Hours
Content	Fluid properties, fluid statics, kinemati energy and momentum equations, dimer turbulent flow and its applications, introduction to compressible flow, a fluidization. Laboratory course in experiments on venture-meter, friction pressure, flow measuring apparatus characteristics) and losses in piping syste	sional analysis, orces on imm plications to Fluid Mecha losses in pip , multi-pump	laminar flow, hersed bodies, filtration and nics includes bes, center of
Lecture	2 hours / week Laboratory 1 hours / we	ek Tutorial	1hours /week

BAS213	Engineering Economy 3 Contacts Hours							
Content	applied to the ev private and pub time value of n evaluating the v relation to the economic equiv economy. Econ	valuation of capit lic sectors of our money by showin worth of products ir cost. Econom valence, comparis	al invest econoring the , system nic and son of on in d	stment alter my. Attent concepts a ns, structur l cost con alternatives	ring economics as natives in both the ion is given to the and techniques for es, and services in cepts: calculating s and replacement operations. Cost			
Lecture	2 hours / week	Laboratory	-	Tutorial	1hours / week			

BAS214	<b>Computer Programming</b>	<b>4</b> Contacts Hours
Content	Basic concepts of programming: problem a programs charts – structured programming language -form of the program - repetition processes and functions - registers - pointer repetition - the return. Concepts of object-O Classes, inheritance and message passing, f programming language and its syntax – ma	with one programming - branching - matrix – rs - connected lists - self Driented programming: Fundamentals of Java





	Java applets - Graphic User Interface programming -practice on Java					
	programming language.					
Lecture	2 hours /week	Laboratory	2 hours / week.	Tutorial	-	

<b>CIE211</b>	Structures Analysis 3				4 0	Contacts Hours	
Content	Statically Indeterminate Structures using force method - Slope Deflection						
	Method - Mor	Method - Moment Distribution Method - Introduction to Stiffness					
	Method.						
Lecture	2 hours / week	Laboratory	-	Tutor	rial	2hours / week	

<b>CIE212</b>	Properties and Strength of Concrete Materials 4 Contact Hours						
Content	concrete worka affecting conc durability of co properties of 1	bility tests and rete strength oncrete, mix de pituminous bin ctures. Manufa	l factors affecti in tension, c esign. Manufact iders and mixt cture of steel, co	ng the wor compressio ure of bitu tures, desi	ng of aggregates, rkability, factors n and flexure, uminous binders, gn and uses of and structure of		
Lecture	2 hours / week	Laboratory	1 hours / week	Tutorial	1 hours / week.		

<b>CIE213</b>	Surveying 1	4 Contacts Hours
Content	Introduction to surveying, Mapping Using Different Types of Scales, Compass Su Computations Area and volume Determination. method of calculation, Vertical section: Pro Contouring earth work. Theodolite: temporary a of theodolite, measuring of horizontal and v measuring horizontal and vertical angles. Tache and Tangential method, Substance bar. observations, link traverse.	urveying and Traverse Leveling: Type of levels, file and Cross sections, and permanent adjustment vertical angles, errors in ometric surveying: Stadia
Lecture	2 hours / week Laboratory 1 hours / week	Tutorial 1 hours / week

Level: 2 Semester: 2

<b>BAS221</b>	Numerical	<b>4 Contacts Hours</b>			
Content		nd integration - C	urve	e fitting and in	- Numerical nterpolation - Numerical Eigen value problems.
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours /week.





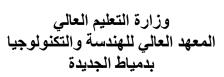
CIE221	Hydro		4 Contacts Hours			
Content	EngineeringHoursHydrology: Hydrologic cycle; Precipitation (types of precipitation – measurements of precipitation – estimates of missing data – double mass curve– mean areal depth of precipitation). Hydrologic losses (evaporation -evapotranspiration – interception –infiltration). 					
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week	

<b>CIE222</b>	Reinforced Concrete 1				tacts Hours
Content	Introduction to rei subjected to mom Shear in beams - D in slabs and beams	ents - Bond le Design of one w	ngth betw	een concret	e and steel bars -
Lecture	4 hours / week	Laboratory	-	Tutorial	2 hours / week.

