
**BSc Program
Specifications for
Communications
and Computers
Engineering
Program**

2013/2014

**Faculty of Engineering
Mansoura University**

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B.Sc. Program Specification

Communication and Computers Engineering Program

1. Basic Information

- Program Title: Communications and Computers Engineering Program
- Program Type: Multiple
- Department responsible of the program:
 - Computers and Systems Engineering
 - Electronics and Communications Engineering
- Date of approval of the Program: 10/11/2021

1. Program Vision

Achieve leadership in the field of communications and computer engineering and gain the confidence of the local and regional community in the graduate of the program

2. Program Mission

The Communications and Information Engineering program at Mansoura University committed to prepare scientifically and ethically qualified and professional engineers in the fields of communications and computer engineering, able to compete in the local and regional labor market and conduct scientific research to serve society and develop the environment

3. Educational Objectives

- 1- Acquire knowledge of mathematics, natural science, necessary to solve engineering fundamental problems, design systems, conduct experiments, and analyze data.
2. Use practical, soft, presentation, management, and language skills to ensure effective communication, display professional, manage projects and ethical responsibilities, engage in self and life-long learning, and demonstrate knowledge of contemporary engineering issues.
3. Acquire specialized science for communications and Computer engineering, network, security, and electronics with an understanding the design, operation, maintenance and associated limitations in industrial applications.
- 4- Identify different kinds of Computer engineering systems, control, and electronics, embedded systems with an understanding the design, operation, maintenance and associated limitations in industrial applications.
- 5- Use current advanced techniques, skills, necessary to design, implement computer-based systems in diverse fields with appropriate attention to hardware installation, software design, data manipulation and system operations.
6. Incorporate economics and business practices on both operational and decision-making levels including projects and risks using system analysis tools and techniques.

4. Program Learning Outcomes

In order to satisfy quality assurance while attaining our objectives the expected program Learning outcomes as referenced to NARS 2018 standards are defined as follows

Level A: Competencies of engineering graduate

- 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.
- 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 multicultural 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.

Level B: Competencies of basic Electrical engineering

Electrical engineering graduate must be able to:

- 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.

Level C: High specialized competencies

- The graduates of communications and computers engineering program should be able to:
- C1. Design, analyze and measure the performance of communication and control systems, advanced electronics and communication networks.
 - C2. Design and simulation of different applications using computers, multimedia, mobile and web applications
 - C3. Design electromagnetic applications as antennas, microwave resonators, optoelectronics and Fiber optics
 - C4. Acquire the concepts of artificial intelligence and bioengineering including signal processing and image processing
- **Appendix 1** shows the matching matrices for student outcomes in ABET and NARS2018

Academic and Reference Standards

- National Academic reference Standards of engineering program (NARS 2018) which were issued by the National Authority for Quality Assurance & Accreditation of Education NAQAAE.
- ABET Accreditation 2021/2022

7. Program Structure and Contents

7.1 Program duration:

The program duration is five years, 10 semesters.

7.2 Program structure:

- Total hours of program : 180 hours
- Theoretical 155 hours
- Practical/Exercises : 25 hours
- Compulsory : 145 hours
- Elective : 32 hours
- Selective : none
- Basic science courses: 55 Hrs. (30.5 %)
- Humanities and social science courses: 26 Hrs. (14.4 %)
- Discipline courses: 88 Hrs. (48.8 %)
- Projects and Practice: 11 (6.11 %)

