**The B.Sc. in Mathematics program: sample schedule**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Year 1: Semester 1** | | | | | |
| Course | | School | ECTS Credits | Workload | |
| Class Hours | Self-study Hours |
| **UCCF** | MATH 161 Calculus I (\*) | SSH | 8 | 56 | 168 |
| Natural Science (Any course from PHYS, BIOL, CHEM, GEOL) | SSH, SMG | 8 | 56 | 168 |
| CSCI Programming course | SEDS | 8 | 56 | 168 |
| HST 100 History of Kazakhstan | SSH | 6 | 42 | 126 |
| **SEMESTER SUBTOTAL:** | | | 30 | 210 | 630 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Year 1: Semester 2** | | | | | |
| Course | | School | ECTS Credits | Workload | |
| Class Hours | Self-study Hours |
| **Major core** | MATH 162 Calculus II | SSH | 8 | 56 | 168 |
| **Electives** | Technical elective 1 | SSH, SEDS, SMG | 6 | 42 | 126 |
| **UCCF** | WCS 150 | SSH | 6 | 42 | 126 |
| Kazakh Language 1 | SSH | 6 | 42 | 126 |
| Social Science | SSH | 6 | 42 | 126 |
| **SEMESTER SUBTOTAL:** | | | 32 | 224 | 672 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Year 2: Semester 1** | | | | | |
| Course | | School | ECTS Credits | Workload | |
| Class Hours | Self-study Hours |
| **Major Core** | MATH 263 Calculus III | SSH | 8 | 56 | 168 |
| MATH 273 Linear Algebra with Applications | SSH | 8 | 56 | 168 |
| MATH 251 Discrete Mathematics | SSH | 6 | 42 | 126 |
| **UCCF** | Kazakh Language 2 | SSH | 6 | 42 | 126 |
| **SEMESTER SUBTOTAL:** | | | 28 | 196 | 588 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Year 2: Semester 2** | | | | | |
| Course | | School | ECTS Credits | Workload | |
| Class Hours | Self-study Hours |
| **Major Core** | MATH 274 Introduction to Differential Equations | SSH | 6 | 42 | 126 |
| MATH 321 Probability | SSH | 6 | 42 | 126 |
| **UCCF** | Ethics | SSH | 6 | 42 | 126 |
| 200-level writing course | SSH | 6 | 42 | 126 |
| **Electives** | Technical Elective 2 | SSH, SEDS, SMG | 6 | 42 | 126 |
| **SEMESTER SUBTOTAL:** | | | 30 | 210 | 630 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Year 3: Semester 1** | | | | | |
| Course | | School | ECTS Credits | Workload | |
| Class Hours | Self-study Hours |
| **Major Core** | Two courses from  MATH 302, 322, 351, 361 | SSH | 6 | 42 | 126 |
| SSH | 6 | 42 | 126 |
| **Electives** | Major elective 1 | SSH | 6 | 42 | 126 |
| Major elective 2 | SSH | 6 | 42 | 126 |
| **UCCF** | Business Fundamentals and Entrepreneurship | GSB | 6 | 42 | 126 |
| **SEMESTER SUBTOTAL:** | | | 30 | 210 | 630 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Year 3: Semester 2** | | | | | |
| Course | | School | ECTS Credits | Workload | |
| Class Hours | Self-study Hours |
| **Major Core** | Two courses among  MATH 302, 322, 351, 361 | SSH | 6 | 42 | 126 |
| SSH | 6 | 42 | 126 |
| **Electives** | Major elective 3 | SSH | 6 | 42 | 126 |
| Major elective 4 | SSH | 6 | 42 | 126 |
| **UCCF** | Research Methods (MATH 350) | SSH | 6 | 42 | 126 |
| **SEMESTER SUBTOTAL:** | | | 30 | 210 | 630 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Year 4: Semester 1** | | | | | |
| Course | | School | ECTS Credits | Workload | |
| Class Hours | Self-study Hours |
| **Major Core** | Capstone Project 1  (Honor’s Capstone Project 1) | SSH | 6 | 14 | 154 |
| Electives | Major Elective 5 | SSH | 6 | 42 | 126 |
| Major Elective 6 | SSH | 6 | 42 | 126 |
| Major Elective 7 | SSH | 6 | 42 | 126 |
| General Elective 1 | ALL | 6 | 42 | 126 |
| **SEMESTER SUBTOTAL:** | | | 30 | 210 | 630 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Year 4: Semester 2** | | | | | |
| Course | | School | ECTS Credits | Workload | |
| Class Hours | Self-study Hours |
| **Major Core** | Capstone Project 2  (Honor’s Capstone Project 2) | SSH | 6 | 14 | 154 |
|  | General Elective 2 | ALL | 6 | 42 | 126 |
| General Elective 3 | ALL | 6 | 42 | 126 |
| General Elective 4 | ALL | 6 | 42 | 126 |
| Technical Elective 3 | SSH, SEDS, SMG | 6 | 42 | 126 |
| **SEMESTER SUBTOTAL:** | | | 30 | 210 | 630 |
| **TOTAL ECTS CREDITS (YEARS 1-4):** | | | 240 | 1680 | 5040 |