



وحدة ضمان الجودة



وزارة التعليم العالي  
المعهد العالي للهندسة والتكنولوجيا بالمنزلة  
منشأ بالقرار الوزاري رقم (2354) لسنة 2019



Higher Institute of Engineering and Technology at Manzala

**Program Specification**

**Electronics Engineering B.Sc.**

**(Communications Engineering program)**

**Academic Year 2023-2024**

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**Institution:** Higher Institute of Engineering and Technology at Manzala

**Department:** Electronic Engineering Department

**Specification of** Communications Engineering Program (2023-2024)

### 1. Institute Mission:

The Higher Institute of Engineering and Technology is committed to preparing a graduate with the knowledge, skills, and engineering competencies [1] that qualify him to compete in the labor market [2], demonstrate excellence in scientific research [3], and provide community services that contribute to achieving sustainable development goals [4] within the framework of human values and social responsibility [5].

يلتزم المعهد العالي للهندسة والتكنولوجيا بإعداد خريج يتمتع بالمعارف والمهارات والجدارات الهندسية التي تؤهله للمنافسة في سوق العمل ، والتميز في البحث العلمي ، وتقديم خدمات مجتمعية تساهم في تحقيق أهداف التنمية المستدامة في إطار القيم الإنسانية والأخلاقية.

### 2. Program Mission:

The Communications Engineering Program is committed to providing a distinguished educational service [1] by graduating engineers capable of competing at the local and regional levels [2], and developing research studies [3] and thus contributing to spreading the values of innovation and entrepreneurship [4] with ethical and social responsibility [5].

يلتزم برنامج هندسة الاتصالات بتقديم خدمة تعليمية متميزة [1] من خلال تخريج مهندسين قادرين على المنافسة على المستوى المحلي والإقليمي [2] ، وتطوير الدراسات البحثية [3] وبالتالي المساهمة في نشر قيم الابتكار وريادة الأعمال [4]. والمسؤولية الاجتماعية والأخلاقية [5].

### 3. Program Attributes

According to the National Academic Reference Standard (NARS2018), the graduates of communication engineering program must satisfy the following attributes:

1. Master a wide spectrum of engineering knowledge and specialized skills and can 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.

**Table [1] The relationship matrix of " Institute's Mission Vs Program's Mission".**

Key Words of Institute Mission	Key Words of Program Mission	preparing a graduate with the knowledge, skills, and engineering competencies	that qualify him to compete in the labor market	demonstrate excellence in scientific research	provide community services that contribute to achieving sustainable development goals	within the framework of human values and social responsibility
providing a distinguished educational service <sup>[1]</sup>		√			√	
Graduating engineers capable of competing at the local and regional levels <sup>[2]</sup>			√			
Developing research studies <sup>[3]</sup>				√		
Contributing to spreading the values of innovation and entrepreneurship <sup>[4]</sup>				√		
Ethical and social responsibility <sup>[5]</sup>						√

**Table [2]: The relationship matrix of "Program's Mission Vs Graduate's attributes".**

Key Words of Program Mission / Graduate Attributes	providing a distinguished educational service <sup>[1]</sup>	Graduating engineers capable of competing at the local and regional levels <sup>[2]</sup>	Developing research studies <sup>[3]</sup>	Contributing to spreading the values of innovation and entrepreneurship <sup>[4]</sup>	Ethical and social responsibility <sup>[5]</sup>
Attribute #1			√		
Attribute #2	√				
Attribute #3					√
Attribute #4	√				√
Attribute #5					√
Attribute #6		√			
Attribute #7	√				
Attribute #8			√		
Attribute #9	√	√			
Attribute #10				√	

#### A- Basic Information

<b>1. Program title</b>	Communication Engineering Program
<b>2. Program type</b>	Single
<b>3. Department offering the program</b>	Electronic Engineering
<b>4. Sharing Department</b>	Basic Science department
<b>5. Coordinator</b>	Dr. Mohamed Abd El-Rahman
<b>6. External evaluator</b>	
<b>7. Internal evaluator</b>	
<b>8. Date of program approval according to by Law</b>	July 2019
<b>9. Last Date of approval program specification</b>	October 2023



## B- Professional Information

### 1. Program Aims

The Communication Engineering Program prepares its graduates to become intellectual leaders in industry. Graduates are grounded in scientific, mathematical, and technical knowledge and relevant technologies that give them ability to analyze, synthesize, and design engineering systems.

