

## Course Requirements and Registration Priorities (Undergraduate), Summer 2023

| #                                       | Abbr      | Title                                     | Cr(US) | Cr(ECTS) | PreRequisite  | CoRequisite                                      | AntiRequisite | 1st priority registration  | 2nd priority registration                    | 3rd priority registration                    | 4th priority registration |
|---|-----------|---|--------|----------|---|--|---------------|--|--|--|---------------------------|
| <b>GSB</b>                              |           |   |        |          |   |  |               |  |  |  |                           |
| <b>GSB</b>                              |           |   |        |          |   |  |               |  |  |  |                           |
| 1                                       | BUS 101   | Core Course in Business                   | 3      | 6        |   |  |               | 2 year UG SOM Medical Sciences, 2 year UG SOM Nursing, 3 year UG SOM, 4 year UG SEDS, 4 year UG SEDS (pending graduation), 4 year UG SMG, 4 year UG SOM, 4 year UG SSH, 4 year UG SSH (pending graduation) | 3 year UG SEDS, 3 year UG SMG, 3 year UG SSH | 2 year UG SEDS, 2 year UG SMG, 2 year UG SSH |                           |
| <b>SMG</b>                              |           |   |        |          |   |  |               |  |  |  |                           |
| <b>School of Mining and Geosciences</b> |           |   |        |          |   |  |               |  |  |  |                           |
| 2                                       | GEOL 206  | Field Geology 1                           | 3      | 6        | GEOL 202 Geologic Maps and Cross-Sections (5123) (C- and above) |  |               | 2 year UG SMG Geology, 2 year UG SMG Petroleum Engineering   |  |  |                           |
| 3                                       | GEOL 410  | Carbonate Systems, Processes and Deposits | 3      | 6        | GEOL 204 Sedimentology and stratigraphy (5475) (C- and above)   |  |               | 3 year UG SMG Geology  |  |  |                           |
| <b>SSH</b>                              |           |   |        |          |   |  |               |  |  |  |                           |
| <b>Biological Science</b>               |           |   |        |          |   |  |               |  |  |  |                           |
| 4                                       | BIOL 392  | Directed Study in Biology                 | 3      | 6        |   |  |               | Instructor's Permission Required. Registration through Add Course form only!   |  |  |                           |
| 5                                       | BIOL 399  | Biology Internship                        | 3      | 6        |   |  |               | Instructor's Permission Required. Registration through Add Course form only!   |  |  |                           |
| 6                                       | BIOL 490  | Honors Thesis Research                    | 0      | 0        | BIOL 355 Critical Research Reasoning (1000) (B and above)       |  |               | Instructor's Permission Required. Registration through Add Course form only!   |  |  |                           |
| <b>Chemistry</b>                        |           |   |        |          |   |  |               |  |  |  |                           |
| 7                                       | CHEM 101L | General Chemistry I lab                   | 1      | 2        |   | CHEM 101 General Chemistry I (113) (C and above) |               | Biological Sciences, Chemistry, SoM, Undeclared SSH  | SEDS, SMG, SSH                               |  |                           |
| 8                                       | CHEM 102  | General Chemistry II                      | 3      | 6        | CHEM 101 General Chemistry I (113) (C and above)                |  |               | Biological Sciences, Chemistry, SoM, Undeclared SSH  | SEDS, SMG, SSH                               |  |                           |