7.3 Program levels (Credit Hours):

No of credit hrs	Compulsory	Elective	Selective
Level 000	37	0	0
Level 100	38	0	0

Level 200	36	0	0
Level 300	26	9	0
Level 400	8	23	0

7.4 Program courses and subject area:

- Freshman Year-Fall Semester:**

Code	Course Name	Teaching Hours				W r k D u r .	Marking				Subject Area						
		L e c t u r e s	E x e r c i s e s	P r a c t i c a l	T o t a l H o u r s		Y e a r W o r k	P r a c t i c a l E x a m	V r i t t e n E x a m	T o t a l	H u m a n i t y & S o c i a l S c i e n c e	M a t h e m a t i c s & B i o l o g y	B u s i n e s s & E c o n o m i c s	A p p l i e d E n g i n e e r i n g & D e s i g n	E n g i n e e r i n g C u l t u r e	P r o j e c t s & P r a c t i c e	B u s i n e s s A d m i n i s t r a t o r
MATH 001	Calculus- 1	2	3	0	3	2	50	0	50	100		3					
PHYS 011	Physics-1	2	2	2	4	2	40	10	50	100		4					
MATH 002	Engineering Mechanics-1	3	3	0	3	2	50	0	50	100		3					
ENG 031	Engineering Fundamentals -1	2	3	0	3	2	50	0	50	100					3		
CHEM 021	Chemistry	2	2	2	4	2	40	10	50	100		4					
UNC 041	English	2	0	0	2	2	50	0	50	100	2						
Total		13	13	4	19	12	280	20	300	600	2	14	0	0	3	0	0

- Freshman-Spring Semester:**

Code	Course Name	Teaching Hours	W r k D u r .	Marking	Subject Area
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		Lectures	Exercises	Practical	Total Hours	Exam Duration	Year Work	Practical Exam	Written Exam	Total	Hum. & Soc. Sc.	Math. & B. Sc.	B. Eng. Sc.	App. Eng. & Des.	Engineering Culture	Proj. & Practice	Business Administration
MATH 003	Calculus- 2	2	3	0	3	2	50	0	50	100		3					
PHYS 013	Physics-2	2	2	2	4	2	40	10	50	100		4					
MATH 005	Engineering Mechanics-2	2	3	0	3	2	50	0	50	100		3					
CIE 051	computer programming	2	3	0	3	2	50	0	50	100			3				
ENG032	Engineering Fundamentals -2	2	0	3	3	2	40	10	50	100					3		
UNC 042	English-2	1	0	3	2	2	40	10	50	100	2						
Total		13	13	4	19	12	280	20	300	600	2	14	0	0	3	0	0

● **Sophomore -Fall Semester:**

Code	Course Name	Teaching Hours				Exam Duration	Marking				Subject Area						
		Lectures	Exercises	Practical	Total Hours		Year Work	Practical Exam	Written Exam	Total	Hum. & Soc. Sc.	Math. & B. Sc.	B. Eng. Sc.	App. Eng. & Des.	Engineering Culture	Proj. & Practice	Business Administration

ECE161	Electric Circuit Analysis	2	3	0	3	2	50	0	50	100			3				
MATH106	Differential Equations	2	3	0	3	2	50	0	50	100		3					
CIE 153	Introduction to Data Structures and Software Engineering	2	0	3	3	2	40	10	50	100			3				
ECE171	Solid State Electronics	2	3	0	3	2	50	0	50	100			3				
CSE 162	Digital Design 1	3	0	3	4	2	40	10	50	100			4				
UNC142	Finance	2	0	0	2	2	50	0	50	100					2		
UNC143	Technical English Writing	2	0	0	2	2	50	0	50	100	2						
Total		15	9	6	20	12	280	20	300	600	2	3	13	0	2	0	0

▪ **Sophomore -Spring Semester:**

Code	Course Name	Teaching Hours				W r . E x a m D u r .	Marking				Subject Area							
		L e c t u r e s	E x e r c i s e s	P r a c t i c a l	T o t a l H o u r s		Y e a r W o r k	P r a c t i c a l E x a m	W r i t t e n E x a m	T o t a l	H u m . & S o c . S c .	M a t h . & B . S c .	B . E n g . S c .	A p p . E n g . & D e s .	E n g i n e e r i n g C u l t u r e	P r o j . & P r a c t i c e	B u s i n e s s A d m i n i s t r a t o r	
CIE155	Introduction To Computer Engineering	2	3	0	3	2	50	0	50	100			3					
ECE172	Electronics 1	3	0	3	4	2	40	10	50	100			4					
ENG 111	Introduction to Civil Engineering	3	0	0	3	2	50	0	50	100			3					
MATH 209	Probability and Statistics	2	3	0	3	2	50	0	50	100		3						
MATH 107	Multivariable Calculus	2	0	0	2	2	50	0	50	100		2						
UNC144	Decision Support Systems	3	0	0	3	2	50	0	50	100	3							
Total		15	7	3	18	12	290	10	300	600	3	5	10	0	0	0	0	

