

American University – Central Asia

Program: Applied Mathematics and Informatics

CHECKLIST

Student's Name _____ **ID #** _____

Major: Applied Mathematics and Informatics _____ **Year of Admission** 2020 _____

Minor: _____ **Year of Declaration** _____

Course Name	Course #	Course ID	Credits	Prereq	Comments
General Education Courses			Total - 98 credits		
First Year Seminar I			4		
First Year Seminar II			4		
Introduction to Philosophy I (part of FYS)			2		
Introduction to Philosophy II (part of FYS)			2		
English Composition I			6		
English Composition II			6		
Kyrgyz Language and Literature I			4		
Kyrgyz Language and Literature II			4		
Russian Language I			2		
Russian Language II			2		
History of Kyrgyzstan			4		
Geography of Kyrgyzstan			2		
Manas Studies			2		
Social Sciences (12 credits):					
<i>Student has to choose from the following list of Majors: Anthropology, Economics, European Studies, IBL, ICP, Psychology, Sociology and LAS Concentrations.</i>			12		OR Second Year Seminar: Social science (6 credits)
Humanities (12 credits):					
Modern Foreign Languages, Religious Study, History, Literature, and/or Culture			12		OR Second Year Seminar: Humanities (6 credits)
Art and Sport					
Arts			12		OR Second Year Seminar: Arts (6 credits)
Sports			0	4 semesters-1 sport class	400 hours
Natural science (6 credits)					
Physics. Computer Modeling.			6		
Mathematics (12 credits)					
Linear Algebra & Analytic Geometry (for AMI)			6		
Mathematical Analysis I (for AMI)			6		
Courses on Specialty					142 credits(min)
Required Courses on Major					Total - 128 credits
Discrete Mathematics and Mathematical Logic I	COM-227		6	none	
Discrete Mathematics and Mathematical Logic II	COM-228		6	COM-227	
Mathematical Analysis II	MAT-316.2		6	MAT-233	
The Theory of Probabilities and Mathematical Statistics I	MAT-307		6	MAT-131	

Ordinary Differential Equations	MAT-332		6	MAT-233.2	
Equations of Mathematical Physics	MAT-360		6	MAT-316.2 MAT-332	
Numerical Methods	MAT-407		6	MAT-233.2 COM-118 MAT-332- desirable	
Numerical Methods for Equations of Mathematical Physics	MAT-410		6	MAT-407, MAT-360	
Functional Analysis	MAT-341		6	MAT-316.2, MAT-326	
Complex Variables	MAT-326		6	MAT-316.2	
Optimization Methods	MAT-435		6		
Optimization Methods	MAT-435		6	MAT-233.2	Courses from Software Engineering Program
Introduction to Software Engineering and Structural programming	COM-108		6	none	
Object Oriented Programming	COM-118		6	none	
Computer Architecture	COM-119		6	COM-118	
Computer Architecture	COM-410.1		6	COM-223.1	
Operating Systems	COM-341.1		6	COM-410.1	
Database	COM-213		6	COM-119	
Computer Graphics or Graphic Design I or II	COM-391		6	COM-223.1	
	JMC/COM /TCMA-301			FYS-216	
Research Methods in Applied Mathematics	MAT-370		6	MAT-131.2	
Senior project preparation I	MAT-480		3	MAT-370	
Senior project preparation II	MAT-481		3	MAT-480	
Internship I (Educational Tasks)	MAT-380		3	none	
Internship II (Research Project)	MAT-479		3	none	
Safety Management and Economics	COM-120		2	none	
Elective Courses on Major					18 credits (min)
Quantitative Decision Making	BUS/MAT-366		6	MAT-131.2	
Game Theory	MAT-317		6	MAT-233	
Actuarial Mathematics I	BUS/MAT-367		6	MAT-307	
Actuarial Mathematics II	BUS/MAT-368		6	BUS/MAT-367	
Algorithms and Data structures	COM-223.1		6	COM-119	Required for Minor in SFW
Algorithm Analysis	COM-324.1		6	COM-223.1	
Information security	COM - 424.1		6	COM-119	
Intro to Web programming	COM-388.1		6	COM-119	
Database design	COM-236.1		6	COM-213	
Courses for the education profile “Mathematical Modeling in Natural and Social Sciences”					
Mathematical Modeling in Geophysics.	MAT-420		6	MAT-407, MAT-316.2, MAT-410-desirable	
Mathematical Modeling in Economics	MAT/ECO-333		6	MAT-233.2	
Courses for Minor*					
Total Number of Credits					240

Order of study for 2020 admits

I semester (30 credits)			II semester (30 credits)		
Gen. Ed.	First Year Seminar I	4	Gen. Ed.	First Year Seminar II	4
	Introduction to Philosophy I (part of FYS)	2		Introduction to Philosophy II (part of FYS)	2
	English Composition I	6		English Composition II	6
	Linear Algebra and Analytic Geometry	6		Mathematical Analysis I	6
	Sport	0		Sport	0
Profile	Discrete Mathematics and Math Logic I	6	Profile	Physics. Computer Modeling	6
	Introduction to Software Engineering and Informatics	6		Discrete Mathematics and Math Logic II	6

III semester (32 credits) +1optional			IV semester (32 credits) +1optional		
Profile	Structural programming	6	Profile	Object Oriented Programming	6
	Ordinary Differential Equations	6		The Theory of Probabilities and Mathematical Statistics	6
	Mathematical Analysis II	6		Numerical Methods	6
	Safety Management	2			
Gen. Ed.	Kyrgyz language and literature I	4	Gen. Ed.	Kyrgyz language and literature II	4
	Russian Language I	2		History of Kyrgyzstan	4
	Second year seminar (SS/ART/HUM)	6		Geography of Kyrgyzstan	2
	Sport	0		Russian Language II	2
				Manas Studies	2
				Sport	0

V semester (30 credits) +3 optional			VI semester (30 credits)+3 optional		
Profile	Functional Analysis	6	Profile	Equations of Mathematical Physics	6
	Database	6		Research Methods in Applied Math	6
	Optimization Methods	6		Computer Architecture	6
	Complex Variables	6		Computer Graphics	6
Gen. Ed.	Humanities / Social Science/ Arts	6	G.E	Humanities / Social Science/ Arts	6

VII semester (30 credits) +3 optional			VIII semester (30 credits) +3 optional		
Profile	Senior project preparation I	3	Profile	Senior project preparation II	3
	Numerical Methods for Equations of Mathematical Physics	6		Mathematical Modeling in Geophysics	6
	Operating Systems	6		Mathematical Modeling in Economics	6
	Internship I	3		Elective	6
	Internship II	3			
	Elective	6			
Gen. Ed.	Humanities / Social Science/ Arts	6	Gen. Ed.	Humanities / Social Science/ Arts	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)

	Courses from AMI program
	Courses from SFW program
	Courses should be taken only during 2 year of studies, to pass a State Examination