The Higher Institute of Engineering

Electronics and Communication Engineering

Program Specification

2023 - 2024

Electronics and Communication Engineering

Program Specification

According to 2019 Regulation

Administrative Information

Program title	Electronics and Communication Engineering, **(ECE)**
Program type	Single
Award / degree	B.Sc. Degree
Dept. (s) responsability	Communication and Computer Engineering
Coordinator	Head of communication and computer engineering department Prof .Dr. Salah Alagooz.
Assistant Co-ordinator:	Dr. Mohamed Abdelhamed
External evaluator	**Prof.** Osama Elsayed Electronics and Communication Dept., Assuit University
Date of most recent approval of program specification by the Department council	Department council's in 11/9/2022
Date of most recent approval of program specification by the Academic council	27/9/2023

Content

Electronics and Communication Engineering

Program Specification

A. Basic Information

- **Program Title:** Bachalor Degree of Electronics and Communication Engineering (ECE)
- **Program Type:** Single
- **Department responsability:** Communication and Computer Engineering Depatement
- **Dates of program specifications approval:** 2019
- **Year of Operation:** 2023-2024

B. Specialized Information

1. Educational objectives of electronics and communication engineering program:

The Electronics, Communications EngineeringProgram aims to provide future engineers with appropriate theoretical knowledge and technical skills to respond to professional market demandsin the fields of Electronics and Communication Engineering.

The following are the aimed graduate attributes:

1. Applying basic concepts in essential, general, and specialized engineering sciences related to the field of electronics and communications engineering.
2. Identifying, analyzing, and solving engineering problems through scientific thinking, as well as employing appropriate techniques, skills, methods, and tools to practice the engineering professionality with the ability to develop and self-learning to serve the labor market needs.
3. Modeling, designing, implementing, operating, maintaining, and repairing various electronic circuits and systems.
4. Designing, and implementing various communications, networks, microwaves, control, and measurement systems.
5. Applying knowledge using different programming languages, signal processing and image processing techniques and analyzing them, as well as integrating information technology with modern communication systems.
6. Designing and implementing applied projects and advanced research activities to serve the community and develop the environment.
7. Good management, appropriate decision-making, effective communication, preparation and presentation of technical reports, and work within multidisciplinary work teams, while adhering to the ethics and standards of the engineering profession.

2. The Attributes of an Electronics and Communications engineer

A) General specifications for a graduate of electronics and communication engineering program:

1. Mastering a wide spectrum of engineering knowledge and specialized skills, also can apply acquired knowledge using theories and abstract thinking in real-life situations.
2. Applying analytic and systemic thinking to identify, diagnose and solve engineering problems with a wide range of complexity and variation.
3. Behaving professionally and adhere to engineering ethics and standards.
4. Leading / working in a heterogeneous team of professionals from different engineering specialties and assume responsibility for own and team performance.
5. Recognizing his/her role in promoting the engineering field and contribute to the development of the profession and the community.
6. Value the importance of the environment, both physical and natural, and work to promote principles of sustainability.
7. Applying and using techniques, skills, and modern engineering tools necessary for engineering practice.
8. Having full responsibility for own learning and self-development, engage in lifelong learning and demonstrate the capability to engage in post-graduate and research studies.
9. Communicating effectively using different modes, tools, and languages with various audiences; to deal with academic/professional challenges in a professional and creative manner.
10. Demonstrating leadership qualities, business administration and project management skills.

B) Special specifications for a graduate of electronics and communication engineering program:

1- Mastering the application of the necessary technical skills in modeling, designing, implementing, operating, maintaining, and repairing circuits, electronic systems, communication systems, networks, microwaves, control, and measurement systems.

2- Mastering the use of different programming languages and integrating information technology and processing signals and images with modern communication systems.