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| 9   | CHEM 189c       | Independent Study                | 3 | 6 |   |  |  | 4 year UG SSH Chemistry  | 3 year UG SSH Chemistry | 2 year UG SSH Chemistry |  |
| 10  | CHEM 211L       | Organic Chemistry I Lab          | 1 | 2 | CHEM 101L General Chemistry I lab (179) (C and above)   | CHEM 211 Organic Chemistry I (154) (C and above)   |  | Biological Sciences, Chemistry, SoM, Undeclared SSH                          | SEDS, SMG, SSH          |                         |  |
| 11  | CHEM 212L       | Organic Chemistry II Lab         | 1 | 2 | CHEM 211L Organic Chemistry I Lab (156) (C and above)   | CHEM 212 Organic Chemistry II (443) (C and above) OR CHEM 292 Organic Chemistry for Biologists II (1901) (C and above) |  | Biological Sciences, Chemistry, SoM, Undeclared SSH                          | SEDS, SMG, SSH          |                         |  |
| <b>Communication and Composition</b>  |                 |                                  |   |   |   |  |  |  |                         |                         |  |
| 12  | WCS 150         | Rhetoric and Composition         | 3 | 6 |   |  |  | SEDS, SMG, SSH, SoM  |                         |                         |  |
| <b>Economics</b>  |                 |                                  |   |   |   |  |  |  |                         |                         |  |
| 13  | ECON 300        | Research Assistance in Economics | 1 | 2 | ECON 101 Introduction to Microeconomics (379) (C- and above) AND ECON 102 Introduction to Macroeconomics (503) (C- and above) |  |  | Instructor's Permission Required. Registration through Add Course form only! |                         |                         |  |
| <b>History, Philosophy and Religious Studies</b>  |                 |                                  |   |   |   |  |  |  |                         |                         |  |
| 14  | HST 100         | History of Kazakhstan            | 3 | 6 |   |  |  | SEDS, SMG, SSH, SoM  |                         |                         |  |
| 15  | HST 399         | Independent Study                | 3 | 6 |   |  |  | Instructor's Permission Required. Registration through Add Course form only! |                         |                         |  |
| 16  | PHIL 210        | Ethics                           | 3 | 6 |   |  |  | Instructor's Permission Required. Registration through Add Course form only! |                         |                         |  |
| <b>History, Philosophy and Religious Studies, History, Philosophy and Religious Studies</b> |                 |                                  |   |   |   |  |  |  |                         |                         |  |
| 17  | REL 110/HST 110 | Introduction to World Religions  | 3 | 6 |   |  |  | SEDS, SMG, SSH, SoM  |                         |                         |  |
| <b>Kazakh Language and Turkic Studies</b>   |                 |                                  |   |   |   |  |  |  |                         |                         |  |
| 18  | KAZ 150         | Basic Kazakh                     | 3 | 6 | KLL "[A2] Basic"  |  |  | SEDS, SMG, SSH, SoM  |                         |                         |  |
| 19  | KAZ 201         | Academic Kazakh I                | 3 | 6 | KAZ 150 Basic Kazakh (1215) (C- and above) OR KLL "[B1.2] Intermediate"   |  |  | SEDS, SMG, SSH, SoM  |                         |                         |  |