<b>CIE223</b>	S	urveying 2		4 Conta	acts Hours
Content	errors and err transformation Modern metho	or analysis s. Coordinate ds for distanc (EDM) and	of surveying computations: e measurement Total Station.	measuremen Intersection s: Electroma Introductio	ion to theory of nts. Coordinate n, and resection. Ignetic Distance on to Geodesy.
Lecture	2 hours / week	Laboratory	1 hours / week	. Tutorial	1 hours / week.

<b>CIE224</b>	Traffic and Transportation Engineering	4 Contacts Hours
Content	Principles of traffic engineering. Road-user and veh Travel time, speed and volume studies. Highway ca parking and accident studies. Traffic control devices Grade-separations. Cross-section elements, sight distances, and horizor alignments. Principles of transportation planning. T	pacity. Pedestrian, s. Intersections and ntal and vertical







	systems planning and demand analysis. The 3-steps model of urban transportation planning.					
Lecture	2 hours / week Laboratory - Tutorial 2 hours / week.					

<b>CIE225</b>	Principles of Building Construction 4 Contacts 1						
Content	Building construction techniques; conventional methods, construction automation, Prefabricated methods. Architecture drawings and details, steps of the construction of a building, foundations, staircases, roofs, walls, paint, floorings, electrical and plumbing services, principles of architecture – theories – architecture panels details – basic architecture principles (utility – service – ventilation – properties).						
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.		

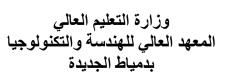
<b>CIE226</b>	Training 1				
Content	Students should spend 4 weeks in field training, after completing the Second level, in any Engineering Institution or Engineering Firms. Students should demonstrate the professional and practical skills they acquired during discussion with their assigned tutors.				
Lecture	-	Field	35 hours / week	Tutorial	-

### Level: 3 Semester: 1

CIE311	Reinforced Concrete 2				<b>Contacts Hours</b>
Content	Design of hollow block slabs - Design of sections subjected to torsion - Design of flat slabs - Design of paneled beam slabs - Design of stairs.				
Lecture	4 hours / week	Laboratory	-	Tutoria	2 hours / week.

<b>CIE312</b>	Geology and Soil Mechanics 1 4 Contacts					
Content	construction, n of geological for Soil Formation of Soil, Classif properties; per Shear strength,	ninerals and roc eatures on engi , Weight–Volu ication of Soil, neability, seep Various labora	ses for geological eks types. Structu neering works. S me Relationships Soil Compaction age, Stress Distri atory experiments of soil mechanics	re geolog oil Physic s, Plasticit h. Soil Me bution, Co s are perfo	y and influence al properties; y and Structure chanical onsolidation,	
Lecture	2 hours / week	Laboratory	1 hours / week	Tutorial	1 hours / week	







<b>CIE313</b>	Open Channel Hydraulics 4 Contacts Hou					
Content	Basic concepts (section properties – classificat curvilinear flow – Saint Venant equations – ver- velocity coefficients – boundary layer). The en- energy and specific discharge – the transition phenomena – control section – discharge meas principles (hydraulic jump –momentum functi- surge in open channel). Flow resistance (shear perimeter – resistance equations – channels wi Gradually varied flow (types of slopes – dynar classification of flow profile – methods of com channel for uniform flow (erodible and non-er- hydraulic sections – maximum permissible ver-	elocity distribution – nergy principles (specific problem – choking suring). The momentum ton – jump classification – stress on wetted ith composite roughness). mic equation of G.V.F – nputations).Design of rodible channels – best				
Lecture	2 hours / week Laboratory 1 hours / week.	Tutorial 1 hours / week.				

<b>CIE314</b>	Steel Str	6 Co	ntacts Hours		
Content	Beam-columns; E	ructures; Tension a Built-up members; design workshops.		-	
Lecture	4 hours / week	Laboratory	-	Tutorial	2 hours / week.