▪ **Junior-Fall Semester:**

Code	Course Name	Teaching Hours				W r . E x a m D u r . T o t a l H o u r s	Marking				Subject Area							
		L e c t u r e s	E x e r c i s e s	P r a c t i c a l	T o t a l		Y e a r W o r k	P r a c t i c a l E x a m	W r i t t e n E x a m	T o t a l	H u m . & S o c . S c .	M a t h . & B . S c .	B . E n g . S c .	A p p . E n g . & D e s .	E n g i n e e r i n g C u l t u r e	P r o j . & P r a c t i c e	B u s i n e s s A d m i n i s t r a t o r	
ENG234	Fundamentals of Thermo-fluids	2	3	0	3	2	50	0	50	100			3					
ECE264	Electromagnetic Fields	2	3	0	3	2	50	0	50	100			3					
ECE 275	Signal and Systems	2	3	0	3	2	50	0	50	100			3					
MATH208	Discrete Mathematics	2	3	0	3	2	50	0	50	100		3						
CSE 156	Computer Architecture	2	3	0	3	2	50	0	50	100			3					
UNC245	Management Information System	2	3	0	3	2	50	0	50	100	3							
Total		12	18	0	18	12	300	0	300	600	3	3	12	0	0	0	0	

▪ Junior-Spring Semester:

Code	Course Name	Teaching Hours	W r	Marking	Subject Area
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		L e c t u r e s	E x e r c i s e s	P r a c t i c a l	T o t a l H o u r s	E x a m D u r .	Y e a r W o r k	P r a c t i c a l E x a m	V r i t t e n E x a m	T o t a l	H u m a n i t y S c i e n c e	M a t h e m a t i c s	B i o l o g y	A p p l i e d E n g i n e e r i n g	E n g i n e e r i n g C u l t u r e	P r o j e c t & P r a c t i c e	B u s i n e s s A d m i n i s t r a t o r
CSE 276	Control Systems	2	0	3	3	2	40	10	50	100			3				
ECE274	Electronics-2	3	0	3	4	2	40	10	50	100			4				
CSE 256	Databases	2	0	3	3	2	40	10	50	100			3				
ECE277	Introduction to Communication System	2	3	0	3	2	50	0	50	100			3				
ENG233	Engineering Economy	2	0	0	2	2	50	0	50	100			2				
CSE 257	Operating Systems	2	0	3	3	2	40	10	50	100				3			
	Practical Training				1												1
Total		13	3	12	18	12	260	40	300	600	0	0	15	3	2	1	0

▪ **Senior 1-Fall Semester:**

Code	Course Name	Teaching Hours	W r	Marking	Subject Area
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		L e c t u r e s	E x e r c i s e s	P r a c t i c a l	T o t a l H o u r s	E x a m D u r .	Y e a r W o r k	P r a c t i c a l E x a m	V r i t t e n E x a m	T o t a l	H u m a n i t y S c i e n c e	M a t h e m a t i c s & P h y s i c s	B i o l o g y & E n g i n e e r i n g	A p p l i e d E n g i n e e r i n g & C o m m u n i c a t i o n s	E n g i n e e r i n g C u l t u r e	P r o j e c t & P r a c t i c e	B u s i n e s s A d m i n i s t r a t o r
CSE358	Computer Graphics	3	0	3	4	2	40	10	50	100				4			
ENG368	Electrical Energy Systems	2	0	3	3	2	40	10	50	100			3				
ECE378	Analog and Digital Communications	2	0	3	3	2	40	10	50	100				3			
	Technical Elective 1	2	3	0	3	2	50	0	50	100				3			
UNC344	Law for Management	2	0	0	2	2	50	0	50	100							2
ENG 345	Operation Research	2	3	0	3	2	50	0	5	100	2						
Total		13	6	9	18	12	270	30	300	600	2	0	3	10	0	0	2

