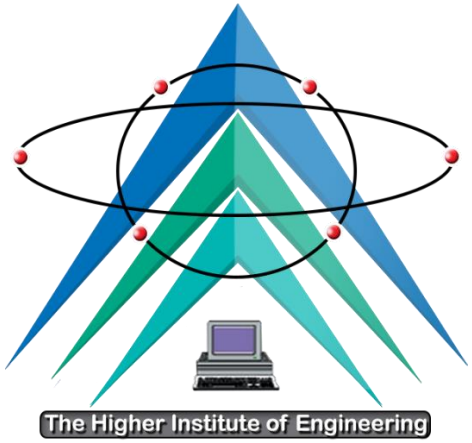


Electronics and Communication Engineering

Program Specification

2023 - 2024

According to 2013 Regulation

Electronics and Communication Engineering

Program Specification

According to 2013 Regulation

Administrative Information

Program title	Electronics and Communication Engineering, **ECE**
Program type	Single
Award / degree	B.Sc. Degree
Dept. (s) responsible	Communication and Computer Engineering
Coordinator	Head of Electronics and Communications engineering program Prof. 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/ 9/2023
Date of most recent approval of program specification by the Academic council	27/9/2023

Content

Program Specification

A. General Information

1. Basic Information

- **Program Title:** Bachalor Degree of Electronics and Communication Engineering Program (ECE)
- **Program Type:** Single
- **Department:** Communication and Computer Engineering Depatement
- **Coordinator:** Prof. Salah Elagooz
- **Assistant Co-ordinator:** Dr. Mohamed Abdelhamed
- **Year of operation:**2023-2024
- **Dates of program specifications approval:**2013

2. Staff Members

The Electronics and Communications EngineeringProgram is taught by (35) highly qualified staff members.

No. of staff members	Full time	Part time
Engineering Courses	19	-
Basic Sciences Courses	16	-

3. External Evaluators:

The program was evaluated by external evaluator **Prof.: Osama Elsayed** the evaluation showed that the program specification agrees with the National Academic Reference Standards However, the reviewer gave objective comments, which were taken into consideration in the final version of the program specifications.

External Evaluators	Date of review	Action
Prof. : Osama Elsayed	July 2023	All comments were covered

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, and risk management principles.	A4	Utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements, environmental issues, 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, and practice self, lifelong and other learning strategies.	A10	Acquire and apply new knowledge, 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	C4.1	Synthesis and integrate systems for certain specific function in software and

	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.		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	Use the principles of basics of science, electromagnetic, antennas and wave propagation, and applications of Microwave circuits and systems for modeling and analyzing communication problems.

4. Academic Standards

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

Prep. Year / 1st Semester

***Lastly taught in academic year 2018/2019 due to new regulation start in 2019/2020**

Code	Course Name	Teaching Hours						Marking				Subject Area						
		Lectures	Exercises	Practical	Total hours	Credit Hours	Written Exam Duration	Year work	Practical Exam	Written Exam	Total	Hum. & Soc. Sc.	Math. & B. Sc.	B. Eng. Sc.	App. Eng. & Des.	Comp. App. & ICT	Proj. & Practice	Discretionary
PHM 011	Mathematics (1)	2	2	-	4	3	2	60	-	90	150		√					
PHM 031	Mechanics (1)	2	2	-	4	3	2	60	-	90	150		√					
PHM 021	Physics (1)	2	1	1	4	2	2	30	30	40	100		√					
ARC 011	Engineering drawing& Projection (1)	1	3	-	4	2	2	50	-	50	100			√				
HUM 021	Production Technology	1	1	2	4	2	2	30	30	40	100			√				
Hum 021	History of engineering and technology	2	-	-	2	2	2	30	-	70	100	√						
CHE 001	Chemistry (1)	2	1	1	4	2	2	30	30	40	100		√					
HUM 011	Technical English language (1)	-	2	2	4	1	1	15	15	20	50	√						
Total		**12**	**12**	**6**	**30**	**17**	**15**	**305**	**105**	**440**	**850**	**3**	**10**	**4**	**-**	**-**	**-**	**-**

