

Software Engineering Program

Course Code	Course Title	Prerequisites	Cr. Hr.	Contact Hrs.				Course Code	Course Title	Prerequisites	Cr. Hr.	Contact Hrs.			
				Lectures	Tutorial	Laborator y	Total Contact					Lectures	Tutorial	Laborator y	Total Contact
Semester 1								Semester 2							
UNR1403	Academic English	-	2	1	3	0	4	UNR2101	Communication and PresentationSkills	UNR1403	2	1	3	0	4
UNR1302	Fundamentalsof Business	-	2	2	0	0	2	UNR1407	Academic Writing	UNR1403	2	1	3	0	4
UNRxxxx	University Req. Elective	-	2	2	0	0	2	EBAxxxx	Science Elective		3	2	0	2	4
EBA1203	Calculus I	None or (EBA0201 for science students)	3	2	2	0	4	EBA1204	Calculus II	EBA1203	3	2	2	0	4
EBA1110	Physics	-	3	2	0	2	4	CCS1302	Problem Solving and Programming	CCS1101	3	2	2	2	6
CCS1101	Introduction to Computing	-	3	2	2	0	4	CCS1001	Discrete Structures	CCS1101	3	2	2	0	4
CIS1000	Introduction to Information Systems	-	3	2	2	0	4	CNC1401	Entrepreneurship Skills	10 CR. or more	2	2	0	0	2
¹ EBA0201	Precalculus	-	0	2	2	0	4								
² GLA0001	Remedial English	-	0	2	2	0	4								
Total Hrs			18	13	9	2	24	Total Hrs			18	12	12	4	28
Semester 3								Semester 4							
CCS2102	Digital Logic Design	CCS1101	3	2	2	2	6	CCS2401	Data Structuresand Algorithms	CCS2303	3	2	2	0	4
CCS2303	Object- Oriented Programming	CCS1302	3	2	2	2	6	CSE2001	Introduction to Software Engineering	CCS2303 CIS1000	3	2	2	0	4
EBA 2204	Linear algebra	EBA 1204	3	2	2	0	4	CCS2304	Advanced Programming Applications	CCS2303	3	2	2	0	4
CCS2201	Introduction to Networks	CCS1302	3	2	2	0	4	CCS2305	Web Programming	CIS2101	3	2	2	0	4
CIS2101	Database Systems	CCS1302	3	2	2	0	4	CCS2103	Introduction to Computer Architecture	CCS2102	3	2	2	0	4
EBA2203	Probability & Statistics	EBA 1204	3	2	2	0	4	CCY2001	Introduction to Cybersecurity	CCS2201	3	2	2	0	4
Total Hrs			18	12	12	4	28	Total Hrs			18	12	12	0	24
Semester 5								Semester 6							
CSE3101	Software Requirements and Specifications	CSE2001	3	2	2	-	4	CSE3201	Designing Human Centered Software	CSE2001	3	2	-	2	4
CSE3402	Project Management	CSE2001	3	2	2		4	CSE3202	Software Component Design	CSE2001 CCS2304	3	2	-	2	4
EBA3202	Differential Equations	EBA1204	3	2	2	-	4	CCS3403	Computing Algorithms	CCS2401	3	2	2	-	4
CAI3101	Introduction to Artificial Intelligence	CCS1001 CCS2401	3	2	-	2	4	EBA3201	Advanced Statistics	EBA2203	3	2	2	-	4
CCS3203	Operating Systems	CCS2103 CCS2401	3	2	2	2	6	CCS3002	Numerical Methods	EBA2204 CCS1302	3	2	-	2	4
CIT3200	Professional Training in Mobile Apps Prog.	-	0	-	2	-	2	CITxxxx	Professional Training I	---	0	-	2	-	2
Total Hrs			15	10	10	4	24				15	10	6	6	22
Semester 7								Semester 8							
CSE4301	Software Verification and Validation	CSE3101	3	2	-	2	4	CSE4401	Software Engineering Process	CSE2001	3	2	2	-	4
CSE4203	Principles of Software Architecture	CSE3101 CSE3202	3	2	-	2	4	CCS4204	Computer System Security	CCS3203 CCY2001	3	2	2	-	4
CSE4901	Project I	GPA>=2.0 & 90 CR or more	3	2	2	-	4	CSE4902	Project II	CSE4901	3	2	2	-	4
CSExxxx	Major Elective	---	3	2	-	2	4	CSExxxx	Major Elective	---	3	2	2	-	4
CSExxxx	Major Elective	---	3	2	-	2	4	CSExxxx	Major Elective	---	3	2	2	-	4
CITxxxx	Professional Training II	---	0	-	2	-	2	CITxxxx	Professional Training III	---	-	-	2	-	2
Total Hrs			15	10	4	8	22	Total Hrs			15	10	12	0	22

Electives courses

The student chooses 4 elective courses of the following list (12 Cr.Hr.).

Semester	Course Code	Course Title	prerequisite	Cr. Hr.	Lectures	Tutorials	Laboratory	Total Contacts
Software Design and Development								
8	CSE4204	Software Engineering for Large Scale Systems	CSE3101 CSE4203	3	2	2	0	4
8	CSE4205	Software ProductLine Engineering	CSE4203	3	2	2	0	4
7/8	CSE4206	Formal Methods inSoftware Engineering	CCS1001 CSE2001	3	2	2	0	4
7/8	CSE4207	Software Engineering for Cloud Applications	CCS3203 CSE3202	3	2	2	0	4
8	CSE4208	Software Engineering for Embedded Systems	CSE2001 CCS2103	3	2	2	0	4
8	CSE4209	Architecting IoTSystems	CCS2201 CSE4203	3	2	2	0	4
7/8	CSE4210	Software Engineering for AI-enabled Systems	CSE2001 CAI3101	3	2	2	0	4
8	CSE4211	Software Architecture for Blockchain Applications	CSE4203	3	2	2	0	4
Software Testing and Quality Assurance								
7/8	CSE4302	Software QualityAssurance	CSE2001	3	2	2	0	4
Software Process and Management								
7/8	CSE4403	Agile SoftwareDevelopment	CSE2001	3	2	2	0	4
7/8	CSE4404	Software Deployment and Operations	CSE3202 CCS2305	3	2	2	0	4
8	CSE4405	Software Configuration Management	CSE4203	3	2	2	0	4
7/8	CSE4406	Software Maintenance and Evolution	CSE3202 CSE4301	3	2	2	0	4
7/8	CSE4407	Software RiskManagement	CSE2001	3	2	2	0	4
7/8	CSE4408	Security in SoftwareEngineering	CSE2001 CCY2001	3	2	2	0	4