▪ **Senior 1-Spring Semester:**

Code	Course Name	Teaching Hours	W r	Marking	Subject Area
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		L e c t u r e s	E x e r c i s e s	P r a c t i c a l	T o t a l H o u r s	E x a m D u r .	Y e a r W o r k	P r a c t i c a l E x a m	V r i t t e n E x a m	T o t a l	H u m a n i t y S c i e n c e	M a t h e m a t i c s	B i o l o g y	A p p l i e d E n g i n e e r i n g	E n g i n e e r i n g C u l t u r e	P r o j e c t P r a c t i c e	B u s i n e s s A d m i n i s t r a t o r
ECE 359	Microprocessor System Design	2	0	3	3	2	40	10	50	100				3			
ECE379	Digital Signal Processing	2	0	3	3	2	40	10	50	100				3			
CSE357	Internet Programming	2	0	3	3	2	40	10	50	100				3			
	Elective course 2	2	3	0	3	2	50	0	50	100				3			
	Capstone Design Elective 1	2	0	3	3	2	40	10	50	100				3			
UNC346	Marketing	2	0	0	2	2	50	0	50	100							2
	Field Training				2									2			
Total		12	3	12	17	12	260	40	300	600	0	0	0	17	0	0	2

▪ **Senior 2-Fall Semester:**

Code	Course Name	Teaching Hours	W r	Marking	Subject Area
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		Lectures	Exercises	Practical	Total Hours	Exam Duration	Year Work	Practical Exam	Written Exam	Total	Humanities & Soc. Sc.	Math. & B. Sc.	B. Eng. Sc.	App. Eng. & Des.	Engineering Culture	Proj. & Practice	Business Administration
	Elective course 3	2	3	0	3	2	50	0	50	100				3			
	Elective course 4	2	3	0	3	2	50	0	50	100				3			
	Elective Design course	2	0	3	3	2	40	10	50	100				3			
498	Project and Report 1	2	0	6	4	2	50	0	50	100						4	
UNC 446	Quantitative Methods For Quality Control	2	3	0	3	2	50	0	50	100	3						
Total		10	9	9	16	10	240	10	250	500	3	0	0	9	0	4	0

▪ **Senior 2-Spring Semester:**

Code	Course Name	Teaching Hours				Exam Duration	Marking				Subject Area						
		Lectures	Exercises	Practical	Total Hours		Year Work	Practical Exam	Written Exam	Total	Humanities & Soc. Sc.	Math. & B. Sc.	B. Eng. Sc.	App. Eng. & Des.	Engineering Culture	Proj. & Practice	Business Administration

	Elective course 5	2	3	0	3	2	50	0	50	100				3			
	Elective course 6	2	0	3	3	2	40	10	50	100				3			
499	Project and Report 2	2	0	6	4	2	50	0	50	100						4	
UNC 447	Professional & Communication Skills	2	0	0	2	2	50	0	50	100	2						
UNC 448	Project Management	3	0	0	3	2	50	0	50	100							3
Total		11	3	9	15	10	240	10	250	500	2	0	0	6	0	4	3

Total teaching hours and subjects distribution over the subject areas:

Semester	Teaching Hours				W r · E x a m D u r ·	Marking				Subject Area						
	L e c t u r e s	E x e r c i s e s	P r a c t i c a l	T o t a l H o u r s		Y e a r W o r k	P r a c t i c a l E x a m	W r i t t e n E x a m	T o t a l	H u m · & S o c · S c ·	M a t h · & B · S c ·	B · E n g · S c ·	A p p · E n g · & D e s ·	E n g i n e e r i n g C u l t u r e	P r o j · & P r a c t i c e	B u s i n e s s A d m i n i s t r a t o r
Freshman 1 st semester	13	13	4	19	12	28 0	20	30 0	60 0	2	14	0	0	3	0	0
Freshman / 2 nd semester	13	13	4	19	12	28 0	20	30 0	60 0	2	14	0	0	3	0	0
Sophomore/1 st semester	15	9	6	20	12	28 0	20	30 0	60 0	2	3	13	0	2	0	0
Sophomore / 2 nd semester	15	7	3	18	12	29 0	10	30 0	60 0	3	5	10	0	0	0	0
Junior/1 st semester	12	18	0	18	12	30 0	0	30 0	60 0	3	3	12	0	0	0	0
Junior / 2 nd semester	13	3	12	18	12	26 0	40	30 0	60 0	0	0	15	3	0	1	0
Senior 1/1 st semester	13	6	9	18	12	27 0	30	30 0	60 0	2	0	3	10	0	0	2
Senior 1- 2 nd semester	12	3	12	17	12	26 0	40	30 0	60 0	0	0	0	17	0	0	2
Senior 2/1 st semester	10	9	9	16	10	24 0	10	25 0	50 0	3	0	0	9	0	4	0
Senior 2/ 2 nd semester	11	3	9	15	10	24 0	10	25 0	50 0	2	0	0	6	0	4	3
Total of Five Years	127	84	68	179	116	2700	200	2900	5800	19	39	53	45	8	9	7

% of Five Years										1 0 5 5	2 1 6	2 9 4 4	2 5	4 4 4	5	3 8
% NARS										8 1 2	1 8 2 2	2 5 3 0	2 5 3 0	4 6	4 6	2 4
% ABET											3 0		4 5			

The above table shows the agreement with NARS and ABET requirements.

Elective / Elective Design Courses

Code	Course Name	Level	Semester	Teaching Hours in week			
				Lectures	Tutorial	Practical	Total Hours
ECE 301	إلكترونيات الإتصالات / Electronic Communications	3 rd year	1 st or 2 nd semester	2	3	0	3
ECE 302	منظومات الإتصالات المحمولة / Mobile Communication Systems	3 rd year	1 st or 2 nd semester	2	3	0	3
ECE 303	موجات كهرومغناطيسية / Electromagnetic Waves	3 rd year	1 st or 2 nd semester	2	3	0	3
ECE 304	الإلكترونيات البصرية / Optical Electronics	3 rd year	1 st or 2 nd semester	2	3	0	3
CSE 301	هندسة برمجيات / Software Engineering	3 rd year	1 st or 2 nd semester	2	0	3	3
CSE 302	أساسيات الحاسب وأمن الشبكات / Computer Basics and Network Security	3 rd year	1 st or 2 nd semester	2	0	3	3

CSE 303	أساسيات نظم المعلومات / Fundamentals of Information Systems	3 rd year	1 st or 2 nd semester	2	3	0	3
CSE 304	النظم الموزعة / Distributed Systems	3 rd year	1 st or 2 nd semester	2	3	0	3
ECE 401	تصميم دوائر متكاملة / Design of Integrated circuits	4 th year	1 st or 2 nd semester	2	0	3	3
ECE 402	دوائر ونبائط الترددات العالية / High Frequency circuits and Devices	4 th year	1 st or 2 nd semester	2	0	3	3
ECE 403	هندسة الميكروويف / Microwave Engineering	4 th year	1 st or 2 nd semester	2	3	0	3
ECE 404	الهوائيات / Antennas	4 th year	1 st or 2 nd semester	2	3	0	3
ECE 405	شبكات الإتصالات / Computer Networks	4 th year	1 st or 2 nd semester	2	3	0	3
ECE 406	منظومات الإتصالات عن بعد / Wireless Communication Systems	4 th year	1 st or 2 nd semester	2	3	0	3
ECE 407	معالجة صور رقمية / Digital image processing	4 th year	1 st or 2 nd semester	2	3	0	3
ECE 408	موضوعات مختارة في هندسة الإلكترونيات والإتصالات / selected topics in electronics and Communications	4 th year	1 st or 2 nd semester	2	3	0	3
CSE 401	تفاعل المستخدم- الحاسب / Human Computer interaction	4 th year	1 st or 2 nd semester	2	0	3	3
CSE 402	أنظمة المعلومات المعتمدة على الويب / Information systems based on the Web	4 th year	1 st or 2 nd semester	2	0	3	3
CSE 403	معالجات اللغة / Language processing	4 th year	1 st or 2 nd semester	2	3	0	3

