

Curriculum of Bachelor of Science in SOFTWARE ENGINEERING (BSE)

=====YU-COEA A.Y.2025 August 16, 2025, V9.6, Total Credit Hours = 141 =====

FIRST YEAR (Freshmen)

First Semester				Second Semester			
Code	Course Title	CR	Pre-Requisite	Code	Course Title	CR	Pre-Requisite
CIS 103	Programming Fundamentals I	4	ORN 03C ORN 03R	CIS 104	Programming Fundamentals II	4	CIS 103 ORN 05C ORN 05R
CHM 101	General Chemistry	4	ORN 04R ORN 04C	PHY 103	Physics I	4	ORN 04-R ORN 04 C
MTH 106	Discrete Mathematics	3	ORN 04C ORN 04R	MTH 104	Calculus I	3	ORN 03C ORN 03R
ENG 101	English Essay Writing	3	ORN 05R ORN 05C	STT 103	Probability and Statistics	3	ORN 03C ORN 03R
ISL 101	Foundation of Islamic Culture	2	ORN 02R ORN 02C	ARB 102	Communication Skills in Arabic	2	ORN 02R ORN 02C
	Humanities / Social Science Elective I	3	ORN 04R ORN 04C		Humanities / Social Science Elective II	3	ORN 04-R ORN 04 C
	Sub-Total	19			Sub-Total	19	

SECOND YEAR (Sophomore)

First Semester				Second Semester			
Code	Course Title	CR	Pre-Requisite	Code	Course Title	CR	Pre-Requisite
CIS 201	Fundamentals of Web Design	3	CIS 103	CIS 221	Introduction to Database Systems	3	CIS 104
CIS 202	Data Structures	3	CIS 104	SWE 202	Introduction to Software Engineering	3	CIS 104
MIS 201	Introduction to Information Systems	3	ORN 05C ORN 05R	NES 212	Data Communications & Computer Networks	3	CIS 201
PHY 203	Physics II	4	PHY 103	MTH 304	Differential Equations	3	MTH 204
MTH 204	Calculus II	3	MTH 104	ENG 201	Technical Report Writing	3	ENG 101
ISL 202	Financial Awareness	2	ORN 02R ORN 02C	ARB 202	Writing Skills in Arabic	2	ORN 02R ORN 02C
	Sub-Total	18			Sub-Total	17	

THIRD YEAR (Junior)

First Semester				Second Semester			
Code	Course Title	CR	Pre-Requisite	Code	Course Title	CR	Pre-Requisite
CIS 304	Computer Architecture	3	CIS 202	CIS 321	Operating Systems	3	CIS 304
CIS 386	Project Management	3	SWE 202	CIS 381	Computer Ethics	2	SWE 202
CIS 383	Cyber Security and Cryptography	3	NES 212	CIS 316	Introduction to Artificial Intelligence	3	SWE 202
SWE 300	Software Process & Modelling	3	SWE 202	SWE 302	Software Architecture & Design	3	SWE 202
SWE 301	Software Requirements Engineering	3	SWE 202	SWE 312	Software Construction & User Interface	3	SWE 202
MTH 301	Linear Algebra	3	MTH 104	SWE 322	Advanced Web Programming	3	CIS 201 CIS 221
	Sub-Total	18			Sub-Total	17	

FOURTH YEAR (Senior)

First Semester				Second Semester			
Code	Course Title	CR	Pre-Requisite	Code	Course Title	CR	Pre-Requisite
CIS 491	Graduation Project I	3	90 CH SWE 300 SWE 301 SWE 302	CIS 492	Graduation Project II	3	CIS 491 SWE 411
CIS 443	Cloud Computing	3	NES 212	SWE 401	Software Quality Assurance	3	SWE 301
SWE 321	Advanced User Interface Design	3	SWE 301		SWE Elective II	3	
SWE 411	Software Verification & Validation	3	SWE 312		SWE Elective III	3	
	SWE Elective I	3		CSK 001	Career Skills	0	
	Sub-Total	15			Sub-Total	12	

FOURTH YEAR (Senior)			
Summer Semester			
Code	Course Title	CR	Pre-Requisite
CIS 490	Cooperative Assignment (*)	6	90 CH
Sub-Total		6	

(*) it is recommended to take CSK 001 before CIS 490.

SWE Electives students should register 3 courses			
Course Code	Course Title	Pre-requisites	Credit Hours*
SWE 402	Software Maintenance and Evolution	SWE 312	3
SWE 413	Design Patterns	SWE 302	3
SWE 414	Formal Methods in Software Engineering	SWE 202	3
SWE 415	Software Usability Engineering	SWE 301	3
CIS 222	Interactive Media	CIS 201	3
SWE 412	Mobile Application Development	SWE 312	3
CIS 416	Introduction to Machine Learning	MTH 301, STT 103, CIS 316	3
NES 424	IOT architectures, protocols and security	NES 212	3
NES 481	Security Policies and Procedures	NES 212	3
SWE 421	Game Development	SWE 312	3
SWE 429	Selected Topics in Software Engineering	SWE 312	3
MIS 432	Enterprise Systems	CIS 221	3

Humanities / Social Science Electives (Two courses from this list)			
Code	Course Title	CR	Pre-Requisite
SOS 102	Introduction to Social Science	3	ORN 04R & ORN 04C
PHL 101	Critical Thinking	3	ORN 04R & ORN 04C
PSY 101	Principle of Psychology	3	ORN 04R & ORN 04C
SOS 101	Saudi Heritage	3	ORN 04R & ORN 04C
FRE 106	Conversational French 1	3	ORN 04R & ORN 04C
CHI 107	Chinese Language	3	ORN 04R & ORN 04C
ENG 103	Introduction to English Literature	3	ORN 05R & ORN 05C