Academic Program Specification Form for the Academic Year 2020-2021

University: University of Technology
College : Computer Sciences Department – Computer Security
Number Of Departments in The College : 6
Date of Form Completion: 9-6-2021

Programme Mager's Name :
Dr. Ayad Hazim Ibrahim
Date: June 2021

Signature

Quality Assurance and
Evaluation Correction
director: Nada Najeel Kamal
Date: June 2021
Signature:

Dean's Name: Dr. Aliaa Karim
Abdul Hassan
Date: June 2021
Signature

Deans Assistant for Scientific
Affairs: Nuha Jamil Ibrahim
Date: June 2021
Signature

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Programme Specification provides a concise summary of the main features of the programme 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 programme.

1. Teaching Institution	University of technology
2. University Department/Centre	Department of computer sciences
3. Programme Title	Computer Scurity
4. Title of Final Award	B.SC. in computer sciences
5. Modes of Attendance offered	courses
6. Accreditation	ABET
7. Other external influences	no
8. Date of production/revision of this specification	9-6-2021
9. Aims of the Programme	

The first goal: To prepare graduates who are able to encrypt and hide data in various programming languages to increase the protection of organizations against any penetration or threat.

The second goal: that students be able to design systems and programs that serve public and private sector companies.

The third goal: to develop a master's and doctoral study within the specialization of computer security.

10. Learning Outcomes, Teaching, Learning and Assessment Methods

A. Knowledge and understanding

A1- It helps the student to understand and develop safe programs and systems.

A2- The student is able to encode and analyze the code for any of the systems.

A3 - The student is able to discover intruders on networks or computers, as well as protect data and its stores from tampering and eavesdropping.

A4- It helps the student to carry out simplified projects that show the extent of his comprehension as well as their practical application.

B. Subject-specific skills

B1 - The student is able to encrypt or hide any information he desires

B2 - Enable the student to develop encryption algorithms or invent a new algorithm

and conduct research on this subject.

B3 - Enable the student to develop methods of protection for computers and networks from penetration and detection of intruders.

Students are taught the latest methods and using data show, as well as adopting modern sources in their education and adopting them mainly as a curriculum, as well as showing illustrative examples and conducting research on how to encrypt, concealment and protection methods, and how to apply and benefit from them in the practical reality of the department's laboratories.

Assessment methods

Students are evaluated on the basis of Examination, Quizzes, and homework, as well as making simplified practical projects that demonstrate the extent to which the student understands the material as well as the extent to which it is benefited.

C. Thinking Skills

C1- Doing simplified projects by the student that increase his ability to think and awareness.

C2 - Urging students to show new ideas that have not been used before.

C3 - Conducting a discussion session among the students, expressing their opinion and ideas, and working among them in order to develop a specific idea for the better.

Teaching and Learning Methods

Students are informed about the ideas and previous achievements made by specific people or former students who obtained satisfactory and effective results in practice. Then students are urged to invent new ideas and methods or to develop a specific method and conduct research, all of which helps the student to develop the intellectual and mental level.

Assessment methods

1- Quizzes and assignment
2- First term examination
3- Second term examination
4- Final examination

D- General and transferable skills (or) other skills related to employability and personal development

D1 - Doing experiments and research, as well as making applied programs in order to increase the student's ability to think logically, as well as gaining experience in order to develop ways to protect data and computers from tampering and eavesdropping.

D2- Seeing previous ideas as well as algorithms in order to benefit from them and know how to develop them or do something new, whether in the field of encryption or concealment.

Learning Methods

 1- Power point literatures by Data show reviews
 2- Tutorials

   1- Examinations
   2- Quizzes
   3- Home works
   4- Tutorials and discussions

---

13. Personal Development Planning

Graduate Studies

Research and projects

Participation in seminars and specialty conferences

14. Admission criteria.

   1- Central Admission
   2- 2- That the person is free from permanent disabilities that hinder work in the field of computers

15. Key sources of information about the programme

Training courses - workshops - research and projects - specialized seminars - conferences - postgraduate studies
See the most important Arab and foreign sources
Case studies and dissemination of results
Solve self-test questions in sources and references
Complex systems simulation