<b>CIE315</b>	Highways and	Airport Engin	eering	4 Co	ntacts Hours
Content	characterization. S and asphalt mixtur and Rigid paveme Engineering. Airc	zation of subgrade s Sources of asphalt, or res. Design of aspha ents. Pavement drain raft characteristics. nponents, and capa	characte alt mixt nage. In Air tra	eristics of a ures. Desig troduction ffic control	asphalt binder gn of Flexible to Airport l. Airport
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.

<b>CIE316</b>	Water Supply Engineering				ontacts Hours
Content	groundwater colle distribution Work sedimentation, filt	supply - drinking w cting; Design of Co s; screening coagul tration, disinfection ound and elevated ta ater systems.	ollection ation a , softer	on, purificat and floccula ning remova	ion and tion, al, taste and odor
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.





### Level: 3 Semester: 2

BAS321	Project Management and Control 4 Contacts Ho						
Content	Introduction to Project Management – Project Planning and Scheduling –Network based Scheduling – Critical Path Method (CPM) – Program Evaluation & Review Technique (PERT) – Probability Aspects of Project Completion Time – Project Cost Control - Resource Allocation – For casting Funds Requirements.						
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.		

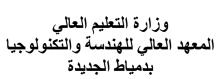
<b>CIE321</b>	Reinforced Concrete 3				<b>5</b> C	ontacts Hours
Content	Design of halls with beam girders - Design of frames - Design of arches - Design of trusses and Vierendeel girder - Design of saw tooth roofs.					
Lecture	3 hours / week	Laboratory	-	Tutor	ial	2 hours / week.

<b>CIE322</b>	Soil Mech	anics and F	oundati	ion	<b>4</b> C	ontacts Hours
Content	Stresses in soil a Consolidation of and Stability of S Foundation Desi Strip, Isolated, C	f soil - Ground Slopes - Bearin gn; Introductic	Improven g Capacion to Four	ment -Lat ty - Subs ndation E	teral E oil Inv Engine	Earth Pressure vestigation. eering, Design of
Lecture	2 hours / week	Laboratory	-	Tutor	ial	2 hours / week.

<b>CIE323</b>	Computer A	pplications i	n civil I	Engineering	4 Contacts Hours
Content	Use the compute beams, columns and in the analys problems. Comp channels. Pipe n water and waster theoretical backg implemented in problems. Exten	and slabs; stee sis of water res putation of unif etwork design. water treatmen ground reviewe computer prog	l beams, ources an orm and Sewer sy t facilitie ed and dis rams disc	columns and be ad environments gradually varied ystem modeling s for each area, screte modeling cussed and appl	eam-columns – al engineering d flows in open g. Design of the necessary methods as
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.

<b>CIE324</b>	Steel Structures Design 2	<b>5</b> Contacts Hours
Content	Steel frames design – riveted and bolted connections – welded constructions – b trusses – rigid frames design.	6 6







Lecture	3 hours / week	Laboratory	-	Tutorial	2 hours / week.

<b>CIE325</b>	Training 2						
Content	Students should spend 6 weeks in field training, after completing the Third level, in any Engineering Institution or Engineering Firms. They should prepare a technical report implying a full description of the processes they joined for training. Students should demonstrate the professional and practical skills they acquired during discussion of report with their assigned tutors.						
Lecture	-	Field	35 hou	rs / week	Tutorial	-	
<b>CIE326</b>	Wate	r and w	astewater	treatment	t 4 Co	ntacts Hours	
Content	wastewa discharge Collectio	Introduction to sewerage works. Characteristics and sources of wastewater; domestic, industrial, rain and infiltration. Calculation of discharges. Design of sewer pipes and manholes. Pump stations. Collection works of sewerage system. Primary and secondary treatment. Sludge treatment and disposal.					
Lecture	2 hours	week	Laboratory	-	Tutorial	2 hours / week.	