3.Learning Outcomes (LO's)

3.1 Competencies of engineering graduate (Level A)

The engineering graduate must be able to:

A- General Engineering NARS Competencies in 2018			
A1	Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science, and mathematics.	A1.1	Identify, and formulate complex engineering problems by applying engineering fundamentals, basic science, and mathematics.
		A1.2	Solve complex engineering problems by applying engineering fundamentals, basic science, and mathematics.
A2	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.	A2.1	Develop and conduct appropriate experimentation and/or simulation.
		A2.2	Analyze and interpret data, assess, and evaluate findings, and use statistical analyses and objective engineering judgment to draw conclusions.
A3	Apply engineering design processes to produce cost-effective solutions that meet specified needs with 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.	A3.1	Apply engineering design processes to produce cost-effective solutions that meet specified needs.
		A3.2	Illustrate contextual constraints such as global, social, cultural, economic, environmental, ethical and sustainability imperatives as an integral part of the design process.
A4	Utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements, environmental issues,	A4	Utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements, environmental issues,

	and risk management principles.		and risk management principles.
A5	Practice research techniques and methods of investigation as an inherent part of learning.	A5.1	Identifies current developments and technologies related to engineering.
		A5.2	Applies selected research literature in the engineering approaches.
A6	Plan, supervise and monitor implementation of engineering projects, taking into consideration other trades requirements.	A6.1	Apply fundamental engineering processes and the project management tools to the planning, design, simulation, and execution of project work. Plan implementation of engineering projects, taking into consideration other trades requirements.
		A6.2	Supervise and monitor implementation of engineering projects, taking into consideration other trades requirements.
A7	Function efficiently as an individual and as a member of multi-disciplinary and multicultural teams.	A7	Function efficiently as an individual and as a member of multi-disciplinary and multicultural teams.
A8	Communicate effectively – graphically, verbally and in writing – with a range of audiences using contemporary tools.	A8	Communicate effectively – graphically, verbally and in writing – with a range of audiences using contemporary tools.
A9	Use creative, innovative, and flexible thinking and acquire entrepreneurial and leadership skills to anticipate and respond to new situations.	A9.1	Use creative, innovative, and flexible thinking to anticipate and respond to new situations.
		A9.2	Acquire entrepreneurial and leadership skills to anticipate and respond to new situations.
A10	Acquire and apply new knowledge,	A10	Acquire and apply new knowledge,

	and practice self, lifelong and other learning strategies.		and practice self, lifelong and other learning strategies.

3.2 Competencies of basic electrical engineering (Level B)

The electrical engineering graduate must be able to:

B- Electrical NARS Competencies in 2018			
B1	Select, model, and analyze electrical power systems applicable to the specific discipline by applying the concepts of generation, transmission, and distribution of electrical power systems.	B1.1	Select, and model, electrical power systems applicable to the specific discipline by applying the concepts of generation, transmission, and distribution of electrical power systems.
		B1.2	Analyze electrical power systems applicable to the specific discipline by applying the concepts of generation, transmission, and distribution of electrical power systems.
B2	Design, model and analyze an electrical/electronic/digital system or component for a specific application: and identify the tools required to optimize this design.	B2.1	Design an electrical/electronic/digital system or component for a specific application: and identify the tools required to optimize this design.
		B2.2	Model and analyze an electrical/electronic/digital system or component for a specific application: and identify the tools required to optimize this design.
B3	Design and implement elements, modules, sub-systems, or systems in electrical/electronic/digital engineering using technological and professional tools.	B3.1	Design elements, modules, sub-systems, or systems in electrical/electronic/digital engineering using technological and professional tools.
		B3.2	Implement elements, modules, sub-systems, or systems in

			electrical/electronic/digital engineering using technological and professional tools.
		B3.3	Identify the tools required to optimize the design of an electrical/electronic/digital system or component for an electrical application.
B4	Estimate and measure the performance of an electrical/electronic/digital system and circuit under specific input excitation and evaluate its suitability for a specific application.	B4.1	Measure the performance of electronic circuits, instrumentation, sensors, and communication systems using appropriate lab equipment effectively and safely.
		B4.2	Estimate and evaluate the performance of electrical/ electronic drivers, circuits, instrumentation, sensors, and actuators as stand-alone systems or as part of electronics and communication systems.
B5	Adopt suitable national and international standards and codes to design, build, operate, inspect, and maintain electrical/electronic/digital equipment, systems, and services.	B5.1	Take on suitable national and international standards to carry out specialized communications systems designs.
		B5.2	Examine the design of different in electrical/electronic/digital equipment, systems and services based on national and international codes.

3.3 High specified competencies (Level C)

In addition to the competencies for all engineering programs (Level A) and the competencies for the basic electrical engineering discipline (Level B), the Electronics and Communications Program graduate must be able to (Level C)

C- Electronics and Communications Engineering ARS

C1	Predict, develop innovative solutions, and evaluate information and processes through individual and group projects for practical the electronics and communications problems.	C1.1	Adopt creative and innovative solving problems through individual and group projects for practical the electronics and communications problems.
		C1.2	Exchange knowledge, information and skills with electronics and communications engineering groups to solve practical the electronics and communications problems.
C2	Model, design, troubleshoot repair and maintain the failure of the electronics systems, analogue and digital communications systems, wireless communication systems, optical communication systems photonic, microwave, control systems and networks and optimize their performance.	C2.1	Model and analyze an electronics/communications system or component using appropriate mathematical methods and tools.
		C2.2	Design an electronics/communications system or component for electronics and communications applications.
		C2.3	Identify the tools required to optimize the design of an electronics/communications system for electronics and communications applications.
C3	Analysis of the signal processing and apply new technologies and approaches for the design and diagnostics of digital/analog mobile communications, coding, and decoding systems.	C3.1	Analyze the performance of digital and analog communication, mobile communication, communication networks, coding, and decoding systems.
		C3.2	Examine systematic and methodical approach in dealing with new and advancing technology.
		C3.3	Apply new technologies in dealing with coding and decoding systems.

C4	Synthesis and integrate systems for certain specific function in software and hardware and demonstrate the knowledge about measurement equipment and investigate the ability to use them to characterize components and systems in the field of Electronics and Communications Engineering.	C4.1	Synthesis and integrate systems for certain specific function in software and hardware in the field of Electronics and Communications Engineering.
		C4.2	demonstrate the knowledge about measurement equipment and investigate the ability to use them to characterize components and systems in the field of Electronics and Communications Engineering.
C5	Relate principles of science, electromagnetic, antennas and wave propagation, and applications of Microwave circuits and systems for modeling and analyzing communication problems.	C5.1	Demonstrate the principles of basics of science, electromagnetic, antennas and wave propagation.
		C5.2	Analyze, design, and measure antennas and microwave circuits in microwave applications for modeling communication problems.

4. Academic Standars

National Academic Reference Standards (NARS 2018) was adapted.

5. Bookmarks

- The program Competences were prepared by taking the faculty members opinion.
- The program Competences were reviewed by two external reviewers accredited by the National Authority for Quality Assurance and Accreditation of Education, namely:

  1- **Prof.: ElSayed M. Elrabeay (2021/2022)**

  2- **Prof.: Osama Elsayed (2021/2022-2022/2023)**
- The Government College of Technology- India
  https://gct.ac.in/23/department-ece-program-outcomes
- San José State University, India
  https://www.sjsu.edu/ee/graduate-program/learning-outcomes.php

- Institute of Aeronautical Engineering (IARE)- India
  https://www.iare.ac.in/?q=pages/ece-educational-objectives-outcomes
- Sona College of Technology, India
  https://www.sonatech.ac.in/ece/ece-program-outcomes.php
- Taylor Business Institute, Chicago, USA
  https://tbiil.edu/electronics-engineering-program-description-learning-outcomes/

6. Program Structure and Contents:

6.1 Program duration: The duration of the program is five academic years, including the preparatory year

6.2 Program Content:

The following are the subjects taught during this program

Preparatory Year

Code	Course Name	First Semester															
		Teaching Hours				Marking					Subject Area						
		Lectures	Exercises	Practical	**Total hours**	Written Exam	Year work	Practical Exam	Exam Duration (Hour)	**Total Course Marks**	Social and Human Sciences	Business Management	Engineering culture	Mathematics and Basic Sciences	Basic engineering sciences	Project and field training	Applied Engineering Sciences and Design
PHM 011	**Mathematics (1)**	**2**	**2**	**-**	**4**	**90**	**60**	**-**	**2**	**150**				√			
PHM 013	**Physics (1)**	**2**	**1**	**2**	**5**	**90**	**30**	**30**	**2**	**150**				√			
PHM 015	**Mechanics (1)**	**2**	**2**	**-**	**4**	**90**	**60**	**-**	**2**	**150**				√			
ARC 011	**Engineering projection drawing (1)**	**1**	**2**	**-**	**3**	**60**	**40**	**-**	**2**	**100**					√		
CHE 011	**Chemistry (1)**	**2**	**1**	**1**	**4**	**60**	**20**	**20**	**2**	**100**				√			
HUM 013	**Computer skills**	**1**	**-**	**2**	**3**	**30**	**10**	**10**	**2**	**50**	√						
HUM 011	**Technical English language (1)**	**1**	**-**	**1**	**2**	**30**	**10**	**10**	**1**	**50**	√						
Total		**11**	**8**	**6**	**25**					**750**	**5**			**17**	**3**		

