

**American University in Central Asia**  
**Department: Software Engineering**

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**CHECKLIST FOR ADMITS 2022**

General Education Courses						
Course Name	Course abbr.	Course ID	Credits	Semester	Prerequisites	Comments
<b>Academic Orientation program: August 22- September 2, 2022</b>			<b>2*</b>			<b>Outside of 240</b>
First Year Seminar I	FYS		4		none	
First Year Seminar II	FYS		4		FYS 1	
Introduction to Philosophy I (part of FYS)	FYS		2		none	
Introduction to Philosophy II (part of FYS)	FYS		2		Phil 1	
English Composition I	ECL		6		none	
English Composition II	ECL		6		ECL 1	
Kyrgyz Language and Literature I	KLL		4		none	
Kyrgyz Language and Literature II	KLL		4		KLL I	
Russian Language I	RUS		2		none	
Russian Language II	RUS		2		RUS 1	
History of Kyrgyzstan	HIST		4		none	
Geography of Kyrgyzstan	GEO		2		none	
Manas Studies			2		none	
Natural Sciences/Second Year Seminar**	NTR, ECL, GEO,AGEO		6			
Mathematics and Quantitative reasoning <i>-Linear Algebra &amp; Analytic Geometry for AMI/SFW</i> <i>-Mathematical Analysis I for AMI/SFW</i> <i>-Theory of probabilities and Math. Statistics</i>	MAT-131.2 MAT-233.2 MAT-307	3828 3855 3215	18		None Lin. Algebra Lin. Algebra	
Arts/Second Year Seminar**	ART		12			
Humanities/Second Year Seminar** <i>Modern Foreign Languages, History, Literature, Culture from outside the student's major</i>	SYS/HUM		12			
Social Sciences/Second Year Seminar** <i>Psy, Soc, ICP, Econ, IBL, Anth, ES. From outside the student's major</i>	SYS/SS, SOC, PSY, ES etc.		12			
Sports	SPO		0		none	400 hours
<b>Total GenEd credits</b>						
			104 [2] credits			

\* Credits earned for the Academic Orientation program are not included into 240 credits for graduation.

\*\*All students in their 2<sup>nd</sup> year must take one Second Year Seminar. This seminar substitutes for one required 6-credit course in either Humanities, Social Sciences, Arts or Natural Science.

\*\*\*One 6-credit course in Major requirements could be counted towards General Education requirements. \* Credits earned for the Academic Orientation program are not included into 240 credits for graduation.

\*\*All students in their 2<sup>nd</sup> year must take one Second Year Seminar. This seminar substitutes for one required 6-credit

course in either Humanities, Social Sciences, Arts or Natural Science.

\*\*\*One 6-credit course in Major requirements could be counted towards General Education requirements.

<b>Major Requirements</b>						
<b>Required Courses (75 cr)</b>						
<b>Course Name</b>	<b>Course abbr.</b>	<b>Course ID</b>	<b>Credits</b>	<b>Semester</b>	<b>Prerequisites</b>	<b>Comments</b>
Introduction to Programming	COM-122	5682	6	1	none	
Discrete Mathematics	COM-236	5676	6	1	none	
Object Oriented Programming	COM-119	4357	6	2	Introduction to Programming (COM-122)	
Principles of computing systems (Low level programming)	TBA	TBA	6	2	Introduction to Programming (COM-122)	
Data structures	TBA	TBA	6	3	OOP (COM-119)	
Algorithms	TBA	TBA	6	4	Data structures	
Operating systems or Computer networks	COM-341.1 or COM - 416.1	3325 or 3709	6	5	Principles of computing systems AND Data structures	
Database	COM-213	4773	6	5	OOP (COM-119)	
Senior Thesis I	COM-431.1	3706	6	7	OOP (COM-119)	
Senior Thesis II	COM-433	3707	6	8	Senior Thesis I, COM-431.1	
<b>Internship:</b>						
Internship: Educational Tasks	COM-498.1	3842	15			Outside of 240 cr
Internship: Research Project	COM-499.1	3841				
<b>Elective Courses (need to take 36 cr)</b>						
<b>Course Name</b>	<b>Course abbr.</b>	<b>Course ID</b>	<b>Credits</b>	<b>Semester</b>	<b>Prerequisites</b>	<b>Comments</b>
3D Design and Animation	JMC/TCMA/ COM-336	4047	6	any	None	
Software project management (eng)	COM-341	5093	6	2-8	OOP	
Algorithm Analysis	COM - 324.1	3261	6	4-8	Algorithms	
Applied Autonomous robotics	COM-255	4521	6	3-8	OOP	
Introduction to Artificial Intelligence	COM-214	4633	6	3-8	FYS II	
Computer Vision	COM-389	4626	6		OOP	
Data Science	COM/MATH- 295	4520	6	3-8	OOP	
Database Design	COM – 326.1	3499	6	6-8	Database	
Digital Integrated Circuit Design	COM-333	4143	6	3-8	OOP	
Game Development	COM – 299	3956	6	3-8	OOP	
Information Security	COM-424.1	3953	6	3-8	OOP	
Information Security II	COM-425.1	4827	6	4-8	Info.security	
Intro to Web programming	COM – 388.1	3040	6	3-8	OOP	
Introduction to automated deduction	COM – 270	4351	6	4-8	Discrete Math II	

iOS application development	COM-256	4624	6	3-8	OOP	
Machine learning	COM-474	4774	6	3-8	LinAlg AND Principles of computing systems	
Management of Information Systems for SFW (eng)	COM-302	5095	6	3-8	OOP	
Mobile and IoT Development	COM-254	4389	6	3-8	OOP	
Modern Programming Languages	COM-297	5679	6	3-8	OOP	
Neural Networks and deep learning	COM – 312	4519	6	3-8	Principles of computing systems	
Parallel programming	COM-451.1	3708	6	6-8	Operating systems	
Programming Languages	COM – 371.1	3327	6	3-8	OOP	
System Administration	COM – 463.1	3704	6	6-8	Comp Networks	
Theory of computation	COM-332.1	3703	6	6-8	Linear Algebra	
<b>Electives - 40 cr (at least 18cr outside the major + 22cr can be taken from the major)</b>						
<b>Total Number of Credits</b>			<b>255</b>			

### Recommended order of study for 2022 admits

Academic Orientation Program [2 credits]			
1st semester (30 credits)		2nd semester (30 credits)	
First Year Seminar I	4	First Year Seminar II	4
Philosophy I (part of FYS)	2	Philosophy II (part of FYS)	2
Composition I	6	Composition II	6
Sport (or Competitive programming)	0	Sport (or Competitive programming)	0
Discrete Mathematics	6	Object Oriented Programming	6
Linear Algebra and Analytic Geometry	6	Principles of Computing systems	6
Introduction to Programming	6	Mathematical Analysis I	6
3rd semester (30 credits)		4th semester (30 credits)	
Theory of probabilities and Math. Statistics	6	Algorithms	6
Data Structures	6	SFW Elective (2)	6
SFW elective (1)	6	Natural Science	6
Second year seminar/ART or HUM or SS etc.	6	Kyrgyz language and Literature II	4
Kyrgyz language and Literature I	4	History of Kyrgyzstan	4
Russian Language I	2	Geography of Kyrgyzstan	2
Sport (or Competitive programming)	0	Russian Language II	2
5th semester (30 credits)		6th semester (32 credits)	
Operating Systems	6	SFW Elective course (4)	6
Database	6	Elective course	6
SFW Elective course (3)	6	Elective course	6

Elective course	6	Elective course	6
ART or HUM or SS or Elective	6	ART or HUM or SS	6
Sport (or Competitive programming)	0	Manas Studies	2
<b>SUMMER</b>			
Internship	15		
<b>7th semester (30 credits)</b>		<b>8th semester (30 credits)</b>	
Senior Thesis I	6	Senior Thesis II	6
SFW Elective course (5)	6	SFW Elective course (6)	6
Elective course	6	Elective course	6
ART or HUM or SS	6	ART or HUM or SS	6
ART or HUM or SS	6	ART or HUM or SS	6

**Graduation requirements:**

1. Earn at least 240 credits (+credit hours earned for program internships)
    - a. Complete all General Education requirements;
    - b. Complete all requirements for at least one major;
    - c. Earn no more than 102 credits of introductory (100-level) courses;
    - d. Complete at least 18 elective credits outside of a student's major and General Education program;
    - e. Complete the required number of internship credits (the number of credits is determined by each department);
    - f. Pass all state graduation examinations;
    - g. Successfully complete and defend a senior thesis/project;
    - h. Receive no "F" or "N/p" grades in the final semester;
- To earn an overall GPA of at least 2.0.