



High Institute of Engineering and Technology

In New Damietta

Civil Engineering Department

Undergraduate Program Report



Civil Engineering Department Undergraduate Program Report

A. BASIC INFORMATION

Program Title	Civil Engineering
Field of the Program	Civil Engineering
Number of Study Years	Five levels
Number of Credit Hours	180 hours
System of Exam Committee	Semester Evaluation System
System of External Exam Committee	Not applied
Department offering the program	Civil Engineering
Date of curriculum approval	2007
Date of Program Report Approval	30/8/2017

B. SPECIALIZED INFORMATION

B.1. Statistics

B.1.1. Program Statistics

Element	Number	Percent
Students <i>Enrolled</i> in the program (4 levels)	1143	-----
Students <i>Completing</i> the program		
First semester	13	
Second semester	328	
Summer semester	66	
Students <i>Passed</i> the program		
First semester	11	84.62%
Second semester	270	82.32%
Summer semester	53	80.3%
Students <i>Excellent</i> graded		
First semester	0	----
Second semester	1	0.3%
Summer semester	0	-----
Students graded <i>Very Good</i>		
First semester	0	-----
Second semester	72	21.95%
Summer semester	0	-----
Students graded <i>Good</i>		
First semester	0	-----



Second semester	149	45.43%
Summer semester	20	30.3%
Students graded <i>Pass</i>		
First semester	11	84.62%
Second semester	48	14.63%
Summer semester	33	50%

B.1.2. Years' Statistics

Element	Number of Students			% Passed
	Enrolled	Completed	Passed	
Second level	176	176	160	70.17
Third level	226	226	197	78.5
Fourth level	253	253	234	70.27

B.2. Academic Reference Standards

- Academic standards of reference	NATIONAL ACADEMIC REFERENCE STANDARDS (NARS) FOR ENGINEERING
1- Aims	<p>The graduates of the civil program should be able to:</p> <ol style="list-style-type: none"> 1. Apply knowledge of mathematics, Science, engineering concepts, and construct structures to solve fundamental engineering problems for protection against dangers of unexpected natural events such as floods and storms. 2. Design a system for components, process, constraints, construct, and protect all types of excavations and tunneling systems for different purposes. 3. Design and conduct experiments as well as analyze and interpret data to Select and design adequate water control structures, irrigation, water networks, sewerage systems and pumping stations. 4. Use the techniques, skills, and codes of practice effectively and professionally in all civil engineering



	<p>disciplines.</p> <p>5. Consider the impacts of engineering solutions on society & environment to select appropriate building materials from the perspective of strength, durability, suitability of use to location, temperature, weather conditions and impacts of seawater and environment.</p> <p>6. Demonstrate knowledge of contemporary engineering issues by displaying professional and ethical responsibilities; and contextual understanding</p> <p>7. Engage in self- and life- long learning.</p> <p>8. Act professionally in design and supervision of civil engineering disciplines</p> <p>9. Define and preserve properties (lands, real estates) of individuals, communities and institutions, through different surveying and GIS tools.</p>
<p>2- knowledge and understanding</p>	<p>The graduates of the Civil Engineering program should be able to demonstrate the knowledge and understanding of:</p> <p>A1. Define the concepts and theories of mathematics, Science necessary for engineering system analysis.</p> <p>A2. Identify the basics of information and communication technology (ICT).</p> <p>A3. List the material properties and their engineering materials related to the characteristics in engineering analysis.</p> <p>A4. State the principles of system design elements design, process and/or the including elements and processes. System related to disciplines.</p> <p>A5. Recognize methodologies of solving engineering problems, data collection problems and interpretation.</p> <p>A6. Identify quality assurance systems, codes of practice and standards, health and safety requirements and environmental issues.</p> <p>A7. Recognize business and management principles relevant to engineering</p> <p>A8. Observe the relevant current engineering technologies.</p> <p>A9. Identify humanitarian topics of interest and</p>



	<p>moral issues.</p> <p>A10. Write technical language and technical report writing.</p> <p>A11. Identify professional ethics and impacts engineering solutions on society and environment.</p> <p>A12. Define contemporary engineering topics in general.</p> <p>A13. Recognize the different engineering principles related to the design of reinforced concrete and metallic structures in addition to geo-technical and foundations, water projects, surveying, photogrammetry and sanitary engineering roadways and traffic systems.</p> <p>A14. Define the different structural and mechanical properties of building materials.</p> <p>A15. Recognize the main topics in construction management specially planning bidding and contracts.</p>
<p>3- B. Intellectual skills</p>	<p>Upon successful completion of CIE program, civil engineering students should be able to:</p> <p>B1. Select appropriate mathematical and computational methods for system modeling and analysis.</p> <p>B2. Think creatively and analytically to select the appropriate solutions for engineering problems and system design.</p> <p>B3. Combine, exchange different ideas, views, and knowledge from a range of sources to evaluate the characteristics and performance of components, systems and processes.</p> <p>B4. Investigate the failure of structural components, systems, and processes.</p> <p>B5. Solve engineering problems, often on the basis of limited and possibly contradicting information.</p> <p>B6. Select and appraise appropriate information and communication technology tools to a variety of engineering problems.</p>



