Ninevah University

Electronics Engineering College

Electronic Engineering Department

جامعة نينوى /بكالوريوس علوم في هندسة الإلكترونيك

Table of Contents جدول المحتويات

1. Mission & Vision Statement

• University vision

Achieving education high quality and distinction in the fields of teaching and learning, developing and disseminating knowledge for community service, leading to an advanced position among universities.

• College vision

Leadership and excellence in engineering sciences and the best use of resources for scientific research and community service.

• Department vision

The Electronic Engineering Department aims to to the development of the electronics industry, the preparation of distinguished scientific personnel, and the qualification of undergraduate and postgraduate students to meet the needs of society and the market.

• University Mission

Providing advanced programs for higher education according to high standards to qualify more efficient graduates who contribute to the cognitive, economic and social development of society and consider its peculiarities. With commitment to spiritual, ethical and professional values, creating an environment conducive to learning and intellectual creativity, supporting human rights, preserving the environment, optimal employment of technology, providing academic freedom, striving to produce creative research that contributes to building a knowledge society, and providing technical advice to raise the level of performance of community institutions.

• College Mission

1. Education: Providing specialized educational engineering programs with a precise specialization for undergraduate and postgraduate studies, and providing a distinguished and recognized educational environment such that its graduates have high professional experience and basic engineering education that enables them to contribute effectively to serving their community and raising the level and advancement of their profession.

2. Research: Providing a research environment to enable its professors, researchers and students to conduct research in basic, applied and exploratory engineering fields and apply available and new knowledge in a way that serves society and interacts with the world.

3. Leadership: Developing the leadership potential of members and students and

build the capabilities of self-education and induction so that those who possess talent in the field of the profession can lead society in an honest manner.

4. Community service: interacting with the community and engaging in the field of developing the industry and engineering institutions, which in turn leads to the social and economic development of through consultation, continuing education, and commitment to industrial problems to provide solutions.

• Department mission

Provide high-quality engineering programs aligned with international standards, aimed at preparing qualified graduates to serve the community and advance the profession. The mission also emphasizes promoting scientific research to produce engineering knowledge that addresses real-world challenges and supports sustainable development, fostering leadership skills and critical thinking among students and staff, and contributing to the development of industry and engineering institutions to achieve economic and social progress**.**

• Department Objectives

1. To graduate competent engineers in the field of Electronic Engineering with the ability to identify, analyze, and develop effective solutions to practical problems, and to skillfully use modern technologies.
2. To prepare engineers capable of working collaboratively and professionally with specialists, decision-makers, and others in their professional environment.

3. To prepare graduates for enrollment in postgraduate programs locally and internationally, and for work in research centers.
4. To prepare engineers who adhere to professional standards and ethical responsibilities in the practice of Electronic Engineering
5. To actively contribute to societal progress through seminars, conferences, and continuing education in the field of Electronic Engineering, while adopting a continuous improvement approach for all activities and programs.

Department website: https://uoninevah.edu.iq/ee/Elec-dept/

College website: https://uoninevah.edu.iq/ee/

University website: https://uoninevah.edu.iq/en/vision-mission-and-goals/ .

2. Program Specification

Program code:	Electronic Engineering	**ECTS**	240
Duration:	4 levels, 8 Semesters	**Method of Attendance:**	Full Time

3. Program Goals

1. Prepare highly qualified engineers specializing in industrial electronics and medical device electronics who meet the demands of the market.

2. Produce scientific and applied research in various fields of electronic engineering that contributes to solving industrial and service-related problems in the community.

3. Offer postgraduate degrees in the department specialization in accordance with high academic standards.

4. Enhance the department's role in community service through organizing seminars, conferences, and continuing education programs.

4. Student Learning Outcomes

1. An ability to distinguish, identify, define, formulate, and solve engineering problems by applying principles of engineering, science, and mathematics.
2. An ability to produce engineering designs that meet desired needs within certain constraints by applying both analysis and synthesis in the design process.
3. An ability to create and carry out proper measurements and tests with quality assurance, analyze and interpret results, and utilize engineering judgment to make inferences.
4. An ability to skillfully communicate orally with a gathering of people and in writing with various managerial levels.
5. An ability to perceive ethical and professional responsibilities in engineering cases and make brilliant judgments considering the consequences of worldwide financial, ecological, and societal considerations.

6. An ability to perceive the continual necessity for professional knowledge growth and how to find, assess, assemble, and apply it properly.
7. An ability to work adequately on teams and to set up objectives, plan activities, meet due dates and manage risk and uncertainty.

5. Academic Staff

The following table 1 lists the faculty members along with links to their CVs:

Table 1: Faculty Member CVs

Name	CV Link
Harith Ahmed Mohammed	CV (PDF)
Qais Thanon Najim	CV (PDF)
Ahmed Mohammed Ahmed	CV (PDF)
Aws Zuheer Yonis	CV (PDF)
Sahar Lazim Qaddori	CV (PDF)
Omar Badr Mohammed	CV (PDF)
Ehab Isam Dawood	CV (PDF)
Sarmad Fakhrudden Ismael	CV (PDF)
Harith Hazim Thannoon	CV (PDF)
Shawkat Mohammed Younus	CV (PDF)
Hiba Abdalkhalq Hmdoon	CV (PDF)
Sinan Khalid Mohammed	CV (PDF)
Noor Talal Mohammed	CV (PDF)
Khalid Fazaa Mahmmod	CV (PDF)

Hamsa Fawaz Thanoon	**CV (PDF)**
Asmaa Nabeel khaleel	**CV (PDF)**
Younis Saber Othman	**CV (PDF)**
Maysara Abduljabbar Qasim	**CV (PDF)**
Zahraa Siddiq Yahya	**CV (PDF)**
Rasha Waleed Hamad	**CV (PDF)**
Noor Alhuda Saad Abbas	**CV (PDF)**
Hisham Mohammed Mahmood	**CV (PDF)**
Omar Najeeb Saadi	**CV (PDF)**
Mohammed Salih Safer	**CV (PDF)**
Saif Al-deen Kamal Hiad	**CV (PDF)**
Hajir Khalil Ibrahim	**CV (PDF)**
Sidra Abduljabbar Youssef	**CV (PDF)**
Jumana Younis Ahmed	**CV (PDF)**

6. Credits, Grading and GPA

- **Credits**

Electronic Engineering Department 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 student workloads, including structured and unstructured workload.

- **Grading**

The grading scheme at Electronic Engineering Department is designed to evaluate student performance comprehensively, dividing grades into two main groups: Success and Fail.

In the Success Group, grades range from A to E. An A (90-100%) signifies outstanding performance, while a B (80-89%) indicates very good work with minor errors. A grade of C (70-79%) reflects sound work, albeit with notable mistakes, whereas a D (60-69%) represents satisfactory performance that shows significant shortcomings. Lastly, an E (50-59%) denotes that the work meets the minimum criteria required to pass.

Conversely, the Fail Group includes grades FX and F. An FX (45-49%) indicates that more work is needed, but credit is still awarded, while an F (0-44%) signifies that a considerable amount of additional work is required to meet course standards.

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: Marks 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 Grade Point Average (GPA)**

  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

7. Curriculum/Modules

• Engineering of Medical Device Electronics

Semester 1 | 30 ECTS | 1ECTS =25 hrs.

Code	Module	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Type	Prerequisite
NVEE215	DC Circuits Analysis	153	22	175	7.00	C	
NVEE206	Mathmatics I	63	87	150	6.00	C	
NVEE218	Physical Electronics	48	102	150	6.00	C	
NVU10	Computer Skills and Artificial Intelligence 1	63	12	75	3.00	B	
NVEE203	Mechanical engineering principles	48	102	150	6.00	C	
NVU12	Democracy and Human Rights	33	17	50	2.00	B	

Semester 2 | 30 ECTS | 1ECTS =25 hrs

Code	Module	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Type	Prerequisite
NVEE216	AC Circuits Analysis	108	67	175	7.00	C	NVEE215
NVEE207	Mathematics II	63	87	150	6.00	C	NVEE206

NVEEE314	Physics of Semiconductors	48	127	175	7.00	C	
NVEE217	Digital Techniques	63	87	150	6.00	C	
NVEE201	Engineering Drawing	48	2	50	2.00	B	
NVU11	English 1	33	17	50	2.00	B	

Semester 3 | 30 ECTS | 1ECTS =25 hrs.

Code	Module	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Type	Prerequisite
NVEE208	Engineering Analysis I	63	62	125	5.00	B	NVEE207
NVEE212	Analog Electronics I	77	73	150	6.00	B	
NVEE210	Signals and systems 1	63	62	125	5.00	B	
NVEEELM222	programming	63	87	150	6.00	C	
NVEEELM215	Electromagnetic fields I	48	102	150	6.00	C	
NVU13	The crimes of the defunct Baath Party	33	17	50	2.00	B	

Semester 4 | 30 ECTS | 1ECTS =25 hrs

Code	Module	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Type	Prerequisite
NVEE211	Systems Analysis II	78	47	125	5.00	B	
NVEE209	Engineering Analysis II	48	77	125	5.00	B	NVEE208
NVEE213	Electronic II	78	47	125	5.00	B	
NVEEELM223	Digital design	48	52	100	4.00	C	
NVU18	Computer Skills and Artificial Intelligence 2	48	27	75	3.00	B	

NVEEELM 217	Human Physiology	63	37	100	4.00	B	
NVU15	English II	33	17	50	2.00	B	
NVU16	Arabic I	33	17	50	2.00	B	

Semester 5 | 30 ECTS | 1ECTS =25 hrs

Code	Module	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Type	Prerequisite
NVEEELM301	Digital Signal Processing I	63	37	100	4.00	C	NVEE210
NVEEELM302	Power Electronics	63	37	100	4.00	C	
NVEEELM303	Measurements Instruments Systems	47	28	75	3.00	C	
NVEEELM304	Medical Sensors and Transducers	32	43	75	3.00	C	
NVEEELM305	Digital systems design using HDL	63	37	100	4.00	C	
NVEEELM306	Analog Electronics III	78	47	125	5.00	C	NVEE213
NVEEELM307	Numerical Analysis	47	78	125	5.00	C	
NVU17	Arabic II	32	18	50	2.00	B	NVU16

Semester 6 | 30 ECTS | 1ECTS =25 hrs

Code	Module	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Type	Prerequisite
NVEEELM308	Digital Signal Processing II	63	37	100	4.00	C	NVEEELM301
NVEEELM309	Probability and Statistics	47	78	125	5.00	C	NVEE209
NVEEELM310	Medical Physics	48	52	100	4.00	C	
NVEEELM311	Communication	32	43	75	3.00	C	
NVEEELM312	Medical Instruments	48	77	125	5.00	C	NVEEELM303

NVEEELM313	Medical Electronics Systems	48	77	125	5.00	C	NVEEELM306
NVEEELM314	Electro and Analytical Chemistry sciences	47	53	100	4.00	C	

Semester 7 | 30 ECTS | 1ECTS =25 hrs

Code	Module	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Type	Prerequisite
NVEEELM401	Modeling and Optimization I	63	87	150	6.00	C	
NVEEELM402	Microprocessor	63	62	125	5.00	C	
NVEEELM403	Control Engineering	63	87	150	6.00	C	
NVEEELM404	Microwave and Radiation Engineering	47	78	125	5.00	C	
NVEEELM405	Microelectronics	48	102	150	6.00	C	
NVEEELM406	Graduation Project Design	47	3	50	2.00	C	

Semester 8 | 30 ECTS | 1ECTS =25 hrs

Code	Module	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Type	Prerequisite
NVEEELM407	Modeling and Optimization II	63	87	150	6.00	C	
NVEEELM408	Medical Imaging	48	102	150	6.00	C	
NVEEELM409	Microcontroller	63	62	125	5.00	C	
NVEEELM410	Medical Laser Systems	48	102	150	6.00	C	

NVEEELM411	Computer Network	47	78	125	5.00	C	
NVEEELM412	Graduation Project Implementation	47	3	50	2.00	C	

- **Engineering of industrial electronics**

Semester 1 | 30 ECTS | 1ECTS =25 hrs.

Code	Module	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Type	Prerequisite
NVEE215	DC Circuits Analysis	153	22	175	7.00	C	
NVEE206	Mathmatics I	63	87	150	6.00	C	
NVEE218	Physical Electronics	48	102	150	6.00	C	
NVU10	Computer Skills and Artificial Intelligence 1	63	12	75	3.00	B	
NVEE203	Mechanical engineering principles	48	102	150	6.00	C	
NVU12	Democracy and Human Rights	33	17	50	2.00	B	

Semester 2 | 30 ECTS | 1ECTS =25 hrs

Code	Module	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Type	Prerequisite
NVEE216	AC Circuits Analysis	108	67	175	7.00	C	NVEE215
NVEE207	Mathematics II	63	87	150	6.00	C	NVEE206
NVEEE314	Physics of Semiconductors	48	127	175	7.00	C	
NVEE217	Digital Techniques	63	87	150	6.00	C	

NVEE201	Engineering Drawing	48	2	50	2.00	B	
NVU11	English 1	33	17	50	2.00	B	

Semester 3 | 30 ECTS | 1ECTS =25 hrs.

Code	Module	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Type	Prerequisite
NVEE208	Engineering Analysis I	63	62	125	5.00	B	NVEE207
NVEE212	Analog Electronics I	77	73	150	6.00	B	
NVEEELI 213	DC Machines	78	72	150	6.00	C	
NVEEELI 214	Computer Programming	63	62	125	5.00	B	
NVU13	The crimes of the defunct Baath Party	33	17	50	2.00	B	
NVEEELI 221	Electromagnetic fields	63	87	150	6.00	C	

Semester 4 | 30 ECTS | 1ECTS =25 hrs

Code	Module	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Type	Prerequisite
NVEE209	Engineering Analysis II	48	77	125	5.00	B	NVEE208
NVEE213	Analog Electronics II	78	47	125	5.00	B	NVEE212
NVEEELI 223	AC Machines	78	72	150	6.00	C	
NVU18	Computer Skills and Artificial Intelligence 2	48	27	75	3.00	B	
NVEEELI 224	Digital Design	48	52	100	4.00	C	
NVEEELI 225	Signals and Systems	63	12	75	3.00	C	
NVU15	English II	33	17	50	2.00	B	
NVU16	Arabic I	33	17	50	2.00	B	

Semester 5 | 30 ECTS | 1ECTS =25 hrs

Code	Module	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Type	Prerequisite
NVEEELI 301	Power Converters I	48	77	125	5.00	C	
NVEEELI 302	Control Engineering I	63	37	100	4.00	C	
NVEEELI 303	Measurements Instruments Systems	47	28	75	3.00	C	
NVEEELI 304	Numerical Analysis	47	78	125	5.00	C	
NVEEELI 305	Digital systems design using HDL	63	37	100	4.00	C	
NVEEELI 306	Analog Electronics III	78	47	125	5.00	C	NVEE213
NVEEELI 307	Sensors and Actuators	32	18	50	2.00	C	
NVU17	Arabic II	32	18	50	2.00	B	NVU16

Semester 6 | 30 ECTS | 1ECTS =25 hrs

Code	Module	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Type	Prerequisite
NVEEELI308	Power Converters II	48	77	125	5.00	C	NVEEELI301
NVEEELI309	Control Engineering II	63	37	100	4.00	C	NVEEELI302
NVEEELI310	Probability and Statistics	47	78	125	5.00	C	NVEEELI304
NVEEELI311	Communicati on	32	43	75	3.00	C	
NVEEELI312	Programmabl e Logic Controllers	63	62	125	5.00	C	NVEEELI307
NVEEELI313	Digital Signal Processing	63	37	100	4.00	C	
NVEEELI314	Microprocess ors	63	37	100	4.00	C	

Semester 7 | 30 ECTS | 1ECTS =25 hrs

Code	Module	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Type	Prerequisite
NVEEELI401	Modeling and Optimization I	63	87	150	6.00	C	
NVEEELI402	Microcontroller	63	62	125	5.00	C	
NVEEELI403	Switch-Mode Power Supplies	63	87	150	6.00	C	
NVEEELI404	Electrical Drives	48	102	150	6.00	C	
NVEEELI405	Renewable Energy Sciences	48	77	125	5.00	C	
NVEEELI406	Graduation Project Design	47	3	50	2.00	C	

Semester 8 | 30 ECTS | 1ECTS =25 hrs

Code	Module	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Type	Prerequisite
NVEEELI407	Modeling and Optimization II	63	87	150	6.00	C	NVEEELI401
NVEEELI408	Battery Management Systems	48	102	150	6.00	C	
NVEEELI409	Smart Grid Systems	48	77	125	5.00	C	
NVEEELI410	Electric Vehicles	48	102	150	6.00	C	
NVEEELI411	Computer Network	47	78	125	5.00	C	
NVEEELI412	Graduation Project Implementation	47	3	50	2.00	C	