Prep. Year/ 2nd Semester

Co		Teaching Hours		Marking	Subject Area

	Course Name	Lectures	Exercises	Practical	Total hours	Credit Hours	Written Exam Duration	Year work	Practical Exam	Written Exam	Total	Hum. & Soc. Sc.	Math. & B. Sc.	B. Eng. Sc.	App. Eng. & Des.	Comp. App. & ICT	Proj. & Practice	Discretionary
PHM 012	Mathematics (2)	2	2	-	4	3	2	60	-	90	150		√					
PHM 032	Mechanics (2)	2	2	-	4	3	2	60	-	90	150		√					
PHM 022	Physics (2)	2	1	1	4	2	2	30	30	40	100		√					
ARC 012	Engineering drawing & Projection (2)	1	3	4	8	3	2	45	45	60	150			√(2)		√(1)		
HUM 012	Technical English language (2)	-	2	2	4	1	1	15	15	20	50	√						
ECE 001	International Computer Driving License (ICDL)	-	-	4	4	1	2	15	15	20	50					√		
SCX 0P1	Selective Course (1)	2	1	1	4	2	2	30	30	40	100			√				
SCX 0P2	Selective Course (2)	2	1	-	3	2	2	40	-	60	100			√				
Total		**11**	**12**	**12**	**35**	**17**	**15**	**295**	**135**	**420**	**850**	**1**	**8**	**6**	**-**	**2**	**-**	**-**

FirstYear / 1st Semester

***Lastly taught in academic year 2019/2020 due to new regulation start in 2019/2020**

Code	Course Name	Teaching Hours						Marking				Subject Area						
		Lectures	Exercises	Practical	Total hours	Credit Hours	Written Exam Duration	Year work	Practical Exam	Written Exam	Total	Hum. & Soc. Sc.	Math. & B. Sc.	B. Eng. Sc.	App. Eng. & Des.	Comp. App. & ICT	Proj. & Practice	Discretionary
ECE 141	**Circcits (2)**	2	2	-	4	3	2	30	40	80	150			√				
ECE 111	**Electronics (2)**	2	1	1	4	2	2	30	30	40	100			√				
ECE 121	**Measurements and Laboratory (1)**	2	-	2	4	2	2	20	40	40	100			√				
PHM 110	**Mathematics (3)**	2	2	-	4	3	2	60	-	90	150		√					
PHM 121	**Physics (3)**	2	1	1	4	2	2	20	20	60	100		√					
ECE 143	**Mechanical Engineering (1)**	2	-	2	4	2	2	30	30	40	100			√				
ECE 191	**Information Technology**	2	-	2	4	2	2	30	30	40	100					√		
Total		**17**	**6**	**8**	**28**	**16**	**14**	**220**	**190**	**390**	**800**	**-**	**5**	**9**	**-**	**2**	**-**	**-**

FirstYear / 2nd Semester

Co-		Teaching Hours		Marking	Subject Area

	Course Name	Lectures	Exercises	Practical	Total hours	Credit Hours	Written Exam Duration	Year work	Practical Exam	Written Exam	Total	Hum. & Soc. Sc.	Math. & B. Sc.	B. Eng. Sc.	App. Eng. & Des.	Comp. App. & ICT	Proj. & Practice	Discretionary
ECE 122	**Measurements and Laboratory (2)**	2	-	2	4	2	2	20	40	40	100			√				
PHM 111	Mathematics (4)	2	2	-	4	3	2	60	-	90	150		√					
PHM 122	Physics (4)	2	2	1	5	3	2	30	30	90	150		√					
ECE 144	Mechanical Engineering (2)	2	-	2	4	2	2	30	30	40	100			√				
ECE 181	Training Project (1)	-	2	-	2	1	-	-	50	-	50						√	
ECP103	Logic design	2	2	2	6	3	2	40	40	70	150					√		
HUM 1xx	Selective Course (Humanities (1))	2	1	-	3	2	2	30	-	70	100	√						
Total		**12**	**9**	**7**	**28**	**16**	**12**	**210**	**190**	**400**	**800**	**2**	**6**	**4**	**-**	**3**	**1**	**-**

FirstYear / 3rdSemester (summer)

Code	Course Name	Teaching Hours						Marking				Subject Area						
		Lectures	Exercises	Practical	Total hours	Credit Hours	Written Exam Duration	Year work	Practical Exam	Written Exam	Total	Hum. & Soc. Sc.	Math. & B. Sc.	B. Eng. Sc.	App. Eng. & Des.	Comp. App. & ICT	Proj. & Practice	Discretionary
ECE 13X	**Practical field training (1)**	-	-	3	3	1	-	25	25	-	50						√	
ECE 182	**Training Project (2)**	-	2	-	2	1	-	-	50	-	50						√	
Total		**-**	**2**	**3**	**5**	**2**	**-**	**25**	**75**	**-**	**100**	**-**	**-**	**-**	**-**	**-**	**2**	**-**

SecondYear/ 1st Semester

Co	Course Name	Teaching Hours		Marking	Subject Area

		Lectures	Exercises	Practical	Total hours	Credit Hours	Written Exam Duration	Year work	Practical Exam	Written Exam	Total	Hum. & Soc. Sc.	Math. & B. Sc.	B. Eng. Sc.	App. Eng. & Des.	Comp. App. & ICT	Proj. & Practice	Discretionary
ECE 261	**Electrical and Magnetic Fields (1)**	2	1	-	3	2	2	40	-	60	100				√			
ECE 223	**Measurements and Laboratory (3)**	1	-	2	3	1	2	15	15	20	50			√				
ECE 213	**Electronics (3)**	2	1	1	4	2	2	30	30	40	100			√				
PHM 211	**Mathematics (5)**	2	2	-	4	3	2	60	-	90	150		√					
ECE 283	**Training Project (3)**	-	2	-	2	1	-	-	50	-	50						√	
ECE 291	**Microprocessors**	2	2	2	6	3	2	40	60	50	150					√		
ECE 242	**Circuits (3)**	2	2	2	6	3	2	40	40	70	150			√				
HUM 203	**Technical written reports**	2	1	-	3	2	2	30	-	70	100	√						
Total		**13**	**11**	**7**	**31**	**17**	**14**	**255**	**195**	**400**	**850**	**2**	**3**	**6**	**2**	**3**	**1**	**-**

SecondYear/ 2nd Semester

Code	Course Name	Teaching Hours						Marking				Subject Area						
		Lectures	Exercises	Practical	Total hours	Credit Hours	Written Exam Duration	Year work	Practical Exam	Written Exam	Total	Hum. & Soc. Sc.	Math. & B. Sc.	B. Eng. Sc.	App. Eng. & Des.	Comp. App. & ICT	Proj. & Practice	Discretionary
ECE 262	Electrical and Magnetic Fields (2)	2	1	-	3	2	2	40	-	60	100				√			
ECE 224	Measurements and Laboratory (4)	1	-	2	3	1	2	15	15	20	50			√				
ECE 214	Electronics (4)	2	1	1	4	2	2	30	20	50	100			√				
PHM 212	Mathematics (6)	2	1	-	3	2	2	40	-	60	100		√					
ECE 251	Electrical Signal Analysis	2	-	2	4	2	2	40	-	60	100				√			
ECE 231	Dynamics system and control	2	2	-	4	3	2	60	-	90	150			√				
ECE 292	Computer Engineering (1)	2	-	4	6	3	2	45	45	60	150					√		
Total		**13**	**5**	**9**	**27**	**15**	**14**	**270**	**80**	**400**	**750**	**-**	**2**	**6**	**4**	**3**	**-**	**-**

Second Year/ 3rd Semester (Summer Course)

Code	Course Name	Teaching Hours						Marking				Subject Area						
		Lectures	Exercises	Practical	Total hours	Credit Hours	Written Exam Duration	Year work	Practical Exam	Written Exam	Total	Hum. & Soc. Sc.	Math. & B. Sc.	B. Eng. Sc.	App. Eng. & Des.	Comp. App. & ICT	Proj. & Practice	Discretionary
ECE 23X	Practical Field training (2)	-	-	3	3	1	-	25	25	-	50						√	
ECE 284	Training Project (4)	-	2	-	2	1	-	-	50	-	50						√	
Total		**-**	**2**	**3**	**5**	**2**	**-**	**25**	**75**	**-**	**100**	**-**	**-**	**-**	**-**	**-**	**2**	**-**

ThirdYear/ 1st Semester

Co	Course Name	Teaching Hours		Marking	Subject Area

		Lectures	Exercises	Practical	Total hours	Credit Hours	Written Exam Duration	Year work	Practical Exam	Written Exam	Total	Hum. & Soc. Sc.	Math. & B. Sc.	B. Eng. Sc.	App. Eng. & Des.	Comp. App. & ICT	Proj. & Practice	Discretionary
ECE 351	**Communications (1)**	2	2	2	6	3	2	45	45	60	150				√			
ECE 361	**Electromagnetic Waves (1)**	2	2	2	6	3	2	45	45	60	150				√			
PHM 311	**Mathematics (7)**	2	1	-	3	2	2	40	-	60	100		√					
ECE 371	**Automatic Control**	2	2	-	4	3	2	60	-	90	150				√			
EPM 305	**Power and Electrical machines engineering (1)**	2	-	2	4	2	2	30	30	40	100			√				
ECE 391	**Computer Engineering (2)**	2	-	2	4	2	2	30	30	40	100					√		
HUM 3XX	**Selective Course (Humanities (2))**	2	1	-	3	2	2	30	-	70	100	√						
Total		**14**	**8**	**8**	**30**	**17**	**14**	**280**	**150**	**420**	**850**	**2**	**2**	**2**	**9**	**2**	**-**	**-**

