

Ninevah University

جامعة نينوى



*First Cycle – Bachelor's Degree (B.Sc.) - College of
Information Technology – Software Dept.*

بكالوريوس – تكنولوجيا المعلومات - قسم البرمجيات



Table of Contents | جدول المحتويات

1.0 Mission & Vision Statement	3
1.1 Mission Statement	3
1.2 Vision Statement	3
2.0 Program Specification	3
2.1 Software Science Undergraduate Program Specifications:	3
3.0 Program Objectives	5
4.0 Student Learning Outcomes	6
5.0 Academic Staff	7
6.0 Credits, Grading and GPA	10
6.1 Credits	10
6.2 Grading	10
6.3 Calculation of the Cumulative Grade Point Average (CGPA)	11
7.0 Curriculum/Modules	11
8.0 Contact	14

1. Mission & Vision Statement

Vision Statement

The department aspires for being recognized for its leadership and excellence in the field of Software, being effective supporter within the local, regional and international bodies in the field, contributor to future visions in enhancing the quality of applied Software systems which makes it an excellent contributor to the educational, research and community services..

Mission Statement

The Program seeks to provide all Software students with fundamental knowledge of Software. Preparing qualified and trained national competencies to start a practical life based on an education with an advanced and influential technological base that meets future expectations of science and technology with strong relevance to problem-solving skills that enable them to adapt and adapt to tomorrow's challenges in all software applications.

2. Program Specification

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

Software Science Undergraduate Program Specifications:

The specifications of an undergraduate program in Software science can vary depending on the institution and specific curriculum. However, here are some common program specifications you can expect to find in such a program:

1. **Duration:** The program is typically completed over a period of four years, leading to a Bachelor's degree in Computer Networks and Internet or a related field.
2. **Core Courses:** The curriculum will include a set of core courses that provide a comprehensive foundation in software science and information technologies. These courses may cover topics such as software requirements, software engineering, and software systems, object-oriented programming, programming principles, computer architecture, software quality and authentication, information security, software development models, software maintenance and open-source software.
3. **Practical Experience:** The program may include hands-on practical experiences to develop real-world skills. This can be achieved through laboratory work, where students have access to software equipment and simulation tools to design, configure, and troubleshoot software systems. Cooperative education programs with industry partners may also be available to provide students with practical work experience.
4. **Capstone Project:** Students may be required to complete a capstone project in their final year, which involves applying their knowledge and skills to solve a significant software problem or develop a software-related system. The project allows students to showcase their abilities and integrate what they have learned throughout the program.
5. **Industry Collaboration:** Some programs may have collaborations with industry partners, which can offer opportunities for guest lectures, workshops, internships, and programming events. These collaborations help students connect with professionals in the field and gain insights into industry practices.
6. **Professional Certifications:** Some programs may integrate preparation for industry-recognized certifications related to software science and information technology.
7. **General Education Requirements:** In addition to the specialized courses, students will typically need to fulfill general education requirements, which may include courses in mathematics, natural sciences, humanities, social sciences, and communication skills.

3. **Program Objectives**

1. The department commits to provide an environment that supports creativity, quality and excellence, and to embrace and encourage initiatives development of his students.
2. Preparing conscious and distinguished generations with high skills and sufficient experience, enabling them to participate strongly and active in the development of society and the

development of its capabilities by providing them with the latest knowledge and skills and high moral values.

3. Preparing scientific cadres specialized in the field of designing and building large and reliable software systems.
4. Providing an appropriate and comfortable research and teaching environment for teachers to reach high-quality outputs.
5. Seeking to open the door for postgraduate studies in the department in a way that suits the need of the academic community in this regard.

4. Student Learning Outcomes

Student learning outcome of undergraduate software science. The student learning outcomes for an undergraduate software science and programming systems generally focus on the knowledge, skills, and competencies that students are expected to acquire by the end of their studies. Here are some common student learning outcomes for such a program:

1. Programming Concepts: Understand and explain fundamental concepts, principles, and theories related to software science and its tools and technologies, including software models, software topologies and software architectures.
2. Software Design and Implementation: Design, configure, and implement software science, considering factors such as software requirements, scalability and performance optimization. The student studies a number of advanced programming languages, and the foundations of design and analysis Algorithms, data structures, object-oriented and visual programming. It also recognizes the latest analysis methods System and their design, using the latest systems used for this purpose.
3. Problem solving and software troubleshooting: Analyze and diagnose software-related problems and apply critical thinking and problem-solving skills to resolve issues in programming connectivity, performance. And provide the student with the ability to evaluate alternative solutions to the problem and decide on the possibility of using Information technology in the application of solution.
4. Ethical and Professional Conduct: Understand and adhere to ethical and professional standards in software science, including issues related to privacy, intellectual property, software governance, and professional responsibilities.
6. Software Technologies: Demonstrate a solid understanding of programming technologies, including web development, web services.
7. Train the student on the skills of presenting ideas and working within one team through graduation projects and summer training. In addition to qualifying students for postgraduate studies in the Software field and the development of their skills in the field of training.