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| 20   | KAZ 202  | Academic Kazakh II                                | 3 | 6 | KAZ 201 Academic Kazakh I (4561) (C- and above) OR KLL "[B2.2] Upper-Interm."  |  |  | SEDS, SMG, SSH, SoM  |                      |          |  |
| 21   | KAZ 311  | Professional Academic Communication               | 3 | 6 | KAZ 202 Academic Kazakh II (4562) (C- and above) OR KAZ 211 Academic Speaking in Kazakh (702) (C- and above) OR KAZ 212 Academic Writing in Kazakh (703) (C- and above) OR KLL "[C1.1] Advanced" |  |  | SEDS, SMG, SSH, SoM  |                      |          |  |
| 22   | KAZ 349  | Kazakh Mythology                                  | 3 | 6 | KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"  |  |  | SEDS, SMG, SSH, SoM  |                      |          |  |
| <b>Languages, Literature and Linguistics</b> |          |   |   |   |  |  |  |  |                      |          |  |
| 23   | WLL 399  | Independent Study                                 | 3 | 6 |  |  |  | Instructor's Permission Required. Registration through Add Course form only!   |                      |          |  |
| 24   | WLL 400  | Research Assistance in Linguistics and Literature | 1 | 2 | LING 273 Survey of Research Methods in Linguistics (2158) (C- and above)   |  |  | Instructor's Permission Required. Registration through Add Course form only!   |                      |          |  |
| <b>Mathematics</b>                           |          |   |   |   |  |  |  |  |                      |          |  |
| 25   | MATH 161 | Calculus I  | 4 | 8 |  |  |  | 5 year UG SSH, 5 year UG SSH (pending graduation), Biological Sciences, Chemistry, Mathematics, Medical Sciences, Physics, SEDS, SMG | Undeclared SSH       | SSH, SoM |  |
| 26   | MATH 162 | Calculus II                                       | 4 | 8 | MATH 161 Calculus I (118) (C and above)  |  |  | 5 year UG SSH, 5 year UG SSH (pending graduation), Mathematics, Physics  | Chemistry, SEDS, SMG | SSH, SoM |  |
| 27   | MATH 274 | Introduction to Differential Equations            | 3 | 6 | MATH 162 Calculus II (170) (C and above)   |  |  | Chemistry, Mathematics, Physics, Robotics Engineering, Robotics and Mechatronics   | SEDS, SMG, SSH, SoM  |          |  |
| 28   | MATH 497 | Directed Study in Mathematics I                   | 3 | 6 |  |  |  | Instructor's Permission Required. Registration through Add Course form only!   |                      |          |  |
| 29   | MATH 498 | Directed Study in Mathematics II                  | 3 | 6 |  |  |  | Instructor's Permission Required. Registration through Add Course form only!   |                      |          |  |
| <b>Physics</b>                               |          |   |   |   |  |  |  |  |                      |          |  |

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| 30   | PHYS 161 | Physics I for Scientists and Engineers with Laboratory  | 4 | 8 |   | MATH 161 Calculus I (118) (C and above) | PHYS 171 Physics I for Physics Majors with Laboratory (1401) (C- and above)      | SEDS, SMG, SSH, SoM  |  |   |  |
| 31   | PHYS 162 | Physics II for Scientists and Engineers with Laboratory | 4 | 8 | PHYS 161 Physics I for Scientists and Engineers with Laboratory (116) (C- and above) OR PHYS 151 Introductory Physics I with Lab (649) (C- and above) |   | PHYS 172 Physics II for Physics Majors with Laboratory (1402) (C- and above)     | SEDS, SMG, SSH, SoM  |  |   |  |
| 32   | PHYS 299 | Research project and internship                         | 3 | 6 |   |   |  | Instructor's Permission Required. Registration through Add Course form only! |  |   |  |
| 33   | PHYS 399 | Physics Research Project                                | 3 | 6 |   |   |  | Instructor's Permission Required. Registration through Add Course form only! |  |   |  |
| <b>Political Science and International Relations</b> |          |   |   |   |   |   |  |  |  |   |  |
| 34   | PLS 327  | Contemporary Political Theory                           | 3 | 6 | PLS 120 Introduction to Political Theory (512) (C- and above)   |   | PHIL 131 Introduction to Contemporary Political Philosophy (4032) (C- and above) | 5 year UG SSH Political Sciences and International Relations                 | 4 year UG SSH Political Sciences and International Relations | Political Science and International Relations |  |
| 35   | PLS 395  | Independent Study                                       | 3 | 6 | PLS 210 Political Science Research Methods (129) (C- and above) AND PLS 211 Quantitative Methods (221) (C- and above)                                 |   |  | Instructor's Permission Required. Registration through Add Course form only! |  |   |  |
| 36   | PLS 426  | Hannah Arendt on Power, Violence, and Revolution        | 3 | 6 | PLS 120 Introduction to Political Theory (512) (C- and above) AND PLS 210 Political Science Research Methods (129) (C- and above)                     |   |  | Instructor's Permission Required. Registration through Add Course form only! |  |   |  |
| 37   | PLS 441  | Advanced Topics in Comparative Politics                 | 3 | 6 | PLS 140 Introduction to Comparative Politics (223) (C- and above) AND PLS 210 Political Science Research Methods (129) (C- and above)                 |   |  | Instructor's Permission Required. Registration through Add Course form only! |  |   |  |
| 38   | PLS 495  | Research Practicum in PSIR                              | 1 | 2 | PLS 210 Political Science Research Methods (129) (C- and above) AND PLS 211 Quantitative Methods (221) (C- and above)                                 |   |  | Instructor's Permission Required. Registration through Add Course form only! |  |   |  |
| <b>SSH</b>   |          |   |   |   |   |   |  |  |  |   |  |