Code	Course Name	Second Semester															
		Teaching Hours				Marking					Subject Area						
		Lectures	Exercises	Practical	**Total hours**	Written Exam	Year work	Practical Exam	Exam Duration (Hour)	**Total Course Marks**	Social and Human Sciences	Business Management	Engineering culture	Mathematics and Basic Sciences	Basic engineering sciences	Project and field training	Applied Engineering Sciences and Design
PHM 012	**Mathematics (1)**	**2**	**2**	**-**	**4**	**90**	**60**	**-**	**2**	**150**				√			
PHM 014	**Physics (1)**	**2**	**1**	**2**	**5**	**90**	**30**	**30**	**2**	**150**				√			
PHM 016	**Mechanics (1)**	**2**	**2**	**-**	**4**	**90**	**60**	**-**	**2**	**150**				√			
ARC 012	**Engineering projection drawing (1)**	**1**	**2**	**2**	**5**	**60**	**20**	**20**	**2**	**100**					√		
PHM 017	**Production technology**	**1**	**-**	**2**	**3**	**45**	**15**	**15**	**2**	**75**			√				
HUM 014	**The history of Engineering and technology**	**2**	**-**	**-**	**2**	**50**	**25**	**-**	**2**	**75**	√						
HUM 012	**Technical English language (2)**	**1**	**-**	**1**	**2**	**30**	**10**	**10**	**1**	**50**	√						
Total		**11**	**7**	**7**	**25**					**750**	**4**		**3**	**13**	**5**		

First Year (General)

Code	Course Name	First Semester															
		Teaching Hours				Marking					Subject Area						
		Lectures	Exercises	Practical	**Total hours**	Written Exam	Year work	Practical Exam	Exam Duration (Hour)	**Total Course Marks**	Social and Human Sciences	Business Management	Engineering culture	Mathematics and Basic Sciences	Basic engineering sciences	Project and field training	Applied Engineering Sciences and Design
ECE 110	Circuits (1)	2	1	1	4	90	30	30	2	150					√		
ECE 120	Electronic devices	2	-	1	3	60	-	40	2	100					√		
ECE 112	Electronic measurements (1)	1	1	1	3	75	25	25	2	125							√
PHM 151	Math. (3)	2	2	-	4	60	40	-	2	100				√			
PHM 153	Physics (3)	2	1	1	4	75	25	25	2	125				√			
ECE 114	Mechanical engineering	2	1	-	3	60	40	-	2	100					√		
HUM 151	Selective Humanities course (1)	2	2	-	4	30	20	-	1	50	√						
Total		13	8	4	25					750	4			8	10		3

Code	Course Name	Second Semester															
		Teaching Hours				Marking					Subject Area						
		Lectures	Exercises	Practical	**Total hours**	Written Exam	Year work	Practical Exam	Exam Duration (Hour)	**Total Course Marks**	Social and Human Sciences	Business Management	Engineering culture	Mathematics and Basic Sciences	Basic engineering sciences	Project and field training	Applied Engineering Sciences and Design
ECE 111	**Circuits(2)**	**2**	**1**	**1**	**4**	**90**	**30**	**30**	**2**	**150**					√		
ECE 121	**Analog electronic circuits**	**2**	**-**	**1**	**3**	**60**	**-**	**40**	**2**	**100**					√		
ECE 113	**Electronic measurements (2)**	**1**	**1**	**1**	**3**	**75**	**25**	**25**	**2**	**125**							√
ECE 180	**Logic design**	**2**	**-**	**1**	**3**	**60**	**-**	**40**	**2**	**100**							√
PHM 152	**Math. (4)**	**2**	**2**	**-**	**4**	**60**	**40**	**-**	**2**	**100**				√			
PHM 154	**Physics (4)**	**2**	**1**	**1**	**4**	**75**	**25**	**25**	**2**	**125**				√			
HUM 152	**Selective humanities course(2)**	**2**	**1**	**-**	**3**	**30**	**20**	**-**	**1**	**50**	√						
Total		**13**	**6**	**5**	**24**					**750**	**3**			**8**	**7**		**6**

- Circuits (1, 2) - (Electronic devices, analog electronic circuits) - Electronic measurements (1, 2) - Mathematics (3, 4) - Physics (3, 4) are considered as continued courses.