	<p>B7. Judge engineering decisions considering balanced costs, benefits, safety, quality, reliability, and environmental impact.</p> <p>B8. Incorporate economic, societal, and environmental and risk management dimensions in design.</p> <p>B9. Analyze results of numerical models and judge their limitations.</p> <p>B10. Create systematic and methodic approaches when dealing with new and advancing technology.</p> <p>B11. Select the suitable building materials for different types of civil works in order to preserve safety and economy.</p> <p>B12. Select appropriate design processes for water control structures, irrigation and water networks, sewerage systems and pumping stations.</p> <p>B13. Analyze and select codes of practices in designing reinforced engineering concrete and metallic structures of all types. Determine the levels, types, and design systems of building foundations, tunnels and excavations.</p> <p>B14. Conduct suitable construction management techniques.</p> <p>B15. Assess and evaluate the used techniques and strategies adopted in the solving current engineering problems.</p>
<p>4- Professional skills</p>	<p>On successful completion of the program, the graduates of the Civil Engineering program should be able to:</p> <ul style="list-style-type: none"> C1. Apply knowledge of mathematics, Science, information technology, design, business context and engineering practice to solve engineering problems C2. Merge engineering knowledge and understanding to improve design, products and/or services. C3. Create and/or re-design a process, component or system, and carry out specialized engineering designs. C4. Practice the neatness and aesthetics in design and approach.



	<p>C5. Use computational facilities, measuring instruments, workshops and laboratories equipment to design experiments and collect, analyze and interpret</p> <p>C6. Use a wide range of analytical tools, techniques, equipment, and software packages pertaining to the discipline and develop required computer programs.</p> <p>C7. Apply numerical modeling methods to engineering problems.</p> <p>C8. Apply safe systems at work and observe the appropriate steps to manage risks.</p> <p>C9. Demonstrates basic organizational and project management skills.</p> <p>C10. Apply quality assurance procedures and follow codes and standards.</p> <p>C11. Exchange knowledge and skills to engineering community and industry</p> <p>C12. Prepare and present technical reports.</p> <p>C13. Use appropriate mathematical methods or IT tools.</p> <p>C14. Practice computer programming for the design and diagnostics of digital and analog communication, mobile communication, coding, and decoding systems.</p> <p>C15. Use relevant laboratory equipment and analyze the results correctly</p> <p>C16. Troubleshoot, maintain and repair almost all types of electronic systems using the standard tools.</p> <p>C17. Identify appropriate specifications for required devices.</p> <p>Use appropriate tools to measure system performance.</p>
<p>5- General skills</p>	<p>The graduates of the Civil Engineering program should be able to:</p> <p>D1. Collaborate effectively within multidisciplinary team.</p> <p>D2. Work in stressful environment and within constraints.</p> <p>D3. Communicate effectively.</p> <p>D4. Demonstrate efficient IT capabilities.</p> <p>D5. Lead and motivate individuals.</p> <p>D6. Effectively manage tasks, time, and resources.</p> <p>D7. Search for information and engage in life-long self-learning discipline</p> <p>D8. Acquire entrepreneurial skills</p>



	D9. Refer to relevant literatures.
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B.3. Regulatory and Administrative Constraints

Constraint	Intensity		
	High	Moderate	Low
Shortage of staff members		√	
Lack of communication with industry	√		
Lack of coordination between departments		√	
Lack of administrative coordination			√
Lack of administrative to departments coordination			√
Lack of coordination between management and departments		√	
Ineffective acceptance rules for the students		√	
Bad utilization of available facilities			√

B.4. Methods Used for Students Evaluation

No.	Evaluation Method	Time	Remarks of External
1	Written Examination	Midterm, Endterm	
2	Oral Examination	Endterm	
3	Semester Work	Reports, Quizes	
4	Final Term Examination	Endterm	

B.5. Educational Facilities, Methods, and Structure

Element	Appropriateness		
	High	Moderate	Low
Students/Staff Ratio		√	
Staff Specialization		√	
Staff Load		√	
Library		√	
Electronic Library		√	
Labs			√
Machinery Workshops		√	
Computers		√	
Auxiliary Educational Facilities		√	
Teaching Methods		√	
Workshops and Conferences			√
Internal Training Plans			√
External Training Plans			√
Program Structure		√	
Cooperation of Business Organizations			√



B.6. Quality and Development Management

Element	Effectiveness		
	High	Moderate	Low
Student Support System		√	
Follow up and Corrective System		√	
Periodic Review System		√	
Continuous Improvement System			√
Internal Review System		√	
External Review System	√		
Implementation of University Regulations and Rules		√	

B.7. Students' Suggestions

Suggestion	Implemented?	
	Yes	No
Using online course material.		√
Provide training on how to use a new teaching technology in their classes.	√	
Visiting the filed for more knowledge in the course		√
Designing a complete software by applications taught		√
Watch a real tenders papers from real projects		√
Use 3D models for irrigation works		√

B.8. Program Enhancement Suggestions

Suggested Enhancement	Necessity		
	High	Moderate	Low
Improve lecture notes	√		
Integrating work experiences with education.			√
Transplant And Assess Pedagogy Utilizing Such Technologies To Enhance Students' Learning.		√	

B.9. Comments from External Evaluators

No.	Comment
1	References Updating
2	No Clear aims for the courses
3	ILOs don't describe the aim of the courses

Coordinator: **Prof.**

Department Head: **Prof. Dr**