These learning outcomes aim to equip undergraduate students with a strong foundation in software science and information technologies, enabling them to pursue careers in programming administration, software engineering, cyber security, web development, and related fields. The

specific learning outcomes may vary slightly between institutions, but the overall focus remains on developing a well-rounded skill set in software science and information technologies.

5. **Academic Staff**

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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)

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

The cumulative grade point average (CGPA) for 4-year B.Sc. degree is calculated as follows:

$$CGPA = [(1^{st} \text{ Module score} \times ECTS) + (2^{nd} \text{ Module score} \times ECTS) + ...] / 240$$

Or:

$$CGPA = \frac{1}{240} \sum_{n=1}^N ModuleScore(n) \times ECTS(n)$$

Where N the total number of modules (classes) the students is has been unrolled to complete the program.

7. Curriculum/Modules

Semester 1 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Code
NVU1101	Computer Skills	63	87	6.00	S	NVU1101
CIT1120	Programming Principles I	63	87	6.00	B	CIT1120
CIT1116	Calculus	63	87	6.00	B	CIT1116
CIT1115	Principles of Logic	63	112	7.00	C	CIT1115
NVU1110	English Language I	62	63	5.00	S	NVU1110

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CIT1218	Statistics and Probabilities	47	78	5.00	B	
SOFT1220	Programming Principles II	93	107	8.00	B	CIT1120
SOFT1215	Logic Design	78	97	7.00	C	CIT1115
CIT1222	Computation Theory	47	103	6.00	B	CIT1120
CIT1225	Discrete structures	47	53	4.00	B	

Semester 3 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
SOFT2302	Data Structures and Algorithms I	78	72	6.00	B	SOFT1220
SOFT2304	Object Oriented Programming (OOP)	78	72	6.00	B	SOFT1220
SOFT2305	Software Engineering (I)	78	97	7.00	C	
SOFT2307	Software Systems	78	97	7.00	C	
NVU2310	English Language II	47	53	4.00	S	NVU1110

Semester 4 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
SOFT2402	Data Structures and Algorithms II	78	72	6.00	C	SOFT2302
SOFT2406	Database Management Systems	78	72	6.00	S	
SOFT2416	Software Engineering (II)	78	97	7.00	C	SOFT2305
SOFT2427	Software Requirements	62	113	7.00	C	
NVU2405	Human Rights	32	68	4.00	E	

Semester 5 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
SOFT3556	AI Techniques	78	97	7.00	C	SOFT 2402+CIT1218
SOFT3526	Compilers	78	97	7.00	C	SOFT2307
SOFT3531	Data Communications and Network	63	87	6.00	C	
SOFT3522	Computer Architecture	63	87	6.00	C	
NVU3510	English Language III	62	38	4.00	S	NVU2310

Semester 6 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
SOFT3620	Operating System	78	97	7.00	C	SOFT3522
SOFT3629	Software Engineering Tools	78	72	6.00	C	SOFT2416
SOFT3623	Web Engineering	78	97	7.00	C	
SOFT3630	Software Quality and Reliability	63	87	6.00	S	SOFT2416
NVU3607	Research methods	32	68	4.00	S	

Semester 7 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
SOFT4720	Information Security	63	87	6.00	C	SOFT3620 + SOFT2402
SOFT4724	Mobile Applications	63	112	7.00	C	SOFT3620
SOFT4731	Reverse Engineering	63	112	7.00	C	SOFT3630 + SOFT2416
SOFT4700	Graduation Project	17	133	6.00	C	
NVU4710	English Language IV	62	38	4.00	S	NVU3510

Semester 8 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
SOFT4802	Network Security	63	87	6.00	C	SOFT4720 +
SOFT3531						
SOFT4832	Software Development Models	78	72	6.00	C	SOFT2427 + SOFT2416
SOFT4833	Software Maintenance	63	87	6.00	C	SOFT4731 + SOFT2416
SOFT4834	Open-Source Software	78	72	6.00	S	SOFT2304 + SOFT2402
SOFT4800	Graduation Project	17	133	6.00	C	

8. **Contact**

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