By the end of this program the student must be able to:

- 1) Acquire knowledge of mathematics, natural science, necessary to solve engineering fundamental problems, design systems, conduct experiments, and analyze data through theoretical and abstract reasoning in real-world scenarios.
- 2) Identify, diagnose and solve complex Engineering problems based on analytical and systematic thinking approach.
- 3) Conduct oneself in a professional manner and uphold the ethical standards and principles of the engineering profession.
- 4) Collaborate within and lead a diverse team of professionals representing various engineering disciplines, taking accountability for both personal and team performance.
- 5) Acknowledge their role in advancing the engineering field and actively participate in the advancement of the profession and the betterment of the community.
- 6) Appreciate the significance of both the physical and natural environment, and actively advocate for the principles of sustainability in their work.
- 7) Use current advanced techniques, skills, and tools necessary for computing practices to specify, design, and implement communications - based systems.
- 8) Use their understanding of professional, ethical, and social responsibilities and the importance of life-long learning in the conduct of their careers.
- 9) Use practical, soft, presentation, management, and language skills to ensure effective communication, display professional, manage projects and ethical responsibilities, and demonstrate knowledge of contemporary engineering
- 10) Exhibit leadership attributes, as well as competencies in business administration and entrepreneurship.



Table [3]: The relationship matrix of "Program aims Vs Graduate's Attributes".

Program aims program Attributes	Aim #1	Aim #2	Aim #3	Aim #4	Aim #5	Aim #6	Aim #7	Aim #8	Aim #9	Aim #10
Attribute #1	√									
Attribute #2		√								
Attribute #3			√							
Attribute #4				√						
Attribute #5					√					
Attribute #6						√				
Attribute #7							√			
Attribute #8								√		
Attribute #9									√	
Attribute #10										√

## 2. Program learning outcomes:

According to the National Academic Reference Standard, the communication program must satisfy the following program learning Outcomes:

### A- General Learning outcomes (Level (A))

- A1. Identify the concepts and theories of mathematics and sciences related to communications engineering to solve complex engineering problems.
- A2. Use computational facilities and techniques, measuring instruments, workshops and laboratories equipment to design experiments, collect, analyze, and interpret results and assess the findings and conclude remarks.
- A3. Utilize engineering design methodologies to create cost-efficient solutions that fulfill defined requirements while accounting for global, cultural, social, economic, environmental, ethical, and relevant factors within the framework of sustainable design and development principles.
- A4. Identify and apply advanced techniques, quality assurance systems, software's engineering programs, safety requirements and environmental issues.



- A5. Apply different methods of investigations and research as an intrinsic part of learning.
- A6. Plan, conduct and write a technical report on a project considering related trade's needs.
- A7. Collaborate effectively individually and as a member in multidisciplinary and multicultural team and can lead a team.
- A8. Communicate effectively using written, oral, graphical, and presentational skills.
- A9. Develop innovative solutions and acquire entrepreneurial skills for the practical industrial problems and response to new situations.
- A10. Maintain management of self/ Time, flexibility to adapt to change, working under contradictory conditions and engage in long-life-self learning.

### **B- Specialty learning outcomes (Level B)**

- B1. Select, model and assess electrical power systems relevant to Communication field by employing concepts related to the generation, transmission, and distribution of electrical power systems.
- B2. Create, simulate, and assess an electrical, electronic, or digital system or component tailored to a particular application. Identify the necessary tools for optimizing this design.
- B3. Plan and execute the development of elements, modules, sub-systems, or complete systems within the domain of electrical, electronic, or digital engineering, utilizing appropriate technological and professional tools.
- B4. Predict and measure the performance of an electrical, electronic, or digital system and circuit when subjected to defined input signals, and assess its appropriateness for a given application.
- B5. Incorporate relevant national and international standards and codes to guide the design, construction, operation, inspection, and maintenance of electrical, electronic, and digital equipment, systems, and services.

### **C- Sub-specialty Learning outcomes (level C)**

- C1. Display expanded modeling, designing, and integrating skills for analog, digital, and intelligent computer-operated systems.
- C2. Design systems to produce, transfer, control, and utilize electrical energy derived from renewable resources, and supervise their construction.
- C3. Utilize innovative digital modeling and analysis tools while maintaining the reliability of electrical power systems.
- C4. Improve and/or redesign industrial control components and systems to enhance human life quality.



Table [4] the relationship matrix of “Program aims Vs Program Learning outcomes”.

Program aims	Program Learning outcomes																		
	Level (A)										Level (B)					Level (C)			
	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	B1	B2	B3	B4	B5	C1	C2	C3	C4
Aim #1	√				√									√				√	
Aim #2		√			√						√	√	√		√		√	√	
Aim #3			√												√				√
Aim #4			√	√			√							√					√
Aim #5		√				√						√	√	√	√	√			
Aim #6						√	√				√			√				√	
Aim #7						√		√	√				√	√			√	√	
Aim #8			√		√			√							√				
Aim #9	√														√				√
Aim #10							√		√										

### 3. Academic Standards of Program

The reference for standards considered in the development of this program is National Academic Reference Standards for Engineering (NARS 2018 and NARS 2009) derived from standards of National Authority for Quality Assurance and Accreditation of Education (NAQAAE) which is adopted and approved by institute council in 10 December 2022 meeting No. (3).

1- General Engineering NARS Competencies in 2018		
Level A (NARS)	A1	Identify, formulate, and 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.
	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.
	A4	Utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements, environmental issues, and risk management principles.



<b>1- General Engineering NARS Competencies in 2018</b>	
A5	Practice research techniques and methods of investigation as an inherent part of learning.
A6	Plan, 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 multi-cultural teams.
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.
A10	Acquire and apply new knowledge; and practice self, lifelong and other learning strategies.

<b>2- Electrical NARS Competencies in 2018</b>		
<b>Level B (NARS)</b>	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.
	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.
	B3	Design and implement: elements, modules, sub-systems or systems in electrical/electronic/digital engineering using technological and professional tools.
	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.
	B5	Adopt suitable national and international standards and codes to: design, build, operate, inspect and maintain electrical/electronic/digital equipment, systems and services.

### 3- Electrical Engineering & Control ARS

<b>Level C (ARS)</b>	C1	Demonstrate additional abilities to model, design and integrate computer-operated systems including analog, digital and intelligent systems.
	C2	Design and supervise the construction of systems to generate, transmit, control and use electrical energy obtained from renewable resources.
	C3	Apply advanced digital techniques for modeling and analyzing electrical power systems while maintain their protection.
	C4	Develop and/or redesign components/systems in the field of industrial control for improving the quality life of humans.

#### 4. Reference standards (Benchmark)

The reference for standards considered in the development of this program is National Academic Reference Standards for Engineering (NARS 2018 and NARS 2009) derived from standards of National Authority for Quality Assurance and Accreditation of Education (NAQAAE).

#### 5. Program Structure and Duration

a. **Program Duration:** 10 semesters (5-years).

b. **Program Structure:**

Theoretical contact hours:	133	Compulsory contact hours:	232
Practical/Exercises contact hours:	127	Elective contact hours:	28
Total contact hours of the program:		260	

c. **Indicative Curricula Content by Subject Area**

	Subject Area	Contact Hours	%	Tolerance
				NAQAAE
A	Humanities and Social Sciences	25	9.6	9–12 %
B	Mathematics and Basic Sciences	69	26.5	20–26 %
C	Basic Engineering Sciences	60	23	20–23 %
D	Applied Engineering and Design	54	20.7	20–22 %
E	Computer Applications and ICT	34	13	9–11 %
F	Projects and Practice	6	2.4	8–10 %
G	Discretionary: Institution Character- Identifying	12	4.6	6-8%
	<b>Total</b>	260	100	100%





d. **Program Years:**

Year	Contact Hours		
	Compulsory	Elective	Total
(Preparatory)	53	-	53
First	51	-	51
Second	50	-	50
Third	41	12	53
Fourth	37	16	53
Subtotal Contact Hours			260
Summer Training*			
Total Credit Hours			

\*Students perform industrial training (1 & 2) during summer period for 6 weeks.



## e. Program years and Courses:

**Preparatory Year****First Semester**

No	Code	Course Name	Hours / week			Marks			Total	Hrs
			Lec.	T/L	Total	Term Work	Q/L	Final		
1	BS011	Engineering Mathematics (1) **	2	2	4	60	-	90	150	3
2	BS012	Physics (1) **	2	2	4	50	10	90	150	3
3	BS013	Mechanics (1) **	2	2	4	40	-	60	100	3
4	MEC014	Engineering Drawing And Projection (1) **	3	4	7	75	-	100	175	3
5	BS015	Introduction To Computers And Programming	2	2	4	40	-	60	100	3
6	BS016	English Language (1)	-	2	2	15	-	35	50	2
<b>TOTAL</b>			11	14	25				725	