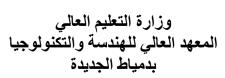
#### Level: 4 Semester: 1

<b>CIE411</b>	Foundation Engineering 1				ontacts Hours		
Content	Introduction to Deep foundations; Pile types, piles classifications, Design of pile foundation, pile loading and pile capacity, Geotechnical pile capacity, Lateral load capacity of piles, pile settlement, pile loading tests, Design of pile cap.						
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.		

<b>CIE412</b>	Inland Navigation and Harbor Engineering 4 Contacts Hour						
Content	Kinds of Harbors, Hydraulic Model S Guiding Signals, B Navigation.	tudies, Planning	of H	arbors, Lig	ht Houses and		
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.		

<b>CIE413</b>	Design of Irrigation Works	<b>4</b> Contacts Hours			
Content	Introduction to irrigation works, design of crossing structures (Culverts,				
content	bridges, syphon, aqueducts). Retaining walls (C	Bravity, cantilever, and			







	counterfort). Design of floor for heading up works and stilling basic brief idea on navigation structures (locks).				
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.

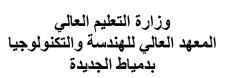
<b>CIE414</b>	Project 1 * 5 Contacts Hou					
Content	associated with a la measures students' throughout their stu manner, that reflect	Idress and man rge-scale desig knowledge, sk idy in the facul s identity and c complete set of letailed report of	age architectura n project. The p ills, and collect ty and departme creativity in all of appropriately of the project's	al and technical issues project examines and ive outputs gained ent in a combined its preliminary and presented drawings, attributable studies		
Lecture	3 hours / week	Laboratory	2 hours / weel	k. Tutorial -		

CIE415A	Bridg	Bridge Engineering					
Content	Different types of bridges – different methods in bridges construction – load calculations and its different effects – methods of bridges design using the standard specifications codes – using commercial computer packages for bridge design. Planning of bridge projects; Design, analysis and construction of various types of bridges including						
	reinforced and pre stressed concrete bridges, steel bridges, composite bridges, and cable-supported bridges.						
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.		

CIE415B	Coastal Engineering Fundamentals 4 Contacts Hou						
Content	Effect of waves on coastal structures, design of seawalls and breakwaters, jetties, harbors, ship channels and pipelines, intentional and accidental discharge of pollutants, diffusion and spreading, oil spill containment and collection, wave theory and applications to engineering problems, analysis of wave data.						
Lecture	2 hours / week	Laboratory	-	Tutoria	al	2 hours / week.	

CIE415C	Concrete Structures Technology	<b>4</b> Contacts Hours
Content	Concrete mixing method, mixing time, delivery Concrete casting method and precautions. Concrete Concrete surface finishing. Concrete curing m precautions. Casting concrete in hot weather at	rete compaction method. nethod, curing time and







	compact concrete manufacturing, pumping, casting and testing. Hot						
	weather concrete. Special type of concrete. Quality control.						
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.		

CIE415D	Construct	4 Co	ontacts Hours		
Content	Construction con Organization and contracts, bonds, in takeoff and prici excavation and con and cost control. S estimate.	administration nsurance. Plannin ng, labor and ncrete, proposal	industry ng, estimati equipmen preparation	structung, and t estim , schedu	re, construction control, quantity nates, estimating uling, accounting
Lecture	2 hours / week	Laboratory	- Tu	torial	2 hours / week.

<b>CIE415E</b>	Cost Analysis f	ts 4 Co	ontacts Hours				
Content	Direct costs – indirect costs – collective systems - comparisons between projects – fundamentals of cost analysis for wood, steel and concrete buildings– preparing project and report writing – case study.						
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.		

CIE415F	Highway ar	d Airport En	igineeri	ng	4 Contacts Hours		
Content	Application of soil classification methods, material characterization, sub-grade and sub-base stabilization, material variability and quality control, pavement evaluation and rehabilitation, highway construction.						
Lecture	2 hours / week	Laboratory	-	Tutoria	al 2 hours / week.		

CIE415G	Modern Structure Materials				Contacts Hours
Content	concrete. Ultra-	high-performance cementing mater	e conc	rete. Light	Ultra-high strength weight concrete. naterials and their
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.

CIE 415H	Planning of Buildings Maintenance and	4 Contacts
CIE415H	Protection	Hours





Content	problem. Types of protection mate	of cracks and dam	ages. l d tecl	Non-destruct hniques of	planning, cost and ive test. Repairs and repair. Isolation of 'echnical reports
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.

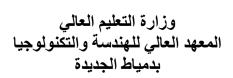
CIE415I	Reliability of Structures4 Contacts						
Content	Fundamental concepts related to structural reliability, safety measures, load models, resistance models, and system reliability. Optimum safety levels and optimization of design codes.						
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.		

CIE415J	Environme	ental Pollution	4 (	<b>Contacts Hours</b>			
Content	Quality factors for environmental control. Population and resource use. Air pollution, water pollution, land pollution. Solid waste management. Thermal pollution, noise pollution. Radiation. Energy and the environment. Prediction and assessment of environmental impact. Problems of developing nations. Case studies						
Lecture	2 hours / week	Laboratory	-	Tutor	ial	2 hours / week.	

CIE416A	Design of Earthquake Structures				ontacts Hours		
	Earthquakes: causes, seismic waves, scales, equation of motion fo						
		single degree of freedom and multi-degree of freedom systems –					
Content	Structures behavi	or under random	forces - S	Spectral ana	lysis depending		
	on soil conditions	s – Modal analysi	s for mult	i-strong but	ildings – design		
	principles for earthquake structures according to the Egyptian code.						
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.		
CIE416B	Design of	Marine Platfo	orms	4 Co	ntacts Hours		
Contont	Marine platform (	definition – types	), loads at	ffecting the	marine platforms		
Content	- tide and wind forces - design of fixed marine platforms.						
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.		

CIE416D	Engineering Project Evaluation	<b>4</b> Contacts Hours
Content	Fundamentals of project appraisal and feasibility engineering projects; Economic analysis of civil	







	Introduction to environmental impact assessment and social impact					
	assessment; Case studies on civil engineering project appraisal.					
Lecture	2 hours / week Laboratory - Tutorial 2 hours / week					

CIE416E	Fiber Reinforced Cement Composites 4 Contacts H						
Content	Fiber-reinforcement of cement-based matrices, continuous and discontinuous fibers, and meshes. Fiber-reinforced concrete and Ferro- cement. Laminated cementations composites. Behavior and mechanical properties. Mechanics of fiber reinforcement. Constitutive models. High-strength, high-performance fiber composites. Hybrid and smart composites. Lectures, projects and laboratory.						
Lecture	2 hours / week	Laboratory	-	Tutor	rial	2 hours / week.	

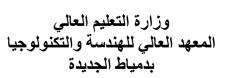
CIE416F	Project Decision Analysis 4 Contacts H					
Content	Quantitative methods of decision-making. Important mathematical models useful in decision processes. Model-structure assumptions, limitations and methods for use. Concepts and models of support systems for management decision problems.					
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.	

CIE416G	<b>Project Financial Management</b>				<b>4</b> Contacts Hours
Content	Cash flow and its analysis -project budget - project financial methods - risk and cost control - financial path for project - time value - profit rate - inflation effects.				
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.

CIE416H	<b>Risk Management and Constructions Safety</b> 4 Contacts Ho				
Content	Principles and practice regarding safety in building. Accidental prevention and safety control. Fire control. Fire resistance of building materials, safety provisions for fire and other hazards in building. Safety standards and codes. Governmental regulations and inspection procedures.				
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.

CIE416I Air Conditioning Systems for Building	4 Contacts Hours
---	------------------







Content	cycles. Water chi	iller systems. A ion. Installation	ir hanc	lling systen	ation. Refrigeration n. Cooling towers. naintenance of air
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.

CIE416J	<b>Construction</b>	Estimating an	d Tre	nding	4 Contacts Hours
Content	Principles of construction cost estimating; Quantity takeoff; Methods of detailed cost estimating; Analysis of labor and equipment costs; Construction tendering process; Bidding and contracting systems for construction projects; Laws and regulations related to the construction industry.				
Lecture	2 hours / week	Laboratory	-	Tutori	ial 2 hours / week.