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| 39 | SSH 300 | School of Sciences and Humanities Internship                    | 3 | 6 |  |  |  | Instructor's Permission Required. Registration through Add Course form only! |  |  |  |
| 40 | SSH 301 | School of Sciences and Humanities Internship: Second Experience | 3 | 6 |  |  |  | Instructor's Permission Required. Registration through Add Course form only! |  |  |  |
| 41 | SSH 398 | Independent Study   | 1 | 2 |  |  |  | Instructor's Permission Required. Registration through Add Course form only! |  |  |  |

**Sociology and Anthropology**

|    |         |                                     |   |   |   |  |  |  |                     |  |  |
|----|---------|-------------------------------------|---|---|---|--|--|--|---------------------|--|--|
| 42 | ANT 345 | Archaeology Field School            | 3 | 6 | ANT 110 Introduction to Sociocultural Anthropology (501) (C and above) OR ANTH 120 Anthropology Theory (137) (C and above) OR ANTH 120 Sociology Theory/Anthropology Theory (135) (C and above) OR ANTH 140 World Prehistory (227) (C and above) OR ANTH 160 Introduction to Biological Anthropology (161) (C and above) OR ANTH 101 Being Human: An Introduction to Four Field Anthropology (2960) (C and above) |  |  | Instructor's Permission Required. Registration through Add Course form only! |                     |  |  |
| 43 | ANT 400 | Research Assistance in Anthropology | 1 | 2 |   |  |  | Instructor's Permission Required. Registration through Add Course form only! |                     |  |  |
| 44 | ANT 404 | Research Assistance in Anthropology | 3 | 6 |   |  |  | Instructor's Permission Required. Registration through Add Course form only! |                     |  |  |
| 45 | SOC 217 | Sociology of the Family             | 3 | 6 |   |  |  | Sociology  | SEDS, SMG, SSH, SoM |  |  |
| 46 | SOC 400 | Research Assistance in Sociology    | 1 | 2 |   |  |  | Instructor's Permission Required. Registration through Add Course form only! |                     |  |  |

**SEDS**

**Chemical and Materials Engineering**

|    |          |                               |   |   |  |  |  |  |  |  |  |
|----|----------|-------------------------------|---|---|--|--|--|--|--|--|--|
| 47 | CHME 400 | Process Design and Simulation | 3 | 6 | CHME 300 Heat and Mass Transfer (5952) (D and above) AND CHME 304 Chemical Reaction Engineering (6168) (D and above) |  |  | 4 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS Chemical and Materials Engineering |  |  |  |
|----|----------|-------------------------------|---|---|--|--|--|--|--|--|--|

