



Al-Balqa' Applied University
AL-Huson University College
Department of
Information Technology

The Curriculum for the B.Sc.
Degree in

Computer Science/Internet of
Things

2023/2022



Al-Balqa Applied University

Curriculum for the Bachelor Degree in Computer Science/Internet of Things

2023/2022

The curriculum for the B.Sc. degree in Computer Science/Internet of Things consists of (133) credit hours distributed as follows:

Table 1: Credit Hours distributed as follows

Requirements	Credit Hours	Percentage
University Requirements	24	%18
Faculty Requirements	21	%15
Compulsory Specialization Requirements	73	%55
Elective Specialization Requirements	9	%7
Supportive Specialization Requirements	6	%5
Total	133	%100

Table 2: Knowledge Fields as follows

Code	Knowledge Fields
0	General: Computer Skills (2), Introduction to Electronic Circuits and Devices, Physics
1	Computation Science and algorithms: Discrete Mathematics, Data Structures and Algorithms.
2	Programming: Object Oriented Programming, Java Programming Internet of Things application programming, Embedded Systems Design and Organization, Embedded Systems Programming, Internet of Things and Sensor Programming with Python, Embedded GUI Programming.
3	Computer Components (Hardware): Digital logic, introduction to computer design, principles of operating systems, embedded operating systems.
4	Computer Science: Computer networks and communications, database design and management, artificial intelligence, applied software engineering, basics of cybersecurity.
5	Internet of things science(IoT): Introduction to the Internet of things, microcontrollers of Internet of things devices, wireless communications for the Internet of things, data science, sensors for the



	Internet of things.
6	Supportive: Statistics and probability, numerical analysis.
7	Training and Projects: Field training for IoT students, Project-1 for IoT students, Project-2 for IoT students

University Requirements (24 credit hours) distributed as follows:

a) University Compulsory requirements (18 Credit hours)

Course Number	Course Name	Credit hours	Weekly Hours		Pre-requisite
			Theory	Practical	
AAL101	Applied Arabic Language	3	3	0	--
AEL101	Applied English Language (1)	3	3	0	--
AEL102	Applied English Language (2)	3	3	0	AEL101
NE 101	Patriotic Education and University Behavior	3	3	0	--
35001101	Military Sciences	3	3	0	--
CS 101	Computer Skills and Distance Learning	1	1	0	--
IEC 101	Innovation, Entrepreneurship and Creativity	2	2	0	--
Total		18	18	0	

b) University Elective requirements (6 Credit hours)

Course Number	Course Name	Credit Hours
36001101	Communication Skills	3
36002102	Educational Psychology	3
36003103	Jordanian Society	3
36004104	Sport for all	3
36005105	Islamic Culture	3
36006106	Administration and Economic concepts	3
36007107	Agriculture in Jordan	3

**Al-Balqa Applied
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Department**



**جامعة البلقاء
التطبيقية**

كلية الحصن الجامعية

قسم تكنولوجيا المعلومات

36008108	Environment and Society	3
36012109	Righteous Caliphs History	3



Faculty Requirements (21 Credit Hours)

Course Number	Course Name	Credit hours	Weekly Hours		Pre-requisite
			Theory	Practical	
CS 103	Computer Skills (2)	3	2	3	-
CS 104	Computer Skills (2) Lab ⁺	0	0	3	-
CS 122	Object Oriented Programming	3	3	0	CS 103
CS 123	Object Oriented Programming Lab	1	0	3	*CS 122
CS 222	Java Programming	3	3	0	CS 122
CS 223	Java Programming Lab	1	0	3	*CS 222
30202101	Calculus (1)	3	3	0	-
30202102	Calculus (2)	3	3	0	30202101
CS 241	Communications and Computer Networks	3	3	0	CS 122
CS 242	Communications and Computer Networks Lab	1	0	3	*CS 241
Total		21	17	15	

⁺ This is an embedded lab for Computer Skills (2) for Science Colleges course/ is not to be considered in the student study plan/ for registration purposes only

*: corequisite **: first semester enrollment

Specialization Requirements (82 credit Hours) distributed as follows:

a) Specialization Compulsory Requirements (73 hours)

Course Number	Course Name	Credit Hours	Weekly Hours		Pre-requisite
			Theory	Practical	
IOT 105	Physics	3	3	0	-
IOT 106	Physics Lab	1	0	3	*IOT 105
IOT 114	Discrete Mathematics	3	3	0	30202101
IOT 231	Digital Logic	3	2	3	CS 103
IOT 251	Introduction to Internet of Things	3	2	0	CS 122
IOT 211	Data Structures and Algorithms	3	2	3	CS 122
IOT 201	Introduction to Circuits & Electronic Hardware	3	3	0	IOT 231
IOT 222	Design & Organization of Embedded Systems	3	3	0	CS 122
IOT 223	Design & Organization of Embedded Systems -Lab	1	0	3	*IOT 222
IOT 244	Databases Design and Management	3	2	3	CS 222



IOT 321	Programming Embedded Systems	3	2	3	IOT 222
IOT 343	Applied Software Engineering	3	3	0	IOT 244
IOT 342	Artificial Intelligence	3	3	0	IOT 211
IOT 331	Fundamentals of Operating Systems	3	3	0	CS 222
IOT 322	Internet of Things application programming	3	2	3	IOT 222
IOT 332	Introduction To Computer Design	3	3	0	IOT 231
IOT 333	Embedded Operating Systems	3	3	0	IOT 331
IOT 351	Internet of Things & Sensor Programming with Python	3	0	6	IOT 321
IOT 344	Fundamentals of Cyber security	3	3	0	IOT 322
IOT 352	Sensors for Internet of Things	3	3	0	IOT 321
IOT 451	Data Science	3	3	0	IOT 342
IOT 452	Wireless Communications for Internet of Things	3	3	0	IOT 251, CS 241
IOT 453	Microcontrollers for Internet of Things Devices	3	3	0	IOT 222
IOT 454	Embedded GUI Programming	3	0	6	IOT 351
IOT 473	Field Training for Internet of Things Students	3	-	-	Cr.Hrs 90
IOT 471	Project-1 for Internet of Things Students	1	-	-	Cr.Hrs 90
IOT 472	Project-2 for Internet of Things Students	2	-	-	IOT 471
Total		73			

*: corequisite

a) Specialization Elective Requirements (9 hours)

Course Number	Course Name	Credit Hours	Weekly Hours		Pre-requisite
			Theory	Practical	
IOT 442	Machine Learning	3	3	0	IOT 342
IOT 447	Cloud Computing	3	3	0	IOT 342
IOT 455	Special Topics in Internet of Things ⁺	3	3	0	Cr.Hrs 90
IOT 456	Robotics and Autonomous Systems	3	3	0	IOT 321
IOT 457	Internet of Things Privacy	3	3	0	IOT 251
IOT 458	Network Protocols for Internet of Things	3	3	0	IOT 352
IOT 459	Big data analysis	3	3	0	IOT 451

*: Corequisite +: Department approval



Supportive Specialization Courses (6 credit Hours)

Course Numbers	Course Name	Credit Hours	Weekly Hours		Pre- requisite
			Theory	Practical	
IOT 361	Principles of Numerical Analysis	3	3	0	IOT 114
IOT 261	Applied Probability and Statistics	3	3	0	IOT 114
Total		6	6	0	