# Level: 4 Semester: 2

<b>BAS421</b>	research a	nd analytical	skills	<b>2</b> C	ontacts Hours
Content	into account tech Phases of problem it, Solution plan, of creativity in Opportunities, an Cost - Benefit and - work in analyzi the relevant data, search methods an connectives (e.g.	nical, economic n solving (Under Implementation the analysis d Threats) analy alysis and Risk a ng large enginee information, and d how to formul AND, OR, NOT g search results, c	e, environme standing the plan, Evalua SWOT sis for differ nalysis. Role ring problem knowledge. ate search en ). Phrase, titl hoosing the	ental, an problem tion, an Strengt ent alte e of coo ns. Impo Search agine qu e, doma appropri	g problems taking nd ethical issues. n and formulating d Revision). Role hs, Weaknesses, rnatives. Detailed peration and team ortance of finding Skills: Basic Web eries using logical in, URL, and link iate search engine. t Web sites.
Lecture	2 hours / week	Laboratory	-   Tu	torial	-
<b>BAS422</b>	Environm	ental Manage	ement	<b>3</b> C	ontacts Hours
Content	The importance of studying environmental science – modern technology and its effect on the environment – quality of the environment and development elements – sources of environmental pollution and method of control (air pollution – water pollution – solid wastes pollution – noise) – economics of environmental pollution control – legislations for the environment protection.				
Lecture	1 hours / week	Laboratory		torial	2 hours / week





Content	عها – الأنواع المختلفة باته وحقوقه التي – المهندس .( وحتى ماده .( 667 ) إلحها وشرحها نظريا	ـ عقود التشييد و أنواء صر المهندس بمسئولي د) المالك – المقاول - لة من ماده ( 646 ) ر للعمل الهندسي ولو	د التشييد ـ مقاولة (تبو للث التشيي مقد المقاو تي تتعرض	ية في مجال عقود لالتزام في عقد الم علاقته بأطراف مذ المدني الخاصنة ب بن والتشريعات الن	التشريعات والقوانين في التشريد المفاهيم القانون لعقود المقاولة أنواع ا ينظمها القانون وتحدد ع استعراض بنود القانون واعطاء بعض الأمثلة ال والمزايدات.
Lecture	2 hours / week	Laboratory	-	Tutorial	1 hours / week.

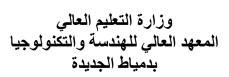
<b>CIE422</b>	Reinf	4 Co	ontacts Hours		
Content	Design of water structures - Design of concrete sections subjected to moments without cracking - Design of rectangular tanks - Design of circular tanks - Design of elevated tanks				
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.

<b>CIE423</b>	]	Project 2 *	6 Con	tacts Hours	
Content	Continuation and conclusion of the investigations on the civil problems of Project 1; written reports and team presentations are required.				
Lecture	2 hours / week	Laboratory	-	Tutorial	4 hours / week.

CIE424A	Ground	lwater Hydrau	lics	4 Co	ntacts Hours
Content	porosity – rock a and intrinsic per (Darcy law– dire – seepage throug stratified media- of aquifers) . construction and (introduction – intrusion – mo	and water – degree meability). Groun ection of the hydr gh porous media - - steady and unstea Well design and 1 maintenance). S Ghyben-Herzberg	of satu dwater aulic gr - homo ady flow l const altwate g equat ter intr	ration – hydr movement ar adient – grou geneity and i v toward a we ruction (wel r intrusion in ion –formula	types of aquifers – aulic conductivity and well hydraulics andwater recharge isotropy – flow in ell in various types and design – well an coastal aquifers ation of saltwater ory of images –
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.

CIE424B	Pavement Design	<b>4 Contacts Hours</b>
Content	Characteristics of pavement loads, stress anal practices, construction, rehabilitation and main the design of rigid and Flexible pavements	intenance, optimization of







		dies, traffic del	ay, env	vironmental	eory, serviceability deterioration, and
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.