Computer Security Curriculum

ت	Course Code	عنوان الدرس	Subject	Hours per week			
المرحلة الثانية – الفصل الاول							
				Theoretical	Lab	Discussion	Units
1	CSCL2112	برمجة شيئية 1	Object Oriented Programming 1	2	2	1	3
2	CSCL2114	هياكل بيانات	Data Structures	2	2	1	3
3	CSCL2116	رياضيات 3	Mathematics 3	2	-	1	2
4	CSCL2118	اساسيات قواعد البيانات	Database Foundation	2	2	1	3
5	CSCS2104	التشفير الانسيابي	Stream Cipher	2	2	1	3
6	CSCS1203	تقنيات الترميز	Coding Theory	2	-	–	2
Total				**12**	**10**	**5**	**17**

ت	Course Code	عنوان الدرس	Subject	Hours per week			
المرحلة الثانية – الفصل الثاني							
				Units	Units	Units	Units
1	CSCL2213	برمجة شيئية 2	**Object oriented programming2**	2	2	1	3
2	CSCL2215	خوارزميات البحث والترتيب	**Sorting and Searching Algorithms**	2	2	1	3
3	CSCL2217	تحليل عددي	**Numerical Analysis**	2	2	1	3
4	CSCL2219	تصميم قواعد بيانات	**DataBase Design**	2	2	1	3
5	CSCS2205	تصميم برمجيات أمنة	**Secure Software Design**	2	-	-	*
6	CSCS2206	أمنية المعلومات والبيانات	**Information &Data Security**	2	-	-	2
7	CSCL2221	ديمقراطية	**Democracy**	1	-	-	1
8	CSCL2122	لغة انكليزية 2	English Language 2	2	-	-	1
Total				**16**	**8**	**4**	**18**

Total No. of Unit for first Course: (16)Units

Total No. of Unit for Second Course: (17)Units

Total No. of Unit for Year: (33) Units

Total No. of Unit for Specialist Courses: (7)Units

Third Year Syllabus

منهج المرحلة الثالثة

ت	Corse code	الموضوع	Subjec	Hours per week			
				Units	Units	Units	Units
1	CSCL3123	معالجات مايكروية	Microprocessor	2	2	1	3
2	CSCL3125	نظرية احتسابية	Computation Theory	2	-	1	2
3	CSCL3129	تمثيل المعرفة	Knowledge Representation	2	2	-	3
4	CSCS3107	شبكات الحاسوب	Computer Networks 1	2	2	1	3
5	CSS07	الشفرات الخبيثة	Malicious codes	2	-	1	2
6	CSCS3108	المفتاح العام	Public Key	2	2	1	3
7	CSCS3109	أساسيات الوسائط المتعددة	Multimedia Fundamentals	2	2	-	3
8	CSCL3133	لغة انكليزية 3	English Language 3	2	-	-	1
Total				16	10	5	20

المرحلة الثالثة – الفصل الاول

ت	رمز الدرس	عنوان الدرس	Subject	Hours per week			
				Theoretical	Lab	Discussion	Units
1	CSCL3224	معمارية حاسوب	Computer Architecture	2	2	1	3
2	CSCL3226	تصميم المترجمات	Compiler Design	2	2	1	3
3	CSCL3230	تقنيات البحث الذكية	Intelligent Searching Techniques	2	2	-	3

المرحلة الثالثة – الفصل الثاني

4	CSCS3210	امنية الموبايل والشبكات	Mobile and network Security	2	-	1	2
5	CSCS3211	القرصنة الاخلاقية	Ethical Hacking	2	-	1	2
6	CSCS3212	التشفير الكتلي	Block cipher Cryptography	2	2	1	3
7	CSCS3213	أمنية الوسائط المتعددة	Multimedia Security	2	2	-	3
Total				14	10	5	19

Total No. of Unit for first Course: (20)Units

Total No. of Unit for Second Course: (18)Units

Total No. of Unit for Year: (38) Units

Total No. of Unit for Specialist Courses: (19)Units

Fourth Year Syllabus　　　　　　منهج المرحلة الرابعة

المرحلة الرابعة – الفصل الاول							
ت	رمز الدرس	عنوان الدرس	Subject	Hours per week			
				Theory	Lab	Discussion	Units
1	CSCL4134	برمجة الويب الثابتة	Static Web Programming	2	2	1	3
2	CSCL4136	نظام التشغيل 1	Operating system 1	2	2	1	3
3	CSCS4116	أمن الحوسبة السحابية	Cloud Computing Security	2	-	1	2
4	CSCS4117	إخفاء المعلومات والعلامات المائية	Information Hiding & Watermarking	2	2	1	3
5	CSCS4118	التشفير المتقدم	Advance Cryptography	2	–	–	2
6	CSCS4119	أنظمة ذكية	Intelligent Systems	2	2	1	3
7	CSCL444	المشروع	Project	2	2	-	3
Total				14	10	5	19

ت	رمز الدرس	عنوان الدرس	Subject	Hours per week			

				المرحلة الرابعة – الفصل الثاني			
ت	رمز الدرس	عنوان الدرس	Subject	Hours per week			
				Theoretical	Lab	Discussion	Units
1	CSCL4235	برمجة الويب الديناميكية	**Dynamic Web Programming**	2	2	1	3
2	CSCL4237	نظم التشغيل 2	**Secure Operating system**	2	2	1	3
3	CSCS4220	تحليل الشفرة	**Crypt Analysis**	2	-	1	2
4	CSCS4221	المصادقة والتحكم في الوصول	**Authentication and Access Control**	2	-	1	2
5	CSCS4222	الأمن الإلكتروني	**Cyber Security**	2	-	-	2
6	CSCS4223	الحوسبة الناعمة	**Soft Computing**	2	2	-	3
7	CSCL444	المشروع	**Project**	2	2	-	3
Total				16	8	4	19

Total No. of Unit for first Course: (20)Units

Total No. of Unit for Second Course: (18)Units

Total No. of Unit for Year: (38) Units

Total No. of Unit for Specialist Courses: (19)Units

Total No. of Unit for One Semester: **(20)**Units
Total No. of Unit for Year: **(40)** Units

مجموعة الوحدات للفصل الدراسي الواحد: (20) وحدة

مجموعة الوحدات لسنة دراسية: (40) وحدة

Curriculum Skills Map

please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed

Year / Level	Course Code	Course Title	Core (C) Option (O)	General and Transferable Skills (or) Other skills relevant to employability and personal development		Thinking Skills			Subject-specific skills			Knowledge and understanding			
				D2	D1	C3	C2	C1	B3	B2	B1	A4	A3	A2	A1
First Year/ First Course	CSCL1101	Structured Programming I	c	√	√	√	√	√	√	√	√	√	√	√	√
	CSCL1103	Mathematics I	c			√	√	√	√	√	√	√	√	√	√
	CSCL1105	Discrete Structures I	c		√			√		√	√	√	√	√	√
	CSCL1107	Computer Organization	c	√			√	√	√	√	√	√	√	√	√
	CSCL1109	Introduction to Statistics	c		√				√	√	√				√
	CSCS1101	Principles of Dara Security													
	CSCL1111	English Language 1	c	√	√		√	√	√	√	√			√	√
	UT100	Work shop													
First Year/ Second Course	CSCL1202	Structured Programming II	c	√	√	√	√		√	√	√	√	√	√	√
	CSCL1204	Mathematics II	c			√	√	√	√	√	√	√	√	√	√
	CSCL1206	Discrete Structures II	c		√			√	√	√	√	√	√	√	√
	CSCL1208	Logic Design	c	√			√	√	√	√	√	√	√	√	√
	CSCL1210	Probabilistic Theory	c		√				√	√	√				√
	CSCS1202	Numbering Theory	c		√	√	√	√	√	√	√		√	√	√
	CSCS1203	Coding Techniques	c	√	√	√	√	√	√	√	√	√	√	√	√

Year/Course	Code	Course	Type																
Second Year/ First Course	CSCL2112	**Object Oriented Programming 1**	c			√	√		√	√	√		√	√	√	√	√	√	√
	CSCL2114	**Data Structures**	c			√	√		√	√	√		√	√	√	√	√	√	√
	CSCL2116	**Mathematics 3**	c			√	√			√	√		√	√	√	√	√	√	√
	CSCL2118	**Database Foundation**	c			√	√			√	√			√	√	√	√	√	√
	CSCS2104	**Stream Cipher**	c			√	√		√	√	√		√	√	√	√	√	√	√
	CSCS1203	**Techniques Coding**	c			√	√		√	√	√		√	√	√	√	√	√	√
Second Year/ Second Course	CSCL2213	**Object oriented programming2**	c			√	√		√	√	√		√	√	√	√	√	√	√
	CSCL2215	**Sorting and Searching Algorithms**	c			√	√		√	√	√		√	√	√	√	√	√	√
	CSCL2217	**Numerical Analysis**	c			√	√			√	√		√	√	√	√	√	√	√
	CSCL2219	**DataBase Design**	c			√	√			√	√			√	√	√	√	√	√
	CSCS2205	**Secure Software Design**	c			√	√		√	√	√		√	√	√	√	√	√	√
	CSCS2206	**Information and Data Security**	c			√	√			√	√		√	√	√	√	√	√	√
	CSCL2221	**Democracy**	c				√				√				√				√
	CSCL2122	**English Language 2**	c			√	√			√	√		√	√	√			√	√

Year / Course	Code	Course	Type															
Third Year/ First Course	CSCL3123	Microprocessor	c			√	√		√	√	√		√	√	√	√	√	√	√
	CSCL3125	Computation Theory	c			√	√		√	√	√		√	√	√	√	√	√	√
	CSCL3129	Knowledge Representation	c			√	√		√	√	√		√	√	√	√	√	√	√
	CSCS3107	Computer Networks 1	c			√	√			√	√		√	√	√	√	√	√	√
	CSS07	Malicious codes	c			√	√	√	√	√		√	√	√	√	√	√	√	√
	CSCS3108	Public Key	c			√	√	√	√	√		√	√	√	√	√	√	√	√
	CSCS3109	Multimedia Fundamentals	c			√	√	√	√	√		√	√	√	√	√	√	√	√
	CSCL3133	English Language 3	c			√	√			√	√		√	√	√				√	√
Third Year/ Second Course	CSCL3224	Computer Architecture	c			√	√		√	√	√		√	√	√	√	√	√	√
	CSCL3226	Compiler Design	c			√	√			√	√		√	√	√	√	√	√	√
	CSCL3230	Intelligent Searching Techniques	c			√	√	√	√	√		√	√	√	√	√	√	√	√
	CSCS3210	Mobile and network Security	c			√	√			√	√		√	√	√	√	√	√	√
	CSCS3211	Ethical Hacking	c			√	√	√	√	√		√	√	√	√	√	√	√	√
	CSCS3212	Block cipher Cryptography	c			√	√	√	√	√		√	√	√	√	√	√	√	√
	CSCS3213	Multimedia Security	c			√	√	√	√	√		√	√	√	√	√	√	√	√
Fourth year/ First Course	CSCL4134	Static Web Programming	c			√	√			√	√		√	√	√	√	√	√	√
	CSCL4136	Operating system 1	c				√		√	√	√		√	√	√		√	√	√
	CSCS4116	Cloud Computing Security	c																

Year	Code	Course	Type																	
	CSCS4117	Information Hiding & Watermarking	c			√	√		√	√	√		√	√	√	√	√	√	√	
	CSCS4118	Advance Cryptography	c				√						√	√	√		√	√	√	
	CSCS4119	Intelligent Systems	c			√	√		√	√	√		√	√	√	√	√	√		
Fourth year/ Second Course	CSCL4235	Dynamic Web Programming	c			√	√			√	√		√	√	√	√	√	√	√	
	CSCL4237	Operating system 2	c				√		√	√	√		√	√	√		√	√	√	
	CSCL4239	Data Security 2	c			√	√		√	√	√		√	√	√	√	√	√	√	
	CSIS4214	Cloud computing foundations	c						√				√	√	√	√	√	√	√	
	CSIS4217	Data Analysis Methods	c				√		√	√	√		√	√	√		√	√	√	
	CSIS4218	Accounting information systems	c				√		√	√	√		√	√	√		√	√	√	
	CSCL444	English Language 4	c			√	√			√	√		√	√	√			√	√	