

# American University – Central Asia

**Program: Applied Mathematics and Informatics**

## CHECKLIST

**Student's Name** \_\_\_\_\_ **ID #** \_\_\_\_\_

**Major: Applied Mathematics and Informatics** **Year of Admission** 2019

**Minor:** \_\_\_\_\_ **Year of Declaration** \_\_\_\_\_

Course Name	Course #	Course ID	Credits	Prereq	Comments
<b>General Education Courses</b>			<b>Total - 96 Credits</b>		
First Year Seminar I			6		
Introduction to Philosophy I (part of FYS)			2		
Kyrgyz Language (part of FYS)			2		
Russian Language (part of FYS)			2		
First Year Seminar II			8		
Manas Studies (part of FYS)			2		
Introduction to Philosophy II (part of FYS)			2		
Kyrgyz Language (Literature)			6		
Russian Language			6		
History of Kyrgyzstan			4		
Geography of Kyrgyzstan			2		
<b>Social Sciences (12 credits):</b>					
<i>Student has to choose from the following list of Majors: Anthropology, Economics, European Studies, IB Law, IC Politics, Psychology, Sociology and LAS Concentrations.</i>			12		OR Second year seminar: Social science (6 cr)
<b>Humanities (12 credits):</b>					
Modern Foreign Languages, Religious Study, History, Literature, and/or Culture			12		OR Second year seminar: Humanities (6 cr)
<b>Art (SYS) and Sport</b>					
Arts			12		
Sports			0	4 semesters-1 sport class	400 Hours
<b>Natural science (6 credits)</b>					
Physics. Computer Modeling.			6		
<b>Mathematics (12 credits)</b>					
Linear Algebra & Analytic Geometry (for AMI)			6		
Mathematical Analysis I (for AMI)			6		
<b>Courses on Specialty</b>			<b>144 Credits (min)</b>		
<b>Required Courses on Major</b>			<b>Total - 128 Credits</b>		
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-		6	MAT-233	
The Theory of Probabilities and Mathematical Statistics I	MAT-307		6	MAT-131	
Ordinary Differential Equations	MAT-332		6	MAT-316.2	
Equations of Mathematical Physics	MAT-360		6		
Numerical Methods	MAT-407		6	MAT-316.2, COM-116	

Numerical Methods for Equations of Mathematical	MAT-410		6		
Functional Analysis	MAT-341		6		
Complex Variables	MAT-326		6	MAT-316.2	
Optimization Methods	MAT-435		6		
Introduction to Software Engineering and Informatics			6		Courses from Software Engineering Program
Structural programming	COM-118		6	none	
Object Oriented Programming	COM-119		6	COM-118	
Computer Architecture	COM-410.1		6		
Operating Systems	COM-341.1		6		
Database	COM-213		6		
Computer Graphics	TBA		6		
Research Methods in Applied Mathematics	MAT-370		6		
Senior project preparation I	MAT-480		3		
Senior project preparation II	MAT-481		3		
Internship I (Educational Tasks)	MAT		3		
Internship II (Research Project)	MAT		3		
Safety Management	COM-120		2		
<b>Elective Courses on Major</b>					
					<b>18 Credits (min)</b>
The Theory of Probabilities and Mathematical Statistics II	MAT-328		6	MAT-307	
Quantitative Decision Making	BUS/MAT 366		6		
Game Theory	MAT-317		6	MAT-233	
Mathematical Analysis III			6		
Actuarial Mathematics I			6		
Actuarial Mathematics II			6		
Algorithms and Data structures			6		Required for Minor in SFW
Algorithm Analysis			6		
<b>Courses for the education profile "Mathematical Modeling in Natural and Social Sciences":</b>					
1. Mathematical Modeling in Geophysics.	MAT		6		
2. Mathematical Modeling in Economics	MAT		6		
<b>Courses for Minor*</b>					
<b>Total Number of Credits</b>					<b>240</b>

## Order of study for 2019 admits

I semester ( 30 credits)			II semester (30 credits)		
<b>Gen. Ed.</b>	First Year Seminar I	6	<b>Gen. Ed.</b>	First Year Seminar II	8
	Introduction to Philosophy I (part of FYS)	2		Introduction to Philosophy II (part of FYS)	2
	Kyrgyz Language (part of FYS)	2		Manas Studies	2
	Russian Language (part of FYS)	2		Total FYS: 12 credits	
	Total FYS: 12 credits			Physics. Computer Modeling	6
	Linear Algebra and Analytic Geometry	6		Mathematical Analysis I	6
	Sport	0		Sport	0
<b>Profile</b>	Discrete Mathematics and Math Logic I	6	<b>Profile</b>	Discrete Mathematics and Math Logic II	6
	Introduction to Software Engineering and Informatics	6			

III semester ( 32 credits)			IV semester (33 credits)		
<b>Profile</b>	Structural programming	6	<b>Profile</b>	Object Oriented Programming	6
	Ordinary Differential Equations	6		Kyrgyz language and literature	6
	Mathematical Analysis II	6		or	
	Safety Management	2		The Theory of Probabilities and Mathematical Statistics	
<b>Gen. Ed.</b>	Kyrgyz language and literature	6	Numerical Methods	6	
	or				
	The Theory of Probabilities and Mathematical Statistics		Complex Variables	6	
	Second year seminar	6	<b>Gen. Ed.</b>	History of Kyrgyzstan AND Geography of Kyrgyzstan	4+2
Sport	0	Elective		3	
			Sport	0	

V semester ( 30 credits)			VI semester ( 30 credits)		
<b>Profile</b>	Functional Analysis	6	<b>Profile</b>	Equations of Mathematical Physics	6
	Database	6		Research Methods in Applied Math	6
	Optimization Methods	6		Computer Architecture	6
		Computer Graphics		6	
<b>Gen. Ed.</b>	Social Science (SYS)	6	<b>G.E</b>	Humanities (SYS)/ )/RUS:ART (Cross-listed course)	6
	Humanities (SYS)	6			

VII semester ( 30 credits)			VIII semester (30 credits)		
<b>Profile</b>	Senior project preparation I	3	<b>Profile</b>	Senior project preparation II	3
	Numerical Methods for Equations of Mathematical Physics	6		Elective (Mathematical Modeling in Geophysics)	6
	Operating Systems	6		Elective (Mathematical Modeling in Economics)	6
	KYR(Lit)//RUS:ART (Cross-listed course)	6		Elective	6
	Elective	3		Elective	6
	Internship I	3		Elective	3
	Internship II	3			