

# EARTH AND SPACE SCIENCE (BS) - SECONDARY EDUCATION TRACK

## Program of Study

| Code   | Title   | Credit Hours |
|--|---|--------------|
| <b>Core IMPACTS Area : Institutional Priorities <sup>1</sup></b>                           |   | <b>4-5</b>   |
| COMM 1110  | Public Speaking   | 3            |
| ITDS 1779  | Scholarship Across the Disciplines                                | 2            |
| LEAD 1705  | Introduction to Servant Leadership                                | 2            |
| PERS 1506  | Perspectives 1-hour   | 1            |
| PERS 1507  | Perspectives 2-hour   | 2            |
| Foreign Language Course Options  |   |              |
| ARAB, CHIN, FREN, GERM, GREK, ITAL, JAPN, KREN, LATIN, PORT, SPAN - 1001, 1002, 2001, 2002 |   |              |
| SWAH 1001  | Elementary Swahili I  |              |
| SWAH 1002  | Elementary Swahili II   |              |
| <b>Core IMPACTS Area : Mathematics &amp; Quantitative Skills <sup>1</sup></b>              |   | <b>3-7</b>   |
| DATA 1501  | Introduction to Data Science                                      | 3            |
| MATH 1001  | Quantitative Skills and Reasoning                                 | 3            |
| MATH 1101  | Introduction to Mathematical Modeling                             | 3            |
| MATH 1111  | College Algebra   | 3            |
| MATH 1113  | Pre-Calculus  | 4            |
| MATH 1125  | Applied Calculus  | 3            |
| MATH 1131  | Calculus with Analytic Geometry I                                 | 4            |
| MATH 1132  | Calculus with Analytic Geometry II                                | 4            |
| MATH 1165  | Computer-Assisted Problem Solving                                 | 3            |
| MATH 1401  | Introduction to Statistics  | 3            |
| MATH 1501  | Calculus I  | 4            |
| MATH 2125  | Introduction to Discrete Mathematics                              | 3            |
| STAT 1401  | Elementary Statistics   | 3            |
| <b>Core IMPACTS Area : Political Science and U.S. History</b>                              |   | <b>6</b>     |
| HIST 2111  | U. S. History to 1865   | 3            |
|  | or HIST 2112 U. S. History since 1865                             |              |
| POLS 1101  | American Government   | 3            |
| <b>Core IMPACTS Area : Arts, Humanities, and Ethics</b>                                    |   | <b>6</b>     |
| Select one Fine Arts course  |   | 3            |
| ARTH 1100  | Art Appreciation  |              |
| ARTH 2125  | Introduction to the History of Art I– Prehistoric through Gothic  |              |
| ARTH 2126  | Introduction to the History of Art II– Renaissance through Modern |              |
| MUSC 1100  | Music Appreciation  |              |
| THEA 1100  | Theatre Appreciation  |              |
| ITDS 1145  | Comparative Arts <sup>2</sup>                                     |              |
| Select one Humanities course   |   | 3            |
| ENGL 2111  | World Literature I  |              |
| ENGL 2112  | World Literature II   |              |
| ITDS 1774  | Introduction to Digital Humanities                                |              |

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|---|--|-------------|
| PHIL 2010   | Introduction to Philosophy                           |             |
| ITDS 1145   | Comparative Arts <sup>2</sup>                        |             |
| <b>Core IMPACTS Area : Communicating in Writing</b>                           |  | <b>6</b>    |
| ENGL 1101   | English Composition I                                | 3           |
| ENGL 1102   | English Composition II                               | 3           |
| <b>Core IMPACTS Area : Technology, Mathematics, and Sciences <sup>1</sup></b> |  | <b>7-11</b> |
| ANTH 1145   | Human Origins  | 3           |
| ASTR 1105   | Descriptive Astronomy: The Solar System              | 3           |
| ASTR 1106   | Descriptive Astronomy: Stars and Galaxies            | 3           |
| ASTR 1305   | Descriptive Astronomy Lab                            | 1           |
| ATSC 1112   | Understanding the Weather                            | 3           |
| ATSC 1112L  | Understanding the Weather Lab                        | 1           |
| BIOL 1125   | Contemporary Issues in Biology Non-Lab               | 3           |
| BIOL 1215K  | Introductory Biology                                 | 4           |
| BIOL 1225K  | Contemporary Issues in Biology with Lab              | 4           |
| CHEM 1151   | Survey of Chemistry I                                | 4           |
| & 1151L   | and Survey of Chemistry I Lab                        |             |
| CHEM 1152   | Survey of Chemistry II                               | 4           |
| & 1152L   | and Survey of Chemistry II Lab                       |             |
| CHEM 1211   | Principles of Chemistry I                            | 4           |
| & 1211L   | and Principles of Chemistry I Lab                    |             |
| CHEM 1212   | Principles of Chemistry II                           | 4           |
| & 1212L   | and Principles of Chemistry II Lab                   |             |
| CPSC 1105   | Introduction to Computