American University of Central Asia

Program: Software Engineering

CHECKLIST

Student's Name: **ID #:**

Major: **Year of Admission:** **2020**

Minor: **Year of Declaration:**

Course Name	Course #	Course ID	Credits	Prereq	Comments
General Education Courses					**Total - 80-98 Credits**
First Year Seminar I			4		
Philosophy I (part of FYS)			2		
Composition I			6		
First Year Seminar II			4		
Philosophy II (part of FYS)			2		
Composition II			6		
Kyrgyz Language and Literature I			4		
Kyrgyz Language and Literature II			4		
History of Kyrgyzstan			4		
Geography of Kyrgyzstan			2		
Russian Language I			2		
Russian Language II			2		
Manas Studies			2		
Social Sciences (12 credits):					
Psychology, Sociology, Political Studies, Economics, Law, Anthropology and/or European Studies from outside the student's major			12		OR Second year seminar: Social science (6 cr)
Humanities (12 credits):					
Modern Foreign Languages, Religious Study, History, Literature, and/or Culture from outside the student's major			12		OR Second year seminar: Humanities (6 cr)
Art/Sport					
Arts			12		
Sports			0	4 semesters-1 sport class (400 Hours)	
Natural science					
Ecology **Physics (prereq. LINEAR ALGEBRA)**			3+3		
Mathematics (12 credits)					
Linear Algebra & Analytic Geometry for AMI/SFW			6	none	
Mathematical Analysis I for AMI/SFW			6	Linear Algebra	

Courses on Specialty					**Total 146 credits**
Required Courses on Specialty			**126**		
From Software Engineering department					**99 credits**
Algorithm Languages	COM- 393		6	Alg.& Data structures	
Algorithms and Data Structures	COM-223.1	3114	6	OOP+Safety Manag.&Eco	
Computer Architecture	COM-410.1	3268	6	Alg.& Data structures	
Computer Graphics	COM- 391		6	Alg.& Data structures	

Database	COM-213	4773	6	Alg.& Data structures	
Information Security	COM-424.1	3953	6	Alg. Analysis	
Internship: Educational Tasks Internship: Research Project			6		
Introduction to Software Engineering and Informatics	COM-108	4321	6	-	
Object Oriented Programming	COM-119	4357	6	Structural programming	
Operating Systems	COM-341	3325	6	Alg.& Data Struct+Archit.	
Safety Management and Economics	COM-120	4358	3	-	
Senior Project Preparation I/ II	COM-431.1	3706	12	Comp. Archit+ OperSyst	
Software Engineering I	COM- 421.1	3705	6	OOP	
Software Engineering II	COM- 430.1	3881	6	Software Eng. I	
Structural programming	COM-118	4322	6	None	
System programming	COM- 392	4953	6	Comp. Archit+ OperSyst	
			99		

Required courses from "Applied Mathematics and Informatics" department					**24 credits**
Mathematical Analysis II for AMI/SFW			6	Math. Analysis I	*From AMI*
Discrete mathematics and math. logic I			6	-	*From AMI*
Discrete mathematics and math. logic II			6	Discrete Math I	*From AMI*
6 credits out of next courses:					
Numerical Methods			6	OOP and Math.An II	*From AMI*
Theory of Probabilities and Math. Statistics			6	Linear Math.	*From AMI*

Elective Courses on Specialty

From Software Engineering department					**Minimum 18 credits (23 cr)**
3D Design and Animation			6	-	
Software project management (eng)			6	OOP	
Algorithm Analysis*			6	Alg. and Data Structures	
Applied Autonomous robotics			6	OOP	
Introduction to Artificial Intelligence			6	FYS II	
Computer Networks			6	Operating Systems	
Computer Vision			6	Parallel and Distr. Prog	
Data Science			6	OOP	
Database Design			6	Database	
Digital Integrated Circuit Design			6	OOP	
Game Development			6	OOP	
Information Security II			6	Info.security	
Intro to Web programming			6	OOP and Comp	
Introduction to automated deduction			6	Discrete Math II	
iOS application development			6	OOP	
Machine learning			6	LinAlg and Comp Architect	
Management of Information Systems for			6	OOP	
Mobile and IoT Development			6	OOP	
Neural Networks and deep learning			6	Comp Architecture	
Programming Languages			6	OOP	
System Administration			6	Comp Networks	

**courses should be taken in case of doing Minor*

Courses for Minor*

Total Number of Credits		**240**

Order of study for 2020 admits

	I semester (30 credits)	
Gen. Ed.	First Year Seminar I	4
	Philosophy I (part of FYS)	2
	Composition I	6
	Sport (Competitive programming)	0
Profile	Introduction to Software Engineering and Informatics	6
	Linear Algebra and Analytic Geometry	6
	Structural programming	6

	II semester (30 credits)	
Gen. Ed.	First Year Seminar I	4
	Philosophy II (part of FYS)	2
	Composition II	6
	Sport (Competitive programming)	0
Profile	**Object Oriented Programming**	6
	Safety Management and Economics	3
	Physics	3
	Mathematical Analysis I	6

	III semester (30 credits)+3optional	
Profile	Mathematical Analysis II	6
	Algorithm and Data Structures	6
	Discrete Mathematics I	6
Gen. Ed.	Second year seminar/ART or HUM or SS	6
	Kyrgyz language and Literature I	4
	Russian Language I	2
	Sport (Competitive programming)	0

	IV semester (33 credits)	
Profile	**Computer Architecture**	6
	Discrete Mathematics II	6
	Elective course (**Algorithm Analysis**)	6
Gen. Ed.	Kyrgyz language and Literature II	4
	History of Kyrgyzstan	4
	Geography of Kyrgyzstan	2
	Russian Language II	2
	Natural science course: Ecology etc.	3

	V semester (30 credits) +3optional	
Profile	**Operating Systems**	6
	Database	6
	System programming	6
	Elective course	6
Gen. Ed.	ART or HUM or SS	6
	Sport (Competitive programming)	0

	VI semester (32 credits) +1optional	
Profile	**Computer Graphics**	6
	Algorithm Languages	6
	Numerical Methods/Theory of Probabilities	6
	Elective course	6
Gen. Ed.	ART or HUM or SS	6
	Manas Studies	2

	VII semester (30 credits) +3optional	
Profile	**Senior Paper/Seminar**	6
	Elective course	6
	Software Engineering I	6
Gen. Ed.	ART or HUM or SS	6
	ART or HUM or SS	6

	VIII semester (30 credits) +3optional	
Profile	**Senior Paper/Seminar**	6
	Software Engineering II	6
	Elective	6
	Information Security	6
Gen. Ed.	ART or HUM or SS	6

During 4th year of study, in case your overall GPA is higher than 3.0, you can transfer 3 additional credits from one semester to another (to take one extra 6 credits course)

Order of GenEd courses (Social Science, Humanities, Art and Natural Science) fulfillment can be changed, you can shift them.

	Courses from SFW program
	Courses from Applied Mathematics and Informatics program
	Courses should be taken only during 2 year of studies, to pass a State Examination