

Bachelor of Science in Computer Systems Engineering

2023-2024

جامعة
عبدالله السالم
Abdullah Al Salem
University

1) General Program Presentation

Graduating with a Bachelor of Science in Computer Systems Engineering necessitates the successful completion of a total of 132 credit hours (CH). These credit hours are distributed across different requirements, encompassing courses that are essential as well as those that can be chosen as elective courses. The table below shows how 132 credit hours are distributed across requirements:

Table 1: Program credit hours distribution.

General Education Requirements	36 Credits
College Requirements	55 Credits
Program requirements	41 Credits (Including 6 CH electives)
Total Credits Hours	132 Credits

2) General Education (36 Credits)

Students here are required to complete 36 credit hours distributed over five sections as follows:

Communication (9 Credits)

Table 2: General education communication courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
ENL101	English for Academic Studies	(3 credits)	3		ICT 095*
ENL102	English Composition	(3 credits)	3	ENL101	
ENL201	Writing and Research	(3 credits)	3	ENL102	

*Preparatory Program: ICT 095 Information Technology Basics.

Innovation and Creativity (6 Credits)

Table 3: Innovation and Creativity Ethics compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN150	Professionalism and Ethics	(3 credits)	3		

Table 4: General education innovation and creativity elective courses (students should select one course from the following list).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN131	Creativity and Problem Solving	(3 credits)	3		
BUS101	Entrepreneurship Essentials	(3 credits)	3		
ENI110	Intro. to Innovation and Creativity	(3 credits)	3		
ENI140	Design Thinking	(3 credits)	3		
ENI150	Innovation in Business Models	(3 credits)	3		
ENI160	Innovation and Globalization	(3 credits)	3		

Global Citizen (6 Credits)

Table 5: General education global citizen compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
INF120	Computers and Information Systems	(3 credits)	3	ICT095	

Table 6: General education global citizen elective courses (students should select one course from the following list).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN201	Globalization and Sustainability	(3 credits)	3		
GEN202	Global Citizenship in the Digital Age	(3 credits)	3		
BUS201	Global Economics and Trade	(3 credits)	3		

Art and Humanities (9 Credits)

Table 7: General education art and humanities compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
HST 101	Islamic Culture and Values	(3 credits)	3		

Table 8: General education art and humanities elective course group I (students should select one course from the following list).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
HST102	Kuwait History	(3 credits)	3		
ARB101	Arabic Communication skills	(3 Credits)	3		
ART101	Art Appreciation	(3 credits)	3		
ART102	Intro. To Media and Communication	(3 credits)	3		

Table 9: General education art and humanities elective course group II (students should select one course from the following list).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
PHL101	Introduction to Philosophy	(3 credits)	3		
LAW101	Law and Society	(3 credits)	3		
PSY 101	Introduction to Psychology	(3 credits)	3		
SOC 101	Introduction to Sociology	(3 credits)	3		

Math and Science (6 Credits)

Table 10: General education math and science courses (6 credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite	Note
MAT101	Calculus I	(3 credits)	3	IMP099* or Equivalent		
PHY101	Physics I	(3 credits)	3		MAT101	

3) College Requirements (55 Credits)

- **Math and Science (27 Credits)**

Table 11: Math and Science courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
PHY105	Physics Lab I	(1 credit)	3		PHY101
PHY102	Physics II	(3 credits)	3	PHY101 MAT101	
PHY107	Physics II Lab	(1 credit)	3	PHY105	PHY102
MAT102	Calculus II	(3 credits)	3	MAT101	
MAT221	Number Theory	(3 credits)	3	MAT102	
MAT120	Discrete Mathematics	(3 credits)	3		
BIO101 or CHM101	Biology I or Chemistry I	(3 credits)	3		
BIO105 or CHM105	Biology I Lab or Chemistry I Lab	(1 credit)	3		BIO101 / CHM101
MAT202	Linear Algebra	(3 credits)	3	MAT101	
MAT240	Differential Equations	(3 credits)	3	MAT102	
ENG304	Engineering Probability & Statistics	(3 credits)	3	MAT102	

- **Engineering requirements (28 Credits)**

Table 12: Engineering courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
CCS120	Computational Thinking & Programming	(3 credits)	3	MAT120	
CCS121	Computational Thinking & Programming Lab	(1 credit)	3		CCS120
CCS200	Digital Logic and Design	(3 credits)	3	PHY101	
CCS220	Object-Oriented Design & Programming	(3 credits)	3	CCS120	
CCS221	Object-Oriented Design & Programming Lab	(1 credit)	3		CCS220
CCS230	Fundamentals of Database Systems	(3 credits)	3	CCS220 MAT120	
CCS231	Fundamentals of Database Systems Lab	(1 credit)	3		CCS230
CCS241	Fundamentals of Computer Networks	(3 credits)	3	INF120	
CCS270	Data Structures and Algorithms	(3 credits)	3	CCS220	

CCS271	Data Structures and Algorithms Lab	(1 credit)	3	CCS270
ENG308	Numerical Methods	(3 credits)	3	MAT240
CCS320	Fundamentals of Operating Systems	(3 credits)	3	CCS270

4) Program Requirements (41 Credits):

- **Program Requirements (35 Credits)**

Table 13: Program courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
ENG205	Circuits and Electronics	(3 credits)	3	PHY102 MAT102	
ENG206	Circuits and Electronics Lab	(1 credit)	3		ENG205
CME220	Introduction to Computer Systems Engineering	(3 credits)	3	CCS200	
CME310	Computer Architecture and Organization	(3 credits)	3	CCS200	
CME311	Computer Architecture and Organization Lab	(1 credit)	3		CME 310
CME341	Systems and Signal Processing	(3 credits)	3	ENG205	
CME360	Network and System Security	(3 credits)	3	CCS241	
CME410	Programming for Computer Engineering	(3 credits)	3	CCS220	
CME411	Programming for Computer Engineering Lab	(1 credit)	3		CME 410
CME420	Embedded and Microprocessor Systems	(3 credits)	3	CME310	
CME421	Embedded and Microprocessor Systems Lab	(1 credit)	3		CME 420
CME430	Digital Systems Design	(3 credits)	3	CME310	
CME431	Digital Systems Design Lab	(1 credit)	3		CME 430
CME490	Capstone Design 1	(3 credits)	3	Program Approval	
CME491	Capstone Design 2	(3 credits)	3	CME490	

- **Program Electives (6 Credits)**

Table 14: Program elective courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
CME480	Internship	(3 credits)	3	Program Approval	
CCS330	Web Engineering	(3 credits)	3	CCS230	
CME435	Formal Language and Automata	(3 credits)	3	CCS270	
CME440	Real-time systems	(3 credits)	3	CME310	
CME441	VHDL Programming	(3 credits)	3	CME410	
CME442	Parallel and Distributed Computing	(3 credits)	3	CME341	
CME443	Simulation Modeling and Analysis	(3 credits)	3	CME310	
CME444	Principles Artificial Intelligence	(3 credits)	3	CME310	
CME445	Principles Blockchain Technology	(3 credits)	3	CME310	
CME446	Principles Quantum Computing	(3 credits)	3	CME310	
CME495	Special Topics in Computer Systems	(3 credits)	3	Program Approval	

- Students can take up to three credits of technical electives from another program or institution.