**American University of Central Asia**

**Liberal Arts and Sciences Department**

**Mathematical Modeling**  [**in Natural and Social Sciences**](https://auca.kg/en/las_mathematical_modeling/) **Concentration**

**2024 AY Checklist**

# Student’s Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ID # \_\_\_\_\_\_\_\_

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **General Education – 92 credits****(102 credits limit of 100 level courses)** | **Credits** | **Completed** | **Grade** | **Notes** |
| Academic Orientation program | 2\* |  |  |  |
| FYS I: English language for Liberal Arts - 4 credits, English Composition for Liberal Arts I – 6 credits Introduction to Philosophy I (part of FYS I) – 2 credits  | 12 |  |  |  |
| FYS II: English language for Liberal Arts - 4 credits,English Composition for Liberal Arts II – 6 creditsIntroduction to Philosophy II (part of FYS II) – 2 credits | 12 |  |  |  |
| Kyrgyz Language and Literature I - 4 credits Kyrgyz Language and Literature II - 4 credits (to be completed during sophomore year) | 8 |  |  | State exam in 2 year |
| Russian Language I – 2 credits Russian Language II – 2 credits  | 4 |  |  |  |
| Linear Algebra and Analytic Geometry for AMI/SFW | 6 |  |  |  |
| History of Kyrgyzstan – 4 credits Geography of Kyrgyzstan – 2 credits (to be completed during sophomore year) | 6 |  |  | State exam in 2 year |
| Manas Studies | 2 |  |  |  |
| Natural Science (Concepts of Modern Sciences)  | 6 |  |  |  |
| Arts/Second Year Seminar\*\* | 12 |  |  |  |
| Humanities/Second Year Seminar\*\* | 12 |  |  |  |
| Social Sciences/Second Year Seminar\*\* | 12 |  |  |  |
| Sports (any 4 courses during 4 years of study) | 0 |  |  | 400 hours/0 credits |
| **Total General Education:**  | **92 [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. |
| **LAS Core Courses – 24 credits**  |  |  |  |  |
| Concepts of Modern Art/Arts | 6 |  |  | Can be counted towards Arts requirement in the General Education program |
| World Literature/Humanities | 6 |  |  | Can be counted towards Humanities requirement in the General Education program |
| Concepts of Modern Sciences/Natural Sciences | 6 |  |  | Can be counted towards Natural Sciences requirement in the General Education program |
| Globalization and Social Sciences/Social Sciences | 6 |  |  | Can be counted towards Social Sciences requirement in the General Education program |
| **Total LAS Core Courses** | **24** |  |  |  |
| **Concentration Required Courses – 42 credits**  |  |  |  |  |
| Discrete mathematics and mathematical logic I | 6  |  |  | 1 semester |
| Mathematical Analysis I for AMI/SFW  | 6  |  |  |  |
| Introduction to programming  | 6  |  |  |  |
| The theory of probabilities and mathematical statistics  | 6  |  |  |  |
| Computer architecture  | 6  |  |  |  |
| Senior Project/Thesis I  | 3  |  |  |  |
| Senior Project/Thesis II  | 3  |  |  |  |
| Research Methods in Applied Mathematics  | 6  |  |  |  |
| Internship  | 15  |  |  | **out of 240 credits**  |
| **Total Concentration Courses** | **42** |  |  |  |
| **Major elective courses – 36 credits**  |  |  |  |  |
| Database  | 6  |  |  |  |
| Ordinary differential equations  | 6  |  |  |  |
| Operating Systems  | 6  |  |  |  |
| Numerical Methods  | 6 |  |  |  |
| Mathematical models in natural and social sciences: |  |  |  |  |
| Math Modeling in Economics  | 6  |  |  |  |
| Mathematical Modeling in Geophysics  | 6  |  |  |  |
| Game Theory  | 6  |  |  |  |
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| **Total major elective courses**  | **36** |  |  |  |
|  |  |  |  |  |
| Elective courses (from outside the student’s major) | 46 |  |  | In fact 70 credits are available due to overlap of LAS core courses and Gen Ed courses. |
| **Total Number of Credits** | **240 [257] credits** |  |  | 240 credits must be earned to graduate  |

**Recommended Order of Study**

|  |
| --- |
| Academic Orientation Program [2 credits] |
| 1st semester (30 credits) | 2nd semester (30 credits) |
| First Year Seminar I English Composition for Liberal Arts I Introduction to Philosophy I (part of FYS I) – 2 cr | 12 | First Year Seminar II English Composition for Liberal Arts II Introduction to Philosophy II (part of FYS II) – 2 cr  | 12 |
| Linear Algebra and Analytic Geometry for AMI/SFW 6  |  | Mathematical Analysis I for AMI/SFW  | 6 |
| Concepts of Modern Sciences  | 6  | World Literature  | 6 |
| Physics. Computer Modeling  | 6  | Elective Course  | 6 |
| Sport  | 0  | Sport  | 0 |
| 3rd semester (33 credits) | 4th semester (33 credits) |
| Concepts of Modern Art  | 6  | Globalization and Social Sciences  | 6 |
| Elective Course  | 6  | The Theory of Probabilities and Math. Statistics  | 6 |
| Introduction to Programming  | 6  | History and Geography of Kyrgyzstan  | 6 |
| Discrete Mathematics and Mathematical Logic I\*  | 6  | Computer Architecture  | 6 |
| Kyrgyz language and literature – 4 cr. Russian Language – 2 cr.  | 6 | Kyrgyz language and literature – 4 cr. Russian Language – 2 cr.  | 6 |
| Sport  | 0  | Sport  | 0 |
| 5th semester (33 credits) | 6th semester (33 credits) |
| Ordinary Differential Equations  |  | Numerical Methods  | 6 |
| Operating Systems  | 6  | Research Methods in Applied Mathematics  | 6 |
| General Education Course  | 6  | General Education Course  | 6 |
| General Education Course  | 6  | General Education Course  | 6 |
| Elective Course: Database  | 6  | Elective Course  | 6 |
| 7th semester (33 credits) | 8th semester (33 credits) |
| Senior thesis seminar I  | 6  | Senior thesis seminar II  | 6 |
| Gen Edu course  | 6  | Gen Edu course  | 6 |
| Elective Course: Math Modeling in Economics  | 6  | Elective Course: Mathematical Modeling in Geophysics  | 6 |
| Internship  | 6  | Elective Course  | 6 |
| Elective Course  | 6  | Elective Course  | 6 |

**Graduation requirements:**

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

**Important Contacts:**

***LAS Department Academic Advising Office***

Phone: +996 (312) 915000 \*487 Phone: +996 (312) 915000 \*416, 417

Room: 333 Room: 209

Email: las@auca.kg Email: advising@auca.kg

***Registrar Office Writing and Academic Resources Center***

Phone: +996 (312) 915000 \*401,402 Phone: +996 (312) 915000 \*490

Room: 110 Room: 224

Email: registrar@auca.kg Email: warc@auca.kg

***Shared Service Center Counseling Services***

Phone: +996 (312) 915019 Write an email to set up a meeting with

Room: 244 counselors:

Email: service@auca.kg cs@auca.kg

**Student’s signature: \_\_\_\_\_\_\_\_\_\_\_**

*(I am informed and confirm that I have completed all required courses and necessary components for my department)*

**Advisor’s name and signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

*(I have reviewed and confirmed that the student has completed all required courses and necessary components for their department)*

**Department chair’s name and signature: \_\_\_\_\_\_\_\_\_\_\_\_**

*I have double-checked and confirmed that the student has completed all required courses and necessary components for their department and eligible to graduate)*