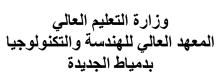
CIE424C	Pre-fabricated	s 4 Co	ontacts Hours			
Content	Prefabricated concrete performance – design of concrete supported to shear stress – design of Columbus – roofs and building frame – design					
	project using the computer – detailed report.					
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.	

CIE424D	Project I	Management	4 Cor	ntacts Hours	
Content	Construction Pro Planning and Sch Method for Repe "Cost Estimation Construction Proje	neduling Techni titive Units Proj – Cost Contro	ques: "N ects" – C ol" – Us	etworks – Cash Flow	Line of Balance – Cost Planning:
Lecture	2 hours / week	Laboratory	- "	Tutorial	2 hours / week.

CIE424E	Project Visibility Study	<b>4</b> Contacts Hours
Content	The importance of visibility study for th visibility study and the historical develop and its principles and forms – initial visi- environmental visibility studies - impor study - the important monetary sides in marketing sides - the exhibition of t parameters in it - the pricing policies - t the consumer and the competitive project visibility for the project - study of the methods of the visibility study.	be a series of the project essence ability studies and its elements - tant financial sides in visibility visibility study - the important the products and the effective he situation of the government, s - the engineering and technical
Lecture	2 hours / week Laboratory -	Tutorial2 hours / week.

CIE424F	Urban Transportation Planning	<b>4</b> Contacts Hours
Content	Land use-transportation interaction. The process planning, urban transport problems, goals, an information, survey design, travel demand foreca 2) trip distribution, 3) modal choice, 4) route ass of urban transport systems, transport system management, and control.	nd objectives, data and asting: 1) trip generation, ignment. The evaluation







Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.

CIE424G	Special Concrete Structures 1					contacts Hours	
Content	Introduction to tall building structures. Design criteria for tall building structures. Loading. Structural formation. Modeling for analysis. Braced frames. Rigid frames. Shear walls.						
Lecture	2 hours / week	Laboratory	-	Tutor	rial	2 hours / week.	

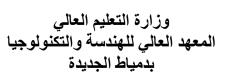
CIE424H	Foundation Engineering 24 Contacts					
Content	Soil Hydraulics; Introduction to soil hydraulics - hydraulic Conductivity determination - Flow through porous media - One dimensional flow two dimensional flows. Deep foundation; Sheet pile design - Determination of pile capacity - Design of pile cap - Retaining walls.					
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.	

CIE424I	Productivity Enhancement Methods 4 Contacts H					
Content	Identification of bottlenecks; impact of human performance on productivity. Effect of the interaction between technological advances and human capabilities on performance and productivity. Cost reduction and productivity improvement programs.					
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.	

CHE424j	Quality Assurance				ontacts Hours
Content	Reliability of pa testing. Impact engineering fiel structural engin reliability on pr	of reliability or lds such as mec leering. Studies	n the de hanical	sign proc	ess in al and
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.

CIE425A	River Engineering				Contacts Hours		
Content	Classifications of rivers, data collection method; Velocity and flow rate measurement, design of hydraulic structures: dike, spillway, dam, gate, pumping station, sheet pile, Countermeasure on sediment control: corrosion, deposition, scour, bill of quantity and cost estimation, operation and maintenance.						
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.		







CIE425B	Hydraulics Engineering 4 Contacts Ho					
Content	Basic governing application) Flow hydraulic coeffici filling and emptyi different types of equation). Steady hydraulic analysis hammer – Euler e machinery (design	through orifices ents – flow throu ng tanks). Flow weirs). Momentu y flow in pipel s of pipe networ quation – continu	s (types o gh differe over wein m equatio ines (bas k). Unste aity equat	of orifices - ent types of rs (types of on (applicat ics of flow ady flow in	- venacontracta – orifices – time for weirs – flow over ion of momentum v in pipelines – n pipelines (water	
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.	

CIE425C	Traffic Control System 4 Contacts Hour						
Content	including both computer traffic methods for signetworks. Traffic	off-line signal c-responsive c gnal intersecti c control syste	optimizatio ontrol conc ons, arteria m evaluatio	on techniqu epts. Contr l systems n technique	ystems strategies les and real-time rol concepts and and area traffic s using Measures ial, and networks.		
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.		