**Second Semester**

No	Code	Course Name	Hours / week			Marks			Total	Hrs
			Lec.	T/L	Total	Term Work	O/L	Final		
1	BS 021	Engineering Mathematics (2)**	2	2	4	50	-	75	125	3
2	BS 022	Physics (2)**	2	2	4	40	10	75	125	3
3	BS 023	Mechanics (2) **	2	2	4	40	-	60	100	3
4	MEC 024	Engineering Drawing And Projection (2) **	2	3	5	50	-	75	125	3
5	BS 025	Chemistry	2	2	4	30	10	60	100	3
6	MEC026	Production Engineering	2	3	5	40	10	75	125	3
7	BS 027	Engineering and environment	2	-	2	15	-	35	50	2
<b>TOTAL</b>			14	14	28				750	

**First year****First Semester**

No	Code	Course Name	Hours/Week			Marks			Total	Hrs
			Lee	T/L	Total	Term Work	O/L	Final		
1	BS110	Engineering Mathematics (3)	2	2	4	50	-	75	125	3
2	COM 111	Fundamental of Electrical Engineering	3	2	5	30	30	90	150	3
3	COE112	Computers Programming	3	2	5	30	30	90	150	3
4	BS111	Physics (3)	2	2	4	30	20	75	125	3
5	COM 113	Fundamentals of Electronic Engineering	3	2	5	30	30	90	150	3
6	BS100	English for Engineering (2)	0	2	2	15	-	35	50	2
<b>TOTAL</b>			13	12	25				750	

**Second Semester**

No	Code	Course Name	Hours/Week			Marks			Total	Hrs
			Lee	T/L	Total	Term Work	O/L	Final		
1	BS120	Engineering Mathematics(4)	2	2	4	50	-	75	125	3
2	COM 121	Electronic Engineering	3	2	5	30	30	90	150	3
3	MEC121	Thermodynamics and Heat Transfer	3	2	5	30	30	90	150	3
4	COM 122	Electronic Tests (1)	2	3	5	30	30	90	150	3
5	COM 123	Electronic Measurements	2	3	5	30	20	75	125	3
6	BS8XX	Humanities (2)	2	-	2	15	-	35	50	2
<b>TOTAL</b>			14	12	26				750	



**Second Year****First Semester**

No	Code	Course Name	Hours/Week			Marks			Total	Hrs
			Lee	T/L	Total	Term Work	O/L	Final		
1	BS210	Engineering Mathematics (5)	2	2	4	50	-	75	125	3
2	COM 211	Design of Electrical Circuits	3	2	5	30	30	90	150	3
3	COM 212	Electromagnetic Fields	3	2	5	30	30	90	150	3
4	COE213	Object-Oriented Programming	3	2	5	30	30	90	150	3
5	COM 214	Design of Logic and Digital Circuits	2	2	4	30	20	75	125	3
6	BS8XX	Humanities (3)	2	-	2	15	-	35	50	2
<b>TOTAL</b>			15	10	25				750	

**Second Semester**

No	Code	Course Name	Hours/Week			Marks			Total	Hrs
			Lee	T/L	Total	Term Work	O/L	Final		
1	BS220	Engineering Mathematics (6)	2	2	4	50	-	75	125	3
2	COM 221	Design of Electronic Circuits	3	2	5	30	30	90	150	3
3	COE 222	Computer Applications in Electronic Engineering	2	2	4	30	20	75	125	3
4	COM 223	Electronic Tests (2)	2	3	5	30	30	90	150	2
5	COM 224	Electrical Machines	3	2	5	30	30	90	150	3
6	BS200	English for Engineering (3)	0	2	2	15	-	35	50	2
<b>TOTAL</b>			12	13	25				750	

**Third Year (Communication Engineering)****First Semester**

No	Code	Course Name	Hours/Week			Marks			Total	Hrs
			Lee	T/L	Total	Term Work	O/L	Final		
1	COM 311	Communication Theory (1)	2	2	4	20	20	60	100	3
2	COM 312	Electromagnetic Waves	2	2	4	20	20	60	100	3
3	COM 313	Electronics (2)	3	2	5	30	20	75	125	3
4	COE 313	Control Engineering	2	2	4	20	20	60	100	3
5	BS300	Technical Writing in English	-	2	2	15	-	35	50	2
6	COM 31XE or COE 312	Elective from List (1)	2	2	4	30	20	75	125	3
7	COE 311	Computers Architecture (1)	3	2	5	30	30	90	150	3
<b>TOTAL</b>			14	14	28				750	

**Second Semester**

No	Code	Course Name	Hours/Week			Marks			Total	Hrs
			Lee	T/L	Total	Term Work	O/L	Final		
1	COM 321	Communication Theory (2)	3	2	5	30	30	90	150	3
2	COM 322	Electronics Tests (3)	2	3	5	30	30	90	150	2
3	COM 323	Digital Signal Processing	3	2	5	30	30	90	150	3
4	COM 32XE	Elective from list (2)	2	2	4	30	20	75	125	3
5	COM 32XE	Elective from list (3)	2	2	4	30	20	75	125	3
6	BS8XX	Humanities (4)	2	-	2	15	-	35	50	2
<b>TOTAL</b>			14	11	25				750	

**Fourth Year (Communication Engineering)****First Semester**

No	Code	Course Name	Hours/Week			Marks			Total	Hrs
			Lee	T/L	Total	Term Work	O/L	Final		
1	COM 411	Communication Theory (3)	3	2	5	30	30	90	150	3
2	COM 412	Electronics (3)	3	2	5	30	20	75	125	3
3	COM 413	Antennas and Wave Propagation	3	2	5	30	20	75	125	3
4	COM 41XE or COE 322 or COE X1XE	Elective 1 from list (3)	2	2	4	30	20	75	125	3
5	COM 41XE or COE 322 or COE X1XE	Elective 2 from list (3)	2	2	4	30	20	75	125	3
6	BS80X	Humanities (5)	2	-	2	15	-	35	50	2
7	COM 424	Project (1)	-	2	2	50	-	-	50	-
<b>TOTAL</b>			15	12	27				750	

**Second Semester**

No	Code	Course Name	Hours/Week			Marks			Total	Hrs
			Lee	T/L	Total	Term Work	O/L	Final		
1	COM 421	Communication Theory (4)	2	2	4	20	20	60	100	3
2	COM 422	Industrial Electronics	2	2	4	20	20	60	100	3
3	COM 423	Electronics Tests (4)	1	3	4	20	20	60	100	3
4	MEC 424	Industrial Engineering	2	-	2	15	-	35	50	2
5	COM 42XE or COE 327	Elective 1 from list 4	2	2	4	30	20	75	125	3
6	COM 42XE or COE 327	Elective 2 from list 4	2	2	4	30	20	75	125	3
7	COM 424	Project (2)	-	4	4	50	-	100	150	-
<b>TOTAL</b>			11	15	26				750	





## 6. Courses contents and specifications: -

See appendix (1)

## 7. Program admission and transfer requirements: -

### Section I (Academic degrees and Study plan)

#### Article (1):

✍ **The Higher Institute of Engineering and Technology in Manzala consists of the following scientific departments:**

1. **Electronic Engineering Department** (Communication Engineering Division–Computer Engineering Division).
2. Civil Engineering Department.
3. Architectural Engineering Department.
4. Furthermore, new departments or divisions may be added based on the Institute's Governing Board's recommendation by taking the opinion of the Supreme Council for Institutes' Affairs and the approval of the Minister of Higher Education.

#### Article (2):

✍ The duration of the study is five academic years divided into ten semesters, provided that one semester is not less than fifteen weeks other than the examination period.

#### Article (3):

✍ **Based on the decision of the Ministry of Higher Education, the Institute grants a bachelor's degree in the following specialties:**

1. Electronic Engineering (Communication Engineering Division-Computer Engineering Division).
2. Civil Engineering.
3. Architectural Engineering.

#### Article (4):

✍ The five years of obtaining a bachelor's degree begin with a general preparatory year for all students, and the specialization after that is according to what is mentioned in the course schedules.

#### Article (5):

✍ The study is based on the two-semester system in accordance with the decision of the Supreme Council of Universities. The duration of each semester is fifteen weeks, and the mid-year vacation is for two weeks, according to the date determined by the Ministry of Higher Education.

#### Article (6):

✍ The Institute's regulation contains a statement of the curriculum and the method of its distribution over the years of study and the number of dedicated hours for each course, as well as the basic topics for each course.



### **Article (7):**

- Students of the preparatory year perform practical training at the institute during the summer vacation for a period of 4 weeks, and it is implemented under the supervision of the teaching staff and the assisting staff. Each scientific department council determines a system of practical and field training for the first, second and third-year students for 4 weeks annually inside or outside the institute during the summer vacation and is implemented under the supervision of the teaching staff and the assisting staff. Students are divided into groups supervised by teaching staff members. The student is evaluated through continuous follow-up of the student's performance during the training period as well as the discussion of the student in his/her report on training at the end of the training period. The Institute's Governing Board determines a reward for supervision of its implementers. A graduation certificate shall not be conferred to students who have failed to perform the training only if they perform the training on any summer holiday before proceeding to the fourth year.

### **Article (8):**

- The fourth-year students prepare the bachelor's project, and the relevant departmental councils determine its subject, and allocate an additional period after the written exam determined by the Board of Directors of the Institute based on the proposal of the departmental councils.