CSE 404	منظومات الوسائط/ Multimedia systems	4 th year	1 st or 2 nd semest er	2	3	0	3
CSE 405	الخوارزميات الموازية/ Parallel algorithms	4 th year	1 st or 2 nd semest er	2	3	0	3
CSE 406	تحليل القرارات/ Decision Analysis	4 th year	1 st or 2 nd semest er	2	3	0	3
CSE 407	الأنظمة المتضمنة والحقيقية/ Real and Embedded systems	4 th year	1 st or 2 nd semest er	2	3	0	3
CSE 408	موضوعات مختارة في هندسة الحاسبات والمعلومات/ selected topics in computers and information	4 th year	1 st or 2 nd semest er	2	3	0	3

7.5. Curriculum Mapping

Appendix 2 shows the curriculum mapping matrix. The mapping matrix shows that the program courses present balanced contribution to the program LO's. Includes also two tables summarizing the program LO's contributed by the individual courses and the courses contributing to the individual LO's. This matrix was developed by the program coordinator, assistant coordinator and professional staff members

7.6 Courses Specifications

The detailed program courses specifications are shown in **Appendix 2**. These courses specifications were revised and approved. The contribution of each course to the program LO's were considered during this revision.

8. Program Admission Requirements

1. 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.
2. The study begins with a freshman year for all students. Students' departmental allocation is in accordance with the Faculty Council regulations.

9. Regulations for Progression and Program Completion

Attendance of program is on full-time basis.

1. A student may be transferred to a following academic year if s/he passes all attended courses but a maximum of two in accumulation – excluding humanity or cultural courses.
2. The humanity and cultural courses are not counted as non-passing courses, but have to be completed before graduation.

3. The study follows the semester system with two semesters per year.
4. The time for the Bachelor degree is four years preceded by a preparatory year.
5. A minimum of 75 % student attendance to lectures, tutorials and laboratory exercises per course is conditional for taking the final exams, in accordance with the Departmental Board recommendation approved by the Faculty Council, otherwise students would be deprived from taking their final exam(s).
6. The student is entitled to re-set failed exam(s) with fellow-students undertaking the course(s) in following term(s).
7. A 65%+ score in re-set exam(s) is reduced to a ceiling of "Pass" grade, except for acceptable excuses.
8. Final-year students who fail no more than two courses plus any number of humanity cultural courses are re-examined in November.
9. If they fail re-set(s), they are entitled to be re-examined with fellow-students undertaking the course(s) in following term(s).
10. Except for those in final-year, students who provide evidence of successfully completing particular courses in parallel academic institutions, which are recognized by the Ministry of Higher Education, may be exempted from attending these courses. This may only take place after a decision from the Academy Chairman, following the Education & Student Affairs Council and the Faculty and Departmental Boards approval respectively; with no desecration of Article (36) of University Regulation Law.
11. The course which is taught in one semester and has one examination mark and more than examination answer sheets, is treated as one-course as regards the course evaluation.
12. If a course includes written and oral / lab tests, the course evaluation is made according to the total mark of all tests in addition to the academic standing throughout the year.
13. No mark is recorded for the student who fails to appear in the written examination.
14. **Appendix 2 also** gives the details of program progression and grades evaluation.

10. Student Evaluation (Methods and rules for student evaluation)

Method (tool)
1- Written exam
2- Quizzes and reports
3- Oral exams
4- Practical
5- Project applied on a practical field problem

11. Program Evaluation

Evaluator	Tool
1- Senior students	questionnaire
2- Alumni	questionnaire
3- Stakeholders	questionnaire
4- External Evaluator(s) (External Examiner (s))	Reports
5- Other societal parties	None

Program coordinator: Prof. Nihal Fayez Areed
Date: 6 October 2021

Signature: