Ninevah University

جامعة نينوى

First Cycle – Bachelor's degree (B.Sc.) – Communication Engineering

بكالوريوس علوم - هندسة الاتصالات

Table of Contents | جدول المحتويات

1. Mission & Vision Statement

Vision Statement

Our program envisions graduates who are well-equipped to address complex challenges in the field of communication engineering. They will possess strong analytical and problem-solving abilities, along with the creativity to design innovative solutions for communication networks, wireless technologies, and information transmission. We are committed to nurturing a culture of research and innovation, encouraging our students to push the boundaries of knowledge and contribute to advancements in communication engineering. Through collaborations with industry partners and academic institutions, we aim to provide opportunities for interdisciplinary research and technology transfer, ensuring our graduates are at the forefront of industry developments. Through our commitment to excellence, innovation, and ethical engineering practices, we aspire to be recognized as a leader in Communication Engineering education, producing graduates who are sought-after by industry, academia, and research institutions worldwide.

Mission Statement

Our mission is to provide a rigorous and comprehensive education in Communication Engineering, equipping students with the knowledge, skills, and ethical values necessary to excel in the rapidly developing field of communication systems and technologies. Our program emphasizes the mastery of core principles in areas such as signal processing, data transmission, networking protocols, mobile communication, and emerging technologies. We strive to equip our students with a strong foundation that enables them to analyze, design, and optimize communication systems to meet the demands of the digital age. Our mission is to produce graduates who are not only technically proficient in communication engineering but also possess the ability to think critically, solve complex problems, and contribute meaningfully to the advancement of communication systems and technologies. By upholding high academic standards, promoting a culture of excellence, and fostering a supportive and inclusive learning environment, we aim to be recognized as a distinct program in Communication Engineering, producing skilled professionals who are in demand by industry, academia, and research institutions worldwide.

2. **Program Specification**

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

Recognizing the significant influence of communication in our everyday lives, it became crucial to adapt and provide education that outfits to the evolving landscape. As a result, the College of Electronics Engineering took the initiative in 2002 to establish a specialized undergraduate program in Ninevah province specifically focused on Communications engineering. This program was carefully designed to train students with a comprehensive understanding of various subjects that form the foundation of knowledge in this rapidly progressing field. By offering a diverse range of courses, the program aims to prepare students for the dynamic challenges and opportunities brought forth by the modern era of communications.

The program follows a structured curriculum, with Level 1 serving as an introduction to the fundamentals of communication engineering, providing a solid basis for progressing into specialized topics within the field. Programme-specific core subjects are covered at Level 2, laying the groundwork for more specialized modules at Levels 3 and 4. Additionally, the program incorporates a sufficient number of modules dedicated to general knowledge, science, and mathematics. At Levels 3 and 4, students are exposed to a wide range of modules that are specifically tailored to strengthen their understanding of various communication systems and applications. These modules ensure that graduates with a degree in communication engineering possess the breadth of knowledge expected of them. Learning outcomes from these modules enable students to acquire the necessary skills to understand, analyze, and design processing elements at different stage of communication systems. These stages include comprehensive modules as signals and systems, digital signal processing, computer programming and microprocessor design for communication purposes, analogue and digital communications. Moreover, there are numerous advance modules for various types of communications distributed in the courses such as electromagnetic fields, microwave communications and devices, electronics communication, radiation and preparation theories, satellite communication, radar and secure communication, fiber optics communication, mobile and wireless communications, theory and design of antennas, computer networks and data communications. The program adopts a research-oriented ethos from the outset, integrating practical within lecture modules or dedicated practical modules, as well as facilitating research seminars and tutorials. Moreover, at Level 4, students undertake a capstone research project under the guidance of a supervisor who monitors their progress throughout the process. Furthermore, the program offers opportunities for summer training, internships, and industrial placements. Individual needs and preferences are discussed with the appropriate tutors, and accommodations are made whenever possible to ensure a fulfilling and well-rounded educational experience.

# 3.	Program Goals

The following program goals are designed to equip students with a strong technical foundation, practical skills, ethical values, and a holistic understanding of communication engineering. They prepare graduates for successful careers in various sectors, including telecommunications, networking, wireless communication, and cutting-edge advancements.

1. Develop Technical Proficiency: Provide students with a strong foundation in the principles and theories of communication engineering, including signal processing, data transmission, networking protocols, microwave propagation, optical & wireless communication, and emerging technologies. Develop technical skills necessary for the design, analysis, and optimization of communication systems.

2. Enhance Design and Implementation Skills: Equip students with the knowledge and skills to design, implement, and evaluate communication systems. Develop proficiency in utilizing software tools, simulation techniques, and laboratory experiments to validate and optimize system performance.

3. Foster Effective Communication: Enhance students' oral and written communication skills to effectively convey technical information and ideas. Develop the ability to collaborate in student work teams, present technical concepts, and prepare professional reports and documentation.

4. Encourage Research and Innovation: Promote a culture of research and innovation by providing opportunities for undergraduate research, encouraging involvement in industry projects, and supporting collaboration with faculty and industry partners. Develop critical thinking and research skills to address emerging challenges in communication engineering.

# 4.	Student Learning Outcomes

The field of communication engineering focuses on the study of the organization and operation of communication systems at various levels, including design, analysis the signal processing of these systems. Graduates gain comprehensive knowledge of the various aspects of communication systems and apply fundamental principles and theory to address broader concepts. The Communication Engineering department offers a Bachelor of Science program in Communication Engineering through providing courses with wide range of spectrum to deliver a comprehensive education in the field of communication engineering. The curriculum and experiences in the department are designed to prepare students, in part, for entry into professional programs in technology and engineering, pursue advanced studies, embark on technical careers, and engage in education.

1. Proficiency in fundamental concepts: Demonstrate a strong knowledge of fundamental principles and core concepts in communication engineering, including signal processing. Signal transmission and detection, in addition to understand the theoretical concepts of various communication systems.

2. Problem-solving skills: Develop the ability to analyze problems related to different type of communication systems, and apply critical thinking and problem-solving techniques to design, implement, and evaluate efficient and innovative solutions.

3. Technical competency: Acquire practical skills and proficiency in utilizing various equipment and instruments in the communication laboratories. These tools include spectrum and network analyzer, advanced modulation and demodulation systems over different types of channels. Moreover, these are different available softwares that support the practical experiments such as Matlab, CST microwave studio, and advanced design system softwares.

4. Collaboration and teamwork: Demonstrate effective teamwork and collaboration skills by actively participating in group seminars and projects, engaging in team-based and collaborative problem-solving activities, and effectively communicating with peers working in an interdisciplinary project.

5. Communication skills: Develop strong written and oral communication skills to effectively convey technical concepts, ideas, and solutions in a clear and formal manner to both technical and non-technical audiences, including presenting research findings, documenting communication systems, and preparing comprehensive technical reports.

5. Academic Staff

Mahmod Ahmad Mahmod | Ph.D. in Electronics and Communications | Assistant Prof.
Email: mahmod.mahmod@uoninevah.edu.iq

Younis M. Abbosh | Ph.D. in Electronics and Communications | Assistant Prof.
Email: younis.abbosh@uoninevah.edu.iq

Dia Mohammad Ali | Ph.D. in Electronics and Communications | Assistant Prof.
Email: dia.ali@uoninevah.edu.iq

Ali Othman Mohammad | Ph.D. in Electronics and Communications | Assistant Prof.
Email: ali.mohammed@uoninevah.edu.iq

Mohamad Abdulrahman Ahmed | Ph.D. in Communications Engineering | Assistant Prof.
Email: mohamad.alhabbar@uoninevah.edu.iq

Safwan Hafidh Younis | Ph.D. in Communications Engineering | Assistant Prof.
Email: Safwan.younus@uoninevah.edu.iq

Adham Maan Salih | Ph.D. in Communications Engineering | Lecturer
Email: adham.saleh@uoninevah.edu.iq

Zainab Rami Saleh Alomari | Ph.D. in Communications and Computer Engineering | Lecturer
Email: zainab.saleh@uoninevah.edu.iq