### **Article (9):**

- The tables attached to this plan show the courses distributed over the years of study, the number of hours allocated for each course distributed over the hours of lectures, theoretical and practical lessons, the number of hours per week for each course, exam hours, and the maximum score in written, practical, oral exams and course work.

### **Academic Council**

#### **As stated in the text of Article (15) of the Institute's Administrative Regulations, which states:**

- The Institute shall have an academic council chaired by the Dean of the Institute and the membership of the Institute's agent or agents and the heads of its scientific departments. The Academic Council assists the Dean of the Institute and discusses the academic and scientific topics presented by the Dean of the Institute, and the Academic Council submits its recommendations to the Institute's Governing Board for accreditation.

#### **It was also stated in the text of Article (16) of the same regulation, which states:**

- The Academic Council convenes once a month or whenever it is necessary, at the request of its president.

### **Section II (Students' Admission)**





### **Article (10):**

- ✍ The Minister of Higher Education, after taking the opinion of the Supreme Council for Institutes Affairs at the end of each academic year, determines the number of students from all over the Arab Republic of Egypt or others who are admitted to the Institute in light of its needs of holders of high school or its equivalent or 5 years' industrial secondary school or the diploma of industrial technical institutes and their admission system, In a manner that does not conflict with the rules of coordination approved by the Higher Council of Universities.

### **Article (11):**

- ✍ The nomination of regular students from the Arab Republic of Egypt at the Institute shall be through the Egyptian Universities Admission Coordination Office unless otherwise issued by the Minister of Higher Education and the nomination of students from non-Arab Republic of Egypt shall be in accordance with the system approved by Ministry of Higher Education.

### **Article (12):**

#### **The conditions of student's enrollment required to be enrolled in the institute:**

#### **Obtaining the following qualifications:**

#### **1. High School (science) or its equivalent.-**

- Diploma of industrial technical institutes.-
- Diploma in industrial technical schools, the five-year post-prep school system, or its equivalent.
- Five-year industrial school diploma from specializations corresponding to the existing specializations in accordance with the governing regulations.

#### **High school diploma for Computing.-**

- 2- Student must pass the aptitude test conducted by the institute in the courses approved in the regulations.
- 3- The medical examination shall prove that he is free of infectious diseases and validity to continue the study.
- 4- Every student enrolled in the institute must prove his attendance in accordance with the conditions determined by Institute's Governing Board.
- 5-To have paid the prescribed fees for registration and additional fees.
- 6-Student must be fully dedicated to his study, and it is not permissible to not be a full-time student at the bachelor's level.
- 7- Every student is given a special ID card attached to his photo and stamped with the institute's seal. This card must be presented in every academic matter.





No student is permitted to attend lessons, lectures, practical exercises, or take exams unless he holds his card.

8- A student shall not be re-enrolled in the institute to obtain a certificate he previously obtained.

**Students are required to submit the necessary documents before enrollment, in particular:**

1. Educational Qualification.
2. A birth certificate or an official extract thereof.
3. Recruitment's situation for those who have reached 18 years.
4. A copy of the passport for non-Egyptian students.
5. Acknowledgment of the student's dedication.

**Article (13):**

- Students may be transferred to the Institute from university colleges or similar institutes within the Republic in accordance with the regulations set by the Institute's Governing Board and in a manner that does not conflict with the regulations established in the Law Organizing Private Higher Institutes No. 52/70 and Ministerial Decision No. 1088/87, within 30% of the number of students admitted to the Institute.

**8. Program Progression and completion: -**

**Section III (Study and exams)**

**Article (14):**

- Scientific councils shall be established at the Institute upon the proposal of the Dean of the Institute and the approval of the Institute's Governing Board and shall be concerned with determining the scientific content of each course, periodic follow-up on students and the implementation of training programs on time.
- The councils of the competent departments determine the scientific content of each course, and a decision is issued approving it by the Institute's Governing Board in light of the continuous development of the curriculum in accordance with the new additions in the engineering and technological sciences.

It is not permissible to modify the scientific content of any course except after studying at least three semesters and reviewing the scientific content in specialized committees every period not exceeding five years.

**Article (15):**

Determining the start and end dates for the two semesters, according to the decisions issued by the Ministry of Higher Education regarding this matter.



### **Article (16):**

- ✍ Exams are held at the end of each semester in the courses studied by the student in his/her study team and in the courses he missed according to the schedules attached to the internal regulations of the Institute, with the exception of the continuing courses where exams are held at the end of the academic year.