Second Year (General)

Code	Course Name	First Semester															
		Teaching Hours				Marking					Subject Area						
		Lectures	Exercises	Practical	**Total hours**	Written Exam	Year work	Practical Exam	Exam Duration (Hour)	**Total Course Marks**	Social and Human Sciences	Business Management	Engineering culture	Mathematics and Basic Sciences	Basic engineering sciences	Project and field training	Applied Engineering Sciences and Design
ECE 222	**Electronic circuits analysis**	**2**	**1**	**1**	**4**	**90**	**30**	**30**	**2**	**150**					√		
ECE 240	**Signals and Systems Analysis**	**2**	**2**	**-**	**4**	**60**	**40**	**-**	**2**	**100**					√		
ECE 281	**Microprocessor**	**2**	**-**	**1**	**3**	**60**	**-**	**40**	**2**	**100**							√
ECE 282	**Structural programming**	**2**	**-**	**1**	**3**	**60**	**-**	**40**	**2**	**100**							√
PHM 251	**Mathematics(5)**	**2**	**2**	**-**	**4**	**60**	**40**	**-**	**2**	**100**				√			
HUM 251	**quality control and quality assurance systems**	**2**	**-**	**-**	**2**	**30**	**20**	**-**	**1**	**50**		√					
ECE 270	**Electromagnetic fields**	**2**	**1**	**-**	**3**	**60**	**40**	**-**	**2**	**100**					√		
Total		**14**	**6**	**3**	**23**					**700**		**2**		**4**	**11**		**6**

Code	Course Name	Second Semester															
		Teaching Hours				Marking					Subject Area						
		Lectures	Exercises	Practical	**Total hours**	Written Exam	Year work	Practical Exam	Exam Duration (Hour)	**Total Course Marks**	Social and Human Sciences	Business Management	Engineering culture	Mathematics and Basic Sciences	Basic engineering sciences	Project and field training	Applied Engineering Sciences and Design
ECE 223	**Integrated circuits**	**2**	**2**	**-**	**4**	**90**	**60**	**-**	**2**	**150**							√
ECE 271	**Electromagnetic waves (1)**	**2**	**2**	**-**	**4**	**60**	**40**	**-**	**2**	**100**					√		
ECE 244	**Analog communication**	**2**	**1**	**1**	**4**	**90**	**30**	**30**	**2**	**150**					√		
ECE 242	**Digital signal processing**	**2**	**1**	**-**	**3**	**60**	**40**	**-**	**2**	**100**							√
ECE 283	**Object-oriented programming**	**2**	**-**	**1**	**3**	**60**	**-**	**40**	**2**	**100**							√
ECE 241	**Random signals and noise**	**2**	**1**	**-**	**3**	**60**	**40**	**-**	**2**	**100**					√		
EPM 249	**Electrical machines**	**2**	**1**	**-**	**3**	**60**	**40**	**-**	**2**	**100**			√				
Total		**14**	**8**	**2**	**24**					**800**			**3**		**11**		**10**

- (Analysis of electronic circuits, integrated electronic circuits) - (Electromagnetic fields, electromagnetic waves (1)) - Programming (structural, object) are considered continued courses.

Third Year (Electronics and Communication Engineering)

Code	Course Name	First Semester															
		Teaching Hours				Marking					Subject Area						
		Lectures	Exercises	Practical	**Total hours**	Written Exam	Year work	Practical Exam	Exam Duration (Hour)	**Total Course Marks**	Social and Human Sciences	Business Management	Engineering culture	Mathematics and Basic Sciences	Basic engineering sciences	Project and field training	Applied Engineering Sciences and Design
ECE 345	Baseband Communication	2	1	1	4	90	30	30	2	150					√		
ECE 372	Electromagnetic wave(2)	2	1	1	4	60	20	20	2	100					√		
ECE 384	Analog automatic control	2	1	-	3	60	40	-	2	100							√
ECE 324	Design of electronic circuits by computer	1	1	2	4	60	20	20	2	100					√		
EPM 339	Electrical Power Engineering	2	1	-	3	60	40	-	2	100			√				
HUM 352	Legislation and contracts	1	1	-	2	30	20	-	1	50		√					
ECE 3XX	Specialized Selective Course (1)	2	1	-	3	60	40	-	2	100							√
ECE 39X	Field Training (1)	-	-	2	2	-	20	30	-	50						√	
Total		12	7	6	25					750		2	3		12	2	6