Ali AbdulMohsin Saadoon AlAbdullah | Ph.D. in Communications Engineering | Lecturer
Email: ali.saadoon@uoninevah.edu.iq

Zaid Hatim Thanon | Ph.D. in Communications Engineering | Lecturer
Email: zaid.dhannoon@gmail.com

Ikhlas Ahmad Basheer | M.Sc. in Mechanical Engineering | Lecturer
Email: Ekhlas.basheer@uoninevah.edu.iq

Wasan Mamdoh Abdulatef | M.Sc. in Electronics and Communications | Lecturer
Email: wasan.abdulatef@uoninevah.edu.iq

Qusay Hady Sultan | M.Sc. in Communications Engineering | Lecturer
Email: qusai.sultan@uoninevah.edu.iq

Laith Talal Fattah | M.Sc. in Electronics and Communications | Assistant Lecturer
Email: layth.fatah@uoninevah.edu.iq

Sulaiman Nooruldeen Khaleel | M.Sc. in Electronics and Communications | Assistant Lecturer
Email: sulaiman.khaleel@uoninevah.edu.iq

Anas Khalid Abdullah | M.Sc. in Electronics and Communications | Assistant Lecturer
Email: anas.abdullah@uoninevah.edu.iq

Tariq Adnan Najem | M.Sc. in Communications Engineering | Assistant Lecturer
Email: tareq.najm@uoninevah.edu.iq

Mohammad Sameer Salem | M.Sc. in Communications Engineering | Assistant Lecturer
Email: mohammed.salim@uoninevah.edu.iq

Mohammad Zuhair Mohammad Fawzi | M.Sc. in Communications Engineering | Assistant Lecturer
Email: mohammed.zuhair@uoninevah.edu.iq

Mohammad Ameer Abd | M.Sc. in Electronics and Communications | Assistant Lecturer
Email: mohammed.alahmed@uoninevah.edu.iq

Omar khazal siddeq | M.Sc. in Electronics and Communications | Assistant Lecturer
Email: omar.siddeq@uoninevah.edu.iq

Hiba Saad Mahmod | M.Sc. in Computer Engineering | Assistant Lecturer
Email: hiba.mahmood@uoninevah.edu.iq

Amina Nawfal Ismaeel | M.Sc. in Computer Techniques Engineering | Assistant Lecturer
Email: amina.ismael.uoninevah.edu.iq

Dena Nameer Abduljabbar | M.Sc. in Electronic Engineering | Assistant Lecturer
Email: denaqasimagha@uoninevah.edu.iq

Rana Raad Shakir | M.Sc. in Communications Engineering | Assistant Lecturer
Email: rana.raad@uoninevah.edu.iq

Ameen Ahmad Ameen | M.Sc. in Communications Engineering | Assistant Lecturer
Email: ameen.alfiza@uoninevah.edu.iq

Shatha Mohammad Ali | M.Sc. in Communications Engineering | Assistant Lecturer
Email: shatha.ali@uoninevah.edu.iq

Sura Zeno Thanon | M.Sc. in Communications Engineering | Assistant Lecturer
Email: sura.thannon@uoninevah.edu.iq

Ibrahim Mohammad Younis | M.Sc. in Computer Techniques Engineering | Assistant Lecturer
Email: ibrahim.younis@uoninevah.edu.iq

Zahraa Zuhair Yahya | M.Sc. in Communications Engineering | Assistant Lecturer
Email: zahraa.yahya@uoninevah.edu.iq

Ahmed amer saeed | M.Sc. in Communications Engineering | Assistant Lecturer

Email: ahmed.amer@uoninevah.edu.iq

Sama Mumtaz Mohammad | M.Sc. in Physics Sciences | Assistant Lecturer
Email: Sama.M.aldabagh@gmail.com

Shirwan KhairAldin Yaqob | M.Sc. in Physics Sciences | Assistant Lecturer
Email: sherwan.kheralden@uoninevah.edu.iq