**Civil and Environmental Engineering**

|  |           |                                 |   |    |   |  |  |  |  |          |  |
|--|-----------|---------------------------------|---|----|---|--|--|--|--|----------|--|
| 48   | CEE 200   | Structural Mechanics I          | 3 | 6  |   |  |  | 4 year UG SEDS Mechanical Engineering, 4 year UG SEDS Mechanical and Aerospace Engineering | 5 year UG SEDS Mechanical Engineering, 5 year UG SEDS Mechanical and Aerospace Engineering |          |  |
| <b>Computer Science</b>                    |           |                                 |   |    |   |  |  |  |  |          |  |
| 49   | CSCI 115  | Programming Fundamentals        | 4 | 8  |   |  | CSCI 101 Introduction to Computational Sciences (147) (D and above) OR CSCI 111 Web Programming and Problem Solving (110) (D and above) OR CSCI 151 Programming for Scientists and Engineers (192) (D and above) OR ENG 101 Programming for Engineers (4517) (D and above) | SSH, SoM   |  |          |  |
| 50   | CSCI 152  | Performance and Data Structures | 4 | 8  | CSCI 151 Programming for Scientists and Engineers (192) (C- and above) OR ENG 101 Programming for Engineers (4517) (B- and above) |  |  | Computer Science, Robotics Engineering, Robotics and Mechatronics                          | SEDS   | SMG, SSH |  |
| 51   | CSCI 299  | Internship I                    | 3 | 6  |   |  |  | Instructor's Permission Required. Registration through Add Course form only!               |  |          |  |
| 52   | CSCI 399  | Internship II                   | 3 | 6  |   |  |  | Instructor's Permission Required. Registration through Add Course form only!               |  |          |  |
| 53   | CSCI 399F | Internship II - F               | 6 | 12 |   |  |  | Instructor's Permission Required. Registration through Add Course form only!               |  |          |  |
| <b>Electrical and Computer Engineering</b> |           |                                 |   |    |   |  |  |  |  |          |  |
| 54   | ELCE 201  | Circuit Theory                  | 3 | 6  | ELCE 200 Introduction to Electrical Circuits (4991) (C- and above)  |  |  | 3 year UG SEDS Electrical and Computer Engineering   | 4 year UG SEDS Electrical and Computer Engineering   |          |  |

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| 55  | ELCE 301 | Electronic Circuits             | 3 | 6 | ELCE 201 Circuit Theory (5507) (C- and above)   |  |  | Instructor's Permission Required. Registration through Add Course form only! |  |  |  |
| 56  | ELCE 399 | Internship                      | 3 | 6 |   |  |  | Instructor's Permission Required. Registration through Add Course form only! |  |  |  |
| 57  | ELCE 457 | Introduction to Computer Vision | 3 | 6 | ENG 101 Programming for Engineers (4517) (C- and above) AND ENG 200 Engineering Mathematics III (Differential Equations and Linear Algebra) (5009) (C- and above) |  |  | Instructor's Permission Required. Registration through Add Course form only! |  |  |  |
| <b>Mechanical and Aerospace Engineering</b> |          |                                 |   |   |   |  |  |  |  |  |  |
| 58  | ENG 300  | Interdisciplinary Project       | 3 | 6 |   |  |  | Instructor's Permission Required. Registration through Add Course form only! |  |  |  |
| 59  | MAE 300  | Fluid Mechanics I               | 3 | 6 | PHYS 161 Physics I for Scientists and Engineers with Laboratory (116) (D and above)   |  |  | Instructor's Permission Required. Registration through Add Course form only! |  |  |  |
| 60  | MAE 305  | Fluid Mechanics II              | 3 | 6 | MAE 300 Fluid Mechanics I (5926) (D and above) OR EME 275 Fluid Mechanics I (1988) (D and above)  |  |  | Instructor's Permission Required. Registration through Add Course form only! |  |  |  |
| 61  | MAE 306  | Computer Aided Engineering      | 3 | 6 | ENG 202 Numerical Methods in Engineering (5506) (D and above) AND MAE 201 Computer Aided Design (5011) (D and above)  |  |  | Instructor's Permission Required. Registration through Add Course form only! |  |  |  |
| <b>Robotics and Mechatronics</b>            |          |                                 |   |   |   |  |  |  |  |  |  |
| 62  | ROBT 399 | Internship                      | 3 | 6 |   |  |  | Robotics Engineering, Robotics and Mechatronics                              |  |  |  |