Code	Course Name	Second Semester															
		Teaching Hours				Marking					Subject Area						
		Lectures	Exercises	Practical	**Total hours**	Written Exam	Year work	Practical Exam	Exam Duration (Hour)	**Total Course Marks**	Social and Human Sciences	Business Management	Engineering culture	Mathematics and Basic Sciences	Basic engineering sciences	Project and field training	Applied Engineering Sciences and Design
ECE 346	**Digital Communication**	**2**	**2**	**1**	**5**	**90**	**30**	**30**	**2**	**150**					√		
ECE 373	**Antennas**	**2**	**1**	**1**	**4**	**60**	**20**	**20**	**2**	**100**					√		
ECE 385	**Digital control**	**2**	**1**	**-**	**3**	**60**	**40**	**-**	**2**	**100**							√
ECE 348	**Information theory and coding**	**2**	**1**	**-**	**3**	**60**	**40**	**-**	**2**	**100**					√		
ECE 350	**Fiber Optic Communication**	**2**	**-**	**1**	**3**	**90**	**30**	**30**	**2**	**150**			√				
ECE 3XX	**Specialized Selective Course (2)**	**2**	**1**	**-**	**3**	**60**	**40**	**-**	**2**	**100**							√
HUM 351	**Selective Humanities course(3)**	**2**	**2**	**-**	**4**	**30**	**20**	**-**	**1**	**50**	√						
Total		**14**	**8**	**3**	**25**					**750**	**4**		**3**		**12**		**6**

- (Base band communication and Digital communication) – (Electromagnetic waves (2) and Antennas) – (Analog control and Digital control) are considered as continued courses.

Fourth Year (Electronics and Communication Engineering)

Code	Course Name	First Semester															
		Teaching Hours				Marking					Subject Area						
		Lectures	Exercises	Practical	**Total hours**	Written Exam	Year work	Practical Exam	Exam Duration (Hour)	**Total Course Marks**	Social and Human Sciences	Business Management	Engineering culture	Mathematics and Basic Sciences	Basic engineering sciences	Project and field training	Applied Engineering Sciences and Design
ECE 447	**Broadband Communication**	**2**	**1**	**1**	**4**	**60**	**20**	**20**	**2**	**100**							√
ECE 462	**Computer networks(1)**	**2**	**1**	**1**	**4**	**60**	**20**	**20**	**2**	**100**							√
ECE 474	**Wave propagation**	**2**	**1**	**-**	**3**	**60**	**40**	**-**	**2**	**100**							√
ECE 454	**Mobile Communication Systems**	**2**	**1**	**-**	**3**	**60**	**40**	**-**	**2**	**100**							√
ECE 455	**Electronic communication systems**	**2**	**1**	**-**	**3**	**60**	**40**	**-**	**2**	**100**							√
ECE 4XX	**Specialized Selective Course (3)**	**2**	**1**	**-**	**3**	**60**	**40**	**-**	**2**	**100**							√
ECE 4XX	**Specialized Selective Course (4)**	**2**	**1**	**-**	**3**	**60**	**40**	**-**	**2**	**100**							√
ECE 490	**Graduation project**	**1**	**-**	**3**	**4**	**-**	**30**	**20**	**-**	**50**						√	
Total		**15**	**7**	**5**	**27**					**750**						**4**	**23**

Code	Course Name	Second Semester															
		Teaching Hours				Marking					Subject Area						
		Lectures	Exercises	Practical	**Total hours**	Written Exam	Year work	Practical Exam	Exam Duration (Hour)	**Total Course Marks**	Social and Human Sciences	Business Management	Engineering culture	Mathematics and Basic Sciences	Basic engineering sciences	Project and field training	Applied Engineering Sciences and Design
ECE 463	**Computer networks(2)**	**2**	**1**	**1**	**4**	**60**	**20**	**20**	**2**	**100**							√
ECE 456	**Switching systems**	**2**	**1**	**-**	**3**	**60**	**40**	**-**	**2**	**100**					√		
ECE 457	**Satellite Communications**	**2**	**1**	**-**	**3**	**60**	**40**	**-**	**2**	**100**							√
ECE 4XX	**Specialized Selective course (5)**	**2**	**1**	**-**	**3**	**60**	**40**	**-**	**2**	**100**							√
ECE 4XX	**Specialized Selective course (6)**	**2**	**1**	**-**	**3**	**60**	**40**	**-**	**2**	**100**							√
HUM 451	**Project management**	**2**	**1**	**-**	**3**	**30**	**20**	**-**	**1**	**50**		√					
ECE 49X	**Field Training (2)**	**-**	**-**	**2**	**2**	**-**	**20**	**30**	**-**	**50**						√	
ECE 490	**Graduation project**	**1**	**-**	**5**	**6**	**-**	**50**	**100**	**-**	**150**						√	
Total		**13**	**6**	**8**	**27**					**750**		**3**			**3**	**8**	**13**

- Networks (1, 2) - Project (project grades are delivered by the end of the second semester) are considered as continued courses.