6. Credits, Grading and GPA

Credits

Ninevah 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

7. Curriculum/Modules

Semester 1 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Prerequisite Module(s) Code
NVEECM311	Computer Science & Programming	90	60	6	B	
NVEE215	DC Circuit Analysis	90	85	7	B	
NVEECM206	Mathematics I	60	90	6	B	
NV11	English	30	20	4	B	
NVEE217	Digital Techniques	75	50	5	C	
NVEE203	Mechanical Engineering Principles	60	40	4	C	

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Prerequisite Module(s) Code
NVEECM321	Computer Programming I	75	50	5	C	-
NVEE216	AC circuit analysis	90	85	7	B	-
NVEE207	Mathematics II	60	90	6	B	-
NVEE218	Physics of Electronics	75	50	5	B	-
NVEE223	Digital Circuits Design	75	50	5	C	NVEE217
NV12	Democracy & Human Rights	30	20	2	S	-

Semester 3 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Prerequisite Module(s) Code
NVEECM331	Communication Transmission Lines	75	75	6	C	-
NVEE220	Electrostatic Fields	60	65	5	C	-
NVEE224	Electronic I	75	25	4	C	-
NVEE208	Engineering Analysis I	60	65	5	B	NVEE207
NVEE201	Engineering Drawing	45	55	4	B	-
NVEECM333	Computer Programming II	75	75	6	C	NVEECM321

Semester 4 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Prerequisite Module(s) Code
NVEECM341	Analog Communication	75	75	6	C	-
NVEE221	Electromagnetic Fields	60	90	6	C	NVEE220
NVEE225	Electronic II	60	65	5	C	NVEE224
NVEE209	Engineering Analysis II	60	65	5	B	NVEE208
NVEE210	Signals and systems	90	60	6	C	
NV13	The Crimes of the defunct Baath party	30	20	2	S	-

Semester 5 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Prerequisite Module(s) Code
NVEECM351	Digital Communications I	75	75	6	C	NVEECM341
NVEECM352	Microprocessor programming	60	40	4	C	-
NVEECM353	Microwave Engineering I	60	65	5	C	NVEE221
NVEE204	Digital Signal processing I	90	85	7	B	NVEE210
NVEECM354	Electronics Communication	75	75	6	C	NVEE225
NVEE202	Industrial Management and Professional Ethics	30	20	2	S	-

Semester 6 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Prerequisite Module(s) Code
NVEECM361	Digital Communication II	75	75	6	C	NVEECM351
NVEECM362	Microprocessor Applications	60	40	4	C	NVEECM352
NVEECM363	Microwave Engineering II	60	65	5	C	NVEECM353
NVEE205	Digital Signal Processing II	90	60	6	B	NVEE204
NVEECM364	Electronic Measurements & Instrumentation	60	65	5	C	-
NVEE213	Control Engineering Principles	60	40	4	C	-

Semester 7 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Prerequisite Module(s) Code
NVEECM371	Antenna Engineering	75	75	6	C	NVEECM363
NVEECM372	Secure Communication	75	50	5	C	-
NVEECM373	Mobile Communication	75	75	6	C	NVEECM361
NVEECM374	Telephony Systems	60	65	5	C	NVEECM361
NVEECM375	Data Communication	105	45	6	C	
NVEE211	Design of Graduation Project	30	20	2	B	-

Semester 8 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Prerequisite Module(s) Code
NVEECM381	Radiation and Propagation	75	75	6	C	NVEECM371
NVEECM382	Optical Communication	75	75	6	C	-
NVEECM383	Radar systems	60	65	5	C	-
NVEECM384	Satellite Communication	60	65	5	C	-
NVEECM385	Computer Network	90	60	6	C	NVEECM375
NVEE212	Implementation of graduation Project	30	20	2	B	NVEE211

8. Contact

Program Manager: Assistant Professor Dr. Mahmod Ahmed Mahmod| Ph.D. in Signal processing for Communication | Assistant Professor of Communication Engineering

Email: mahmod.mahmod@uoninevah.edu.iq

Mobile no.:

Program Coordinator: Mr. Tariq Adnan Najm | MSc. in Communication Engineering | Lecturer

Email: tareq.najm@uoninevah.edu.iq

Mobile no.: