Northern Technical University
الجامعة التقنية الشمالية

First Cycle – Bachelor's Degree (B.Sc.) –

Computer Engineering Techniques بكالوريوس - هندسة تقنيات الحاسوب

Networks and communication branch *فرع الشبكات والاتصالات*

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1. Mission & Vision Statement

Vision Statement

The computer engineering techniques academic staff of the Technical engineering college at Northern Technical University believe that students come to understand the discipline of computer techniques through a combination of course work, laboratory experiences, and research. The combination of instructional methods leads students to a balanced understanding of the scientific methods used by computer specialists to make observations, develop insights and create theories about the living organisms that populate our planet.

Mission Statement

The computer engineering techniques academic staff pursues a multifaceted charge at Northern Technical University. The Program seeks to provide all computer engineering students with fundamental knowledge of computer, as well as a deeper understanding of a selected focus area within the field. The curriculum and advising have been designed to prepare graduates for their professional future, whether they choose to work in hardware or software to pursue advanced degrees in modern technologies of networks and electronics of computers. In addition, computer engineering techniques courses provide a key laboratory science experience for those students seeking to complete the general education requirements

2. Program Specification

Programme code:	BSc-COM	**ECTS**	240
Duration:	4 levels, 8 Semesters	**Method of Attendance:**	Full Time

This program specification provides a concise summary of the main features of the program and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the program.

The program aims to graduate students with a specialization in computer technology engineering who will be qualified to work in the fields of computer. He will be graduated by a department after completing four academic years in which he is qualified to obtain a bachelor's degree in computer technology engineering.

Program Goals .3

- Aims at knowing computer programs
- It aims to learn mathematics and engineering analysis.
- aims to learn the skill of designing programs and codes.
- aims to learn computer networks
- aim to learn digital communication and fundamentals
- aim to learn computer electronics and hardware.

Student Learning Outcomes .1

Outcome 1

Graduates will be able to illustrate the structure and function of computer device components and explain how they connected.

Outcome 2

Oral and Written Communication

Graduates will be able to formally communicate the results of computer programs using both oral and written communication skills.

Outcome 3

Scientific Knowledge

Graduates will be able to demonstrate a balanced concept of how scientific knowledge develops, including the historical development of foundational theories and laws and the nature of science.

Outcome 4

Data Analyses

Graduates will be able to demonstrate scientific quantitative skills, such as the ability to conduct simple data analyses.

Outcome 5

Critical Thinking

Graduates will be able to use critical-thinking and problem-solving skills to develop a research project and/or paper.

Academic Staff .2

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Credits, Grading and GPA .3

Credits

Northern Technical University is following the Bologna Process with the European Credit Transfer System (ECTS) credit system. The total degree program number of ECTS is 240, 30 ECTS per semester. 1 ECTS is equivalent to 25 hrs student workload, including structured and unstructured workload.

Grading

Before the evaluation, the results are divided into two subgroups: pass and fail. Therefore, the results are independent of the students who failed a course. The grading system is defined as follows:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	راسب - قيد المعالجة	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				
Number Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.				

Calculation of the Cumulative Grade Point Average (CGPA)

1. The CGPA is calculated by the summation of each module score multiplied by its ECTS, all are divided by the program total ECTS.

   CGPA of a 4-year B.Sc. degree:

   CGPA = [(1st module score x ECTS) + (2nd module score x ECTS) + ……] / 240

Curriculum/Modules .4

Semester 1 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
COE111	English Language	32	43	3.00	B	
COE112	Engineering drawings	62	38	4.00	B	
COE113	Differentiation and Integration	92	83	7.00	B	
COE114	Electrical engineering fundamentals.	124	76	8.00	C	
COE115	Computer Programming	124	76	8.00	C	

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
COE121	Human rights and democracy	62	38	4.00	B	
COE122	Workshops	62	38	4.00	B	
COE123	Computer applications	94	81	7.00	B	
COE124	Logic circuits	124	76	8.00	C	
COE125	Computer organization	94	81	7.00	C	

Semester 3 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
COE211	English Language	32	43	3.00	B	
COE212	Mathematics	92	58	6.00	B	
COE213	Computer arcitecture	124	76	8.00	C	
COE214	Object Oriented Programming	124	76	8.00	C	
COE215	Data base systems	64	61	5.00	B	

Semester 4 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
COE221	Measurments and instruments	94	56	6.00	C	
COE222	Communications fundemental	94	56	6.00	C	
COE223	Physics	32	43	3.00	B	
COE224	Operating systems	94	56	6.00	B	
COE225	Electronic	94	56	6.00	C	
COE226	Job Ethics	32	43	3.00	B	

Semester 5 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
COE311	English Language	32	43	3.00	B	
COE312	Engineering analysis	94	56	6.00	B	
COE313	Control engineering fundemental	124	76	8.00	C	
COE314	Real time systems	94	56	6.00	C	
COE315	Signal processing	124	51	7.00	C	

Semester 6 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
COE321	Digital communications	94	56	6.00	C	
COE322	Microcontrollers	124	76	8.00	C	
COE323	Computer networks	124	76	8.00	C	
COE324	Networks simulators	64	36	4.00	C	
COE325	Cyber security	64	36	4.00	C	

Semester 7 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
COE411	English Language	32	43	3.00	B	
COE412	Smart Systems Modeling	94	56	6.00	C	
COE413	Multimedia Computing	94	56	6.00	C	
COE414	Networks Protocols	94	56	6.00	C	
COE415	Computer graphics	94	56	6.00	C	
COE416	Graduation Project P	45	30	3.00	C	

Semester 8 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
COE421	Information Theory	94	31	5.00	C	
COE422	Computer Security	94	56	6.00	C	
COE423	Mobile Communications	94	56	6.00	C	
COE424	Projects Managements	64	36	4.00	B	
COE425	Wireless communications	94	56	6.00	C	
COE426	Graduation project T	45	30	3.00	C	

Contact .5

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