6. 3 Program Structure

Total teaching hours and subjects distribution over the subject areas

Subject	Subject Area							Total Actual Hours	Total Credit Hours
	Social and Human Sciences	Business Management	Engineering Culture	Mathematics and Basic Science	Basic Eng. Sciences	Applied Eng. science & design	Projects & site training		
Social and Human Sciences								20	14
Business Management								7	5
Engineering Culture								12	8
Mathematics and Basic Science								50	36
Basic Engineering Sciences								73	50
Applied Eng. science and design								74	50
Projects and field training								14	7
Total Credit Hours	14	5	8	36	50	50	7		170
Total actual hours	20	7	12	50	73	74	14	250	
Percentage of credit hours	8.3%	2.9%	4.7%	21.2%	29.4%	29.4%	4.11%		100%
Percentage of actual hours	8%	2.8%	4.8%	20%	29.2%	29.6%	5.6%	100%	
Requirements of the Engineering Studies Sector Committee	8-12 %	2-4 %	4-6 %	18-22 %	25-30 %	25-30 %	4-6 %		

Subject	Subject area				Total Actual Hours	Total Credit Hours
	University Requirements	College Requirements	Requirements for Major Specialization	Requirements for Minor Specialization		
University Requirements					20	14
College Requirements					75	51
Requirements for Major Specialization					38	58
Requirements for Minor Specialization					27	47
Total Credit Hours	14	51	58	47		170
Total Actual Hours	20	75	83	72	250	
Percentage of credit hours	8.2%	30%	34. 1%	27.7%		100%
Percentage of actual hours	8%	30%	33.2%	28.8%	100%	
Graduation Requirements	6-10%	% -3022	30-35%	20-30%		

From the above table show the credit hours distribution and the requirement of

- The engineering sector of supreme council of higher education
- The Egyptian NARS 2018, 2nd edition.

- It is the evident that the current program fulfills the NARS, The engineering sector requirements and Graduation requirement.

7. Course Contents

Course Code:
Course Name:
Contents:
} Please look to appendix (3)

8. Program Admission Requirements

- Secondary Egyptian Schools Graduates.
- Secondary School Certificate Graduates of other countries are eligible to join this program if they met the minimum grades set by Admission Office of the Ministry of Higher Education.
- The study begins with a preparatory year for all students before specialization in Electronics and Communications Engineering. Students' departmental allocation is in accordance with the institute Council regulations.

9. Regulations for Progression and Program Completion

a- The student is considered successful if he passes the examination in all courses of his class.

b- The student is promoted to the next higher level if he fails in not more than two subjects of his calss or from lower classes,

c- The referred student has to sit the examination in the courses in which he has faild together with the students studying the same courses. The student gets a pass grade when he passes the examination successfully. In the case the student was considered absent with acceptable excuse in a course, he gets the actual grade,

d- The grades of the successful student in a course and in the general grade are evaluated as follows:

Distinction: 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.

e- The grades of a failing student in a course is estimated in one of the following grades:

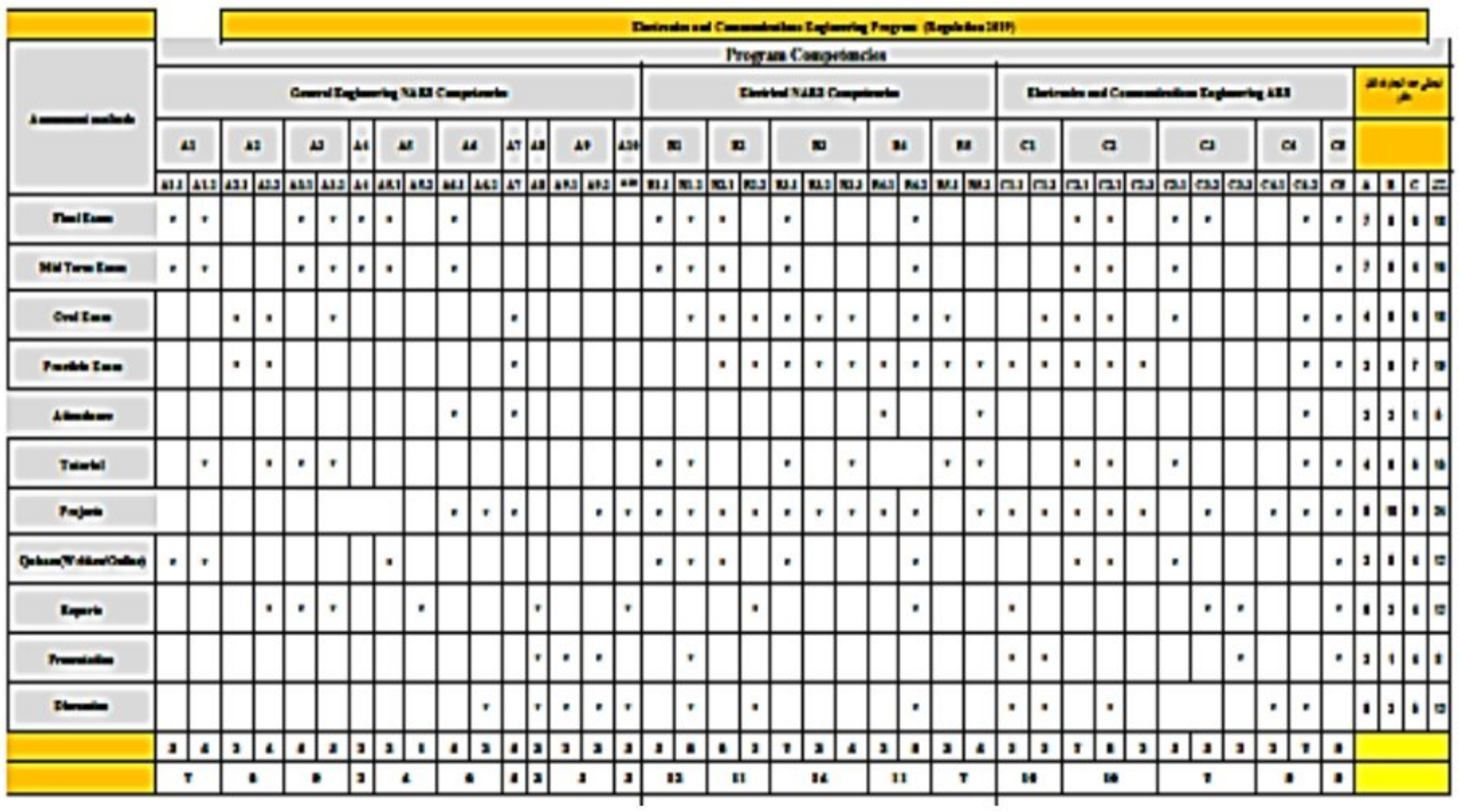
Weak: from 30% to less than 50% of the total mark.

Very weak: less than 30% of the total mark.

f- The B.Sc. general grade for the students is based on the cumulative marks obtained during all the years of study. The students are then arranged serially according their cumulative sum.

g- The student is awarded an honor degree if his cumulative sum is distinction or very good provided that he gets a grade not less than very good in any class of study other than the preparatory year. Moreover, he should have not faild in any examination he has sat in any other than the preparatory year.

10. Student Assessment (Methods and rules for student assessment)



- Teaching methods are implemented using e-learning and hybrid learning methods.

11. Program Evaluation Methods

Evaluator	Tool
1- Senior students	Questionnaire
2- Alumni	Questionnaire
3- Stakeholders	Questionnaire
4- External Evaluator(s) (External Examiner (s))	Report
5- Other societal parties	Questionnaire

Head of the Board of Communication and Computer Engineering Department

(Manager of the program)

Title	Name	Signature
General Coordinator of the Department	Dr. Mohamed Abdelhamed	
Chairman of the Department Council	Prof. Dr. Salah Elagooz	S.Elagooz
Date of Approval	11/9/2023	

Appendices

Appendix (1)

Matrices

Appendix (2)

The Internal Regulations for the undergraduate

Appendix (3)

Course Specification