

American University in Central Asia

Department: Software Engineering

CHECKLIST FOR ADMITS 2025

General Education Courses						
Course Name	Course abbr.	Course ID	Credits	Semester	Prerequisites	Comments
Academic Orientation program: August 11- August 22, 2025			2*			Outside of 240
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 & 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
Total GenEd credits			104 [2] credits			

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

**All students in their 2nd 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 2nd 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.

Major Requirements						
Required Courses (75 cr)						
Course Name	Course abbr.	Course ID	Credits	Semester	Prerequisites	Comments
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	COM-123	5778	6	2	Introduction to Programming (COM-122)	
Data structures	COM-229	5964	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	
Internship:						
Internship: Educational Tasks Internship: Research Project	COM-498.1 COM-499.1	3842 3841	15	summer		Outside of 240 cr
Elective Courses (need to take 36 cr)						
Course Name	Course abbr.	Course ID	Credits	Semester	Prerequisites	Comments
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	
Electives - 40 cr (at least 18cr outside the major + 22cr can be taken from the major)						
Total Number of Credits			255			

Recommended order of study for 2025 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 OR Natural Science	6	Natural Science OR Theory of probabilities and Math. Statistics	6
Data Structures	6	SFW Elective (2)	6
SFW elective (1)	6	Algorithms	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 or Computer networks	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
SUMMER			
Internship	15		
7th semester (30 credits)		8th semester (30 credits)	
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 242 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.