



High Institute of Engineering and Technology

In New Damietta

Communication and Electronics Engineering Department

Undergraduate Program Report



Communication and Electronics Engineering Department Undergraduate Program Report

A. BASIC INFORMATION

Program Title	Communication and Electronics Engineering
Field of the Program	Communication and Electronics 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	Communication and Electronics 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)	203	-----
Students <i>Completing</i> the program		
First semester	5	
Second semester	62	
Summer semester	8	
Students <i>Passed</i> the program		
First semester	4	80%
Second semester	57	91.94%
Summer semester	6	75%
Students <i>Excellent</i> graded		
First semester	0	----
Second semester	6	9.7%
Summer semester	0	-----
Students graded <i>Very Good</i>		
First semester	0	-----
Second semester	20	32.3%
Summer semester	0	-----
Students graded <i>Good</i>		
First semester	0	-----



Second semester	23	37.1%
Summer semester	1	12.5%
Students graded Pass		
First semester	4	80%
Second semester	8	12.9%
Summer semester	5	62.5%

B.1.2. Years' Statistics

Element	Number of Students			% Passed
	Enrolled	Completed	Passed	
Second level	30	30	23	76.7
Third level	43	43	36	83.7
Fourth level	33	33	31	93.9

B.2. Academic Reference Standards

- Academic standards of reference	Academic reference standards of electronics and communications engineering program (ARS) which is approved by the national authority for quality assurance and accreditation of education NAQAAE.
1- Aims	<p>The graduates of the communication and electronic program should be able to:</p> <ol style="list-style-type: none"> 1. Apply knowledge of mathematics, science and engineering concepts to the solution of engineering problems: i.e. on society and environment. 2. Identify, formulate and solve fundamental engineering problems by engage in self -and lifelong learning. 3. Manipulate with the electronic circuits, all the way from the discrete components level, circuits' analysis and design, to the troubleshooting with emphasis on electronic power devices. 4. Design a system; component and process and deal with the computer's hard ware, software, operating



	<p>systems and inter facing to meet the required needs in all communication and electronics engineering issues.</p> <p>5. Communicate effectively, Planning and analyzing new communication and telecommunication networks</p> <p>6. Demonstrate knowledge of contemporary engineering issues and display professional, ethical responsibilities; and contextual understanding.</p> <p>7. Acquire the needed communication skills and use the techniques, tools and codes of practice effectively for project management and all engineering practice.</p> <p>8. Apply control theory and measurement principals for industrial variables, signal conversion, conditioning and processing.</p> <p>9. Work effectively within multi-disciplinary teams to lead quality improvement projects.</p>
<p>2- knowledge and understanding</p>	<p>Graduates will achieve an appropriate level of technical competence in demonstrates knowledge and understanding of:</p> <p>A1. Define concepts and theories of mathematics and sciences, which is appropriate to the discipline.</p> <p>A2. Define basics of information and communication technology (ICT)</p> <p>A3. Listing characteristics of engineering materials related to the discipline.</p> <p>A4. Describe principles of design including elements design, process and/or a system related to specific disciplines.</p> <p>A5. Recognize methodologies of solving engineering problems.</p> <p>A6. Describe quality assurance systems, codes of practice and standards, health and safety requirements, and environmental issues.</p> <p>A7. List the business and management principles relevant to engineering.</p> <p>A8. Define current engineering technologies as related to disciplines.</p> <p>A9. Investigate topics related to humanitarian</p>



	<p>interests and moral issues.</p> <p>A10. Define technical language and report writing.</p> <p>A11. State professional ethics and socio-economical impact of engineering solutions</p> <p>A12. Recognize contemporary engineering topics.</p> <p>A13. Recite elementary science underlying electronic engineering systems and information technology.</p> <p>A14. Define basics of design and analyzing electronic engineering systems, while considering the constraints of applying inappropriate technology and the needs of commercial risk evaluation.</p> <p>A15. Define principles of analyzing and design of electronic circuits and components.</p> <p>A16. Recognize principles of Analyzing and design of control systems with performance evaluation.</p> <p>A17. List the biomedical instrumentation.</p> <p>A18. Define the communication systems.</p> <p>A19. Recognize coding and decoding techniques.</p> <p>A20. List microwave applications.</p> <p>A21. List antenna and wave propagation.</p> <p>A22. Define nanotechnology application.</p> <p>A23. Define usage of optical fiber.</p> <p>A24. List methods of fabrication of integrated circuits.</p> <p>A25. Define the analysis of signal processing.</p> <p>A26. Define optical communication systems.</p>
<p>3- B. Intellectual skills</p>	<p>The Electronics and Communication engineering graduate should be able to:</p> <p>B.1 Select appropriate mathematical and computer-based methods for modeling and analyzing problems.</p> <p>B.2 Select appropriate solutions for engineering problems based on analytical thinking.</p> <p>B.3 Think in a creative and innovative way in</p>



	<p>problem solving and design.</p> <p>B.4 Combine, exchange, and assess different ideas, views, and knowledge from a range of sources.</p> <p>B.5 Assess and evaluate the characteristics and performance of components, systems and processes.</p> <p>B.6 Investigate the failure of components, system, and processes.</p> <p>B.7 Solve engineering problems, often on the basis of limited and possibly contradicting information.</p> <p>B.8 Select and appraise appropriate ICT tools to a variety of engineering problems.</p> <p>B.9 Judge engineering decision considering balanced cost, benefits, safety, quality, reliability, and environmental impact.</p> <p>B.10 Incorporate economic, social, environmental dimensions and risk management in design.</p> <p>B.11 Analyze results of numerical models and appreciate their limitations.</p> <p>B.12 Create systematic and methodic approaches in dealing with new and advancing technology.</p> <p>B.13 Develop innovative solutions for the practical industrial problems.</p> <p>B.14 Plan, conduct and write a report on a project or assignment.</p> <p>B.15 Analyze the performance of digital and analog communication, mobile communication, coding, and decoding systems</p> <p>B.16 Synthesis and integrate electronic systems for certain specific function using the right equipment.</p>
<p>4- Professional skills</p>	<p>The Electronics and Communication engineering graduates must show ability to:</p> <p>C1. Apply knowledge of mathematics, science, information technology, design, business context and engineering practice to solve engineering problems</p> <p>C2. Merge engineering knowledge and understanding to improve design, products and/or services.</p> <p>C3. Create and/or re-design a process, component</p>



	<p>or system, and carry out specialized engineering designs.</p> <p>C4. Practice the neatness and aesthetics in design and approach.</p> <p>C5. Use computational facilities, measuring instruments, workshops and laboratories equipment to design experiments and collect, analyze and interpret results.</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>C18. Use appropriate tools to measure system performance.</p>
5- General skills	Graduates will have an educated view of the world including:



	<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> <p>D9. Refer to relevant literatures.</p>
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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	Semester Work	Reports, Quizes	
3	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			√
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
Provide training on how to use a new teaching technology in their classes.	√	
Using online course material.		√

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 used without date
2	Clarity of course aims is not achieved
3	The ability of learning outcomes to be measured is not achieved
4	Appropriate methods of teaching and learning used to achieve the intended learning outcomes is not achieved

Coordinator: **Prof.**

Department Head: **Prof. Dr**