CIE425D	Tunneling and Underground Excavation         4 Contacts Hours								
Content	Introduction to the computer softwar and excavations orientation of an rock mass classifier and blast method problems of urbar on liners, face st EPB and slurry se excavation of tur procedures based tunnel boring mar soil linear interace	unnels –numer ire packages an in hard rock - l opening, elast fication, suppo d, NATM tunned an tunneling, d ability, methods shield methods anels and deep d on behavioral achines, shield ction. Deep exo	ical met ad its ap basic ro ic defor rt desig eling me eformat ls of sof . Select vertica l charac ed and c cavation	thods in tunner plications in t ck mechanics mation and th n and ground ethod. Tunnel ion and surfa ion and surfa ft ground tunn ion of method l sided openin teristics of so drill-and-blast n procedures to ation and dev	el constructions- tunnels. Tunneling s, shape, size and ne Kirsch solution, reaction curve, drill ling in soft ground - ce settlement, load neling including ls of attack for ngs. Tunneling oil and rock, study of coperations, linings, related to support of vatering.				
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.				

CIE425E	Special Concrete Structures 2	<b>4</b> Contacts Hours





Content		simply supported	composi	te beams –	als of composite continuous beams osite slabs.
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.

CIE425F	Railwa	4 Co	ontacts Hours			
Content	Engineering principles for railways planning – railways components and specifications – design of different parts of railways – types of stations – types of signals – maintenance – planning of the railway's lines – transportation economy –management and insurance.					
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.	

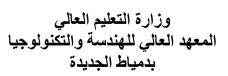
CIE425G	Reinfor	4 (	<b>Contacts Hours</b>			
Content	Design of shell structures - Design of Pre-stressed reinforced concrete					
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week.	

CIE425H	<b>Design of Lighting Systems for Buildings</b> 4 Contacts Hours							
Content	artificial lighting, of luminaries, pola lighting design sta	point, line and a ar curves, design andard, luminar ent, hybrid lighti	rea lig metho les hea	ht sources, t ds and calcu at recovery s	gs which includes ypes and properties lations, glare index, system and lighting buildings, effect of			
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week			

<b>CIE425I</b>	Soi	l Dynamics	<b>4</b> C	ontacts Hours			
	Introduction to Soil Dynamics: Fundamentals of vibrations - Soil						
Content	dynamic properti	es – Soil liquef	iction –	Propagation	of waves – Analysis		
	of seismic respor	nse– Soil –struc	ture dyn	amic interac	ction		
Lecture	2 hours / week	2 hours / week Laboratory - Tutorial 2 hours / week					
CIE425J	Introduction to Earthquake Engineering 4 Contacts Hours						
		Introduction to Earthquake Engineering: Properties of earth motion – Tectonic Plates – Seismic waves – Faults – Magnitude scale Intensity					
	Tectonic Plates -						
Content	scale – Measuring earthquake – Earthquake risk – seismic maps –						
	International codes provisions for seismic design of structures included						
	Egyptian code of	practice for Sc	il Mech	anics and Fo	oundation Design.		
Lecture	2 hours / week	Laboratory	-	Tutorial	2 hours / week		

Appendix 1: Matrix of Courses Vs Competencies and aims for Civil engineering program.







Appendix 2: Matrix of Competencies Vs aims for Civil engineering program.
Appendix 3: Matrix of attributes Vs program aims for Civil engineering program.
Appendix 4: Matrix of mission and goals of the institute Vs competencies for Civil engineering program.

- Appendix 5: Matrix of mission and goals of the institute Vs aims for Civil engineering program.
- Appendix 6: Matrix of Competencies Vs Teaching and Learning Methods.

Appendix 7: Matrix of Methods and rules for student evaluation Vs Teaching and Learning Methods.

**Program Coordinator:** Prof. Mohamed Elkiki **Head of Department:** Prof. Mohamed Elkiki **Date of Approval:** 10/2023