ThirdYear/2nd Semester

Code	Course Name	Teaching Hours		Marking	Subject Area

		Lectures	Exercises	Practical	Total hours	Credit Hours	Written Exam Duration	Year work	Practical Exam	Written Exam	Total	Hum. & Soc. Sc.	Math. & B. Sc.	B. Eng. Sc.	App. Eng. & Des.	Comp. App. & ICT	Proj. & Practice	Discretionary
ECE 352	**Communications (2)**	2	2	2	6	3	2	45	45	60	150				√			
ECE 362	**Electromagnetic Waves (2)**	2	-	2	4	2	2	30	20	50	100				√			
ECE 372	**Digital Control**	2	-	2	4	2	2	40	-	60	100				√			
EPM 305	**Power and Electrical machines engineering (2)**	2	-	2	4	2	2	40	-	60	100			√				
ECE 311	**Electronics (5)**	2	-	2	4	2	2	30	30	40	100				√			
ECE 312	**design of electronic circuits computer automated**	-	-	6	6	2	2	30	30	40	100					√		
HUM 303	**Legislation, Contracts and Specifications**	2	1	-	3	2	2	30	-	70	100	√						
Total		**12**	**3**	**16**	**31**	**15**	**14**	**245**	**125**	**380**	**750**	**2**	**-**	**2**	**9**	**2**	**-**	**-**

Third Year/ 3rd Semester (Summer Course)

Code	Course Name	Teaching Hours						Marking				Subject Area						
		Lectures	Exercises	Practical	Total hours	Credit Hours	Written Exam Duration	Year work	Practical Exam	Written Exam	Total	Hum. & Soc. Sc.	Math. & B. Sc.	B. Eng. Sc.	App. Eng. & Des.	Comp. App. & ICT	Proj. & Practice	Discretionary
ECE 33X	**Practical Field training (3)**	-	-	3	3	1	-	25	25	-	50						√	
ECE 385	**Training Project (5)**	-	-	4	4	1	-	-	50	-	50						√	
Total		**-**	**-**	**7**	**7**	**2**	**-**	**25**	**75**	**-**	**100**	**-**	**-**	**-**	**-**	**-**	**2**	**-**

FourthYear/ 1st Semester

Code	Course Name	Teaching Hours		Marking	Subject Area

		Lectures	Exercises	Practical	Total hours	Credit Hours	Written Exam Duration	Year work	Practical Exam	Written Exam	Total	Hum. & Soc. Sc.	Math. & B. Sc.	B. Eng. Sc.	App. Eng. & Des.	Comp. App. & ICT	Proj. & Practice	Discretionary
ECE 451	**Communications (3)**	2	2	2	6	3	2	45	45	60	150				√			
ECE 461	**Electromagnetic Waves (3)**	2	2	2	6	3	2	45	45	60	150				√			
ECE 491	**Computer Networks (1)**	2	1	1	4	2	2	30	30	40	100							√
ECE 4XX	**Selective Course (1)**	2	-	2	4	2	2	30	30	40	100							√
ECE 4XX	**Selective Course (2)**	2	-	2	4	2	2	30	30	40	100							√
HUM 404	**Selective Course (Hummanities (3))**	2	1	-	3	2	2	30	-	70	100	√						
ECE 486	**Project**	2	-	3	5	3	-	50	-	-	50						√	
Total		**14**	**6**	**12**	**32**	**17**	**12**	**260**	**180**	**310**	**750**	**2**	**-**	**-**	**6**	**-**	**3**	**6**

FourthYear/ 2nd Semester

Code	**Course Name**	**Teaching Hours**						**Marking**				**Subject Area**						
		Lectures	Exercises	Practical	Total hours	Credit Hours	Written Exam Duration	Year work	Practical Exam	Written Exam	Total	Hum. & Soc. Sc.	Math. & B. Sc.	B. Eng. Sc.	App. Eng. & Des.	Comp. App. & ICT	Proj. & Practice	Discretionary
ECE 452	Communications (4)	2	2	2	6	3	2	45	45	60	150				√			
ECE 462	Electromagnetic Waves (4)	2	2	-	4	3	2	60	-	90	150				√			
ECE 492	Computer Networks (2)	2	1	1	4	2	2	30	30	40	100							√
ECE 4XX	**Selective Course (3)**	2	-	2	4	2	2	30	30	40	100							√
ECE 4XX	**Selective Course (4)**	2	-	2	4	2	2	30	30	40	100							√
HUM 442	Projects Management	2	1	-	3	2	2	30	-	70	100	√						
ECE 486	Project	2	-	3	5	3	-	70	180	-	250						√	
Total		**14**	**6**	**10**	**30**	**17**	**12**	**295**	**315**	**340**	**950**	**2**	**-**	**-**	**6**	**-**	**3**	**6**

6.3 Program structure

Total teaching hours and subjects distribution over the subject areas

	Course teaching (Contact) hours	Course teaching (Credit) hours	Humanities & Social Sciences	Math & Basic Sciences	Basic Eng	Applied Eng& Design	Computer Appl& ICT*	Projects* & Practice	Discretionary
Total Prep year 1st Semester	30	17	3	10	4	-	-	-	-
Total Prep year 2nd Semester	35	17	1	8	6	-	2	-	-
Total 1styear 3rd Semester	28	16	-	5	9	-	2	-	-
Total 1styear 4th Semester	28	16	2	6	4	-	3	1	-
Total 1styear 5th Semester	5	2	-	-	-	-	-	2	-
Total 2ndyear 6th Semester	31	17	2	3	6	2	3	1	-
Total 2nd year 7th Semester	27	15	-	2	6	4	3	-	-
Total 2nd year 8th Semester	5	2	-	-	-	-	-	2	-
Total 3rdyear 9th Semester	30	17	2	2	2	9	2	-	-
Total 3rd year 10th Semester	31	15	2	-	2	9	2	-	-
Total 3rd year 11th Semester	7	2	-	-	-	-	-	2	-
Total 4thyear 12th Semester	32	17	2	-	-	6	-	3	6
Total 4th year 13th Semester	30	17	2	-	-	6	-	3	6
Total of Five Years	320	170	16	36	39	36	17	14	12
% of Five Years	100%		9.40%	21.20%	22.94 %	21.18%	10%	8.24%	7.1%
NARS %	**100%**		**9-12%**	**20-26%**	**20-23%**	**20-22%**	**9-11%**	**8-10%**	**6-8%**

	Subject Area	To Per Requ

	Hum. & Soc. Sc.	Math. & B. Sc.	B. Eng. Sc.	App. Eng. & Des.	Comp. App. & ICT	Proj. & Practice	Selective course			
Humanitarian Courses								28	**8.75%**	**8-10%**
Mathematics and Basic Science Courses								56	**17.5%**	**15-20%**
Basic Engineering Courses								115	**35.94%**	**30-35%**
Applied Engineering Courses Including Projects & Training								121	**37.8%**	**35-40%**
Total Credit Hours	16	36	39	36	17	14	12	170		
Percentage	**9.4%**	**21.2 %**	**22.94 %**	**21.18 %**	**10%**	**8.24 %**	**7.1 %**	**100 %**	**100%**	
NARS Engineering Requirements	**9-12%**	**20-26%**	**20-23%**	**20-22%**	**9-11%**	**8-10%**	**6-8%**			

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 edition

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.
- The student must study two specific courses Electronics (1) and Circuits (1) Engineering

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- In addition to the two subjects mentioned in the previous item, the student who fails in two subjects in humanities and social sciences, whether from his class or from lower classes, is admitted to the transfer to the consecutive higher level. Passing successfully in all courses before obtaining the B.Sc. degree is prerquisite.

d- 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,

e- 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.

f- 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.

g- 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 to their cumulative sum.

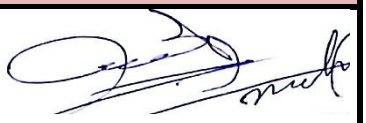
h- The student is awarded an honor degree if his cumulative sum is distinction or very good if he gets a grade not less than very good in any class of study other than the preparatory year. Moreover, he should have not faild in any examination he has sat in any other than the preparatory year.

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

Method (tool)	LO's
1. Written exam	To assess competencies: A, B & C
2. Quizzes and reports	To assess competencies: A, B & C
3. Oral exams	To assess competencies: A, B & C
4. Practical	To assess competencies: A, B & C
5. Project applied on a practical field problem	To assess competencies: A, B & C

11. Program Evaluation

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

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

Appendix (1)
Matrices

Appendix (2)
The Internal Regulations for the undergraduate

Appendix (3)
Course Specification