### **Article (17):**

- ✍ End-of-year and bachelor's exams are held at the end of each semester in the courses that the student studied in his/her study team and in the courses shown in the tables attached to these regulations, with the exception of continuing courses in which exams are held at the end of the academic year. An exam for the coursework is also held in each semester.
- ✍ The requirements for admission to enter the exam for any course, Student must fulfill an attendance rate of no less than 75% of the periods allocated for lectures and research rooms.
- ✍ The Institute's Governing Board shall issue, at the request of the councils of the relevant departments, a decision depriving the student from taking the exam in the courses in which he did not meet the attendance rate, and in this case the student is considered to have failed in the courses in which he was prevented from applying for the exam in them, unless the student presents an excuse accepted by the Institute's Governing Board, in which case he is considered absent for an excuse.

### **Article (18):**

#### **The student is transferred to the next year in one of the following two cases:**

1. If the student succeeded in all the courses.
  2. If the student fails in no more than two academic courses.
- ✍ In the second case, the student shall perform a written exam in what he has failed at the end of the following academic year, with payment of the prescribed fees.
  - ✍ A student who fails in the humanities and English language course is allowed to move to the next year, in addition to the previously mentioned course or courses, so that the total number of failed courses does not exceed three courses in the academic year.

### **Article (19):**

- ✍ The Institute's Governing Board determines the start date of the study, semester and final exams in light of the dates set by the Ministry of Higher Education.
- ✍ Students may be accepted during the first week of the semester, subject to the approval of the Dean.





- ✍ It is also permissible for the representative of the competent council to approve the admission of the student before the end of the second week of the study if the student's excuse is accepted for the delay and after the approval of the dean.

**Article (20):**

- ✍ The Institute's Governing Board approves the results of the semester exams, and the Ministry of Higher Education approves the results of the final exams to obtain a bachelor's degree based on the nomination of the Institute's Governing Board. The results of the exam are not announced unless the student pays the tuition fees and the prescribed additional fees, and the Institute issues temporary certificates for the graduates of the Institute signed by the Dean of the Institute until the issuance of official certificates approved by the Ministry of Higher Education.

**Article (21):**

- ✍ The student performs the exam in the course in what he failed with the students of his study team with whom he is studying and his success in this case is considered an acceptable grade, but if he obtains a grade higher than acceptable, it is reduced to the upper limit of an acceptable grade.

An exam is held in November for fourth-year students who have failed in no more than two courses, except for the bachelor's project through which the student who failed remains for repetition.

**Article (22):**

- ✍ Exams are conducted in accordance with ministerial decisions and in accordance with what is followed in the corresponding Institutes.

**Article (23):**

- ✍ Regarding the related courses, student is considered successful if he succeeds in the sum of the two parts of the course—But if he fails in the total sum of the course, he repeats the entire course with the students of the group that studies this course.

**Article (24):**

- ✍ The student's work is continuously evaluated during the semester, as well as the exam at the end of the semester. Semester work is part of the final grade and is represented in periodic exams, theoretical and practical exercises, research and regularity. Grades are divided between written, oral, practical exams and research work according to the nature of the course. A student's grade in practical courses may be assessed without holding an exam at the end of the semester.
- ✍ The student's name is placed on the honor list for a semester if his average for the previous semester is not less than very good grade without failing in any subject.





**Article (25):**

- ✍ A student who obtains a general grade of excellence at the end of any academic year is exempted from 10% of the expenses of the following academic year.

**Article (26):**

- ✍ A student is considered successful in the end-of-year exams if he/she obtains 50% of the maximum score for each exam course.

**Article (27):**

- ✍ One month before the examination date, the institute sends to the ministerial education system lists of three copies of the names of students who are applying for the exam.

**Article (28):**

- ✍ The result of the exam shall be announced after its approval by the Minister of Higher Education for the bachelor's exam and by the Institute's Governing Board for the end-of-year exam, with detailed lists for each of those who passed with their grades and those who failed, with a mention of the underdevelopment course and those who failed, with a list of the courses they failed in, arranged according to the alphabetical letters of the names of the students in each grade, in a visible place. at the Institute for possible viewing.

**Article (29):**

- ✍ The Institute issues provisional certificates that complete the stamp fee for final years graduates signed by the Dean of the Institute, including the name, graduation time, success evaluation in each course and general evaluation. It is approved by the Ministry of Higher Education, and then handed over to the student with the knowledge of the institute. The certificate shall be handed over to him after the payment of the student's fees.
- ✍ The date of granting the degree shall be determined from the date of approval by the Minister of Higher Education of the exam result for this degree.

**Article (30):**

✍ **Student success is estimated by one of the following approximations :**

- ✓ Excellent from 85% or more.
- ✓ Very good from 75% to less than 85%.
- ✓ Good from 65% to less than 75%.
- ✓ Acceptable from 50% to less than 65%.



**As for the student's failure, it shall be assessed by one of the following two estimates :**

- ✓ Weak from 30% to less than 50%.
- ✓ Very weak, less than 30%.
- ✗ The cumulative grade system is applied and the student gets an honors degree if the final grade at graduation is excellent or very good, and that the student has not failed in any exam taken to him except for the preparatory year.

**Article (31):**

- ✗ If the exam of one of the courses includes a written exam and another oral or practical, the student's grade in this course consists of the sum of the written, oral and practical estimates in addition to the work of the year and the mid-year test, and the student who is absent in the written exam is considered absent in the course and no grade is assigned to him.

**Article (32):**

- ✗ Fourth-year students prepare a bachelor's project and the competent scientific councils determine its subject and allocate an additional period after the written exams.

**Article (33):**

- ✗ The Institute's Governing Board may authorize students who have spent two years in their class without success in applying for the examination from abroad in the following year in the courses they failed, with the exception of the preparatory year.
- ✗ The Institute's Governing Board also authorize students of the final and pre-final students to take the exam from abroad in the following year in the courses in which they failed and with two additional chances. The students of the second year are treated as the semi-final study group, where the Institute applies the preparatory year system, and if the student of the final year fails in no more than half of the number of courses of this group, regardless of the courses lagging behind from previous group, he is licensed in the exam to pass the exam.

## 9. Teaching and Learning Methods:

Program Learning outcomes		Teaching and Learning Methods									
		Lecture-based learning	Online-based learning	Group – based learning	Individual based-learning	Research and Reporting	Site Visit	Presentation	Brain Storming	Problem solving	Blended learning
Level A	A1	√			√	√				√	
	A2			√	√	√				√	√
	A3	√		√	√				√		√
	A4	√				√		√			√
	A5	√		√	√	√			√	√	√
	A6			√	√			√	√	√	√
	A7	√		√	√	√		√	√		
	A8	√		√	√	√		√			
	A9			√	√	√		√	√	√	√
	A10	√		√	√	√			√	√	
Level B	B1	√		√	√	√		√	√		
	B2	√		√	√	√				√	√
	B3			√	√	√		√		√	√
	B4			√	√	√				√	
	B5	√									
Level C	C1	√		√	√	√		√			
	C2			√	√					√	
	C3	√		√	√	√		√		√	√
	C4			√					√	√	√



**10. Assessment Methods of Learning outcomes:**

Program Learning outcomes		Assessment Methods									
		Written Exams	Online Exams	Oral Exam	Lab Exam	Take-Home Exam	Research Assignments	Reporting Assignments	Project Assignments	In-class Questions	Models assessments
Level A	A1	√		√		√					
	A2	√		√	√		√		√	√	√
	A3			√	√		√			√	√
	A4	√			√				√	√	
	A5	√				√	√	√		√	√
	A6	√		√	√	√	√	√	√	√	√
	A7					√	√		√	√	√
	A8	√		√				√		√	
	A9			√	√	√		√	√	√	√
	A10	√		√		√			√	√	√
Level B	B1	√		√			√	√		√	√
	B2			√	√	√	√		√	√	√
	B3			√	√		√		√	√	√
	B4	√		√	√	√	√	√	√	√	√
	B5	√		√			√	√			√
Level C	C1				√	√		√	√	√	√
	C2				√	√	√	√	√	√	√
	C3	√		√	√	√	√		√		√
	C4					√	√		√		√



## 11. Evaluation of the program

Evaluator	Tool	Sample
1. Senior students	Questioners	20 (100%)
2. Alumni	Questioners	-
3. Stakeholders	Questioners	-
4. External Evaluator(s)	Report	1
5. Internal Evaluator(s)	Report	1
6. ministry of higher education and scientific research	Report	1

### Program Coordinator:

Name	Signature	Academic Year
Prof. Dr. Mohamed Abd Elrahman		2023-2024

### Head of Department:

Name	Signature	Academic Year
Prof. Dr. Mohamed Abd Elrahman		2023-2024

### Dean:

Name	Signature	Academic Year
Prof. Dr. Attia Aref		2023-2024



وحدة ضمان الجودة



وزارة التعليم العالي  
المعهد العالي للهندسة والتكنولوجيا بالمنزلة  
منشأ بالقرار الوزاري رقم (2354) لسنة 2019

## Appendix: Course Matrix with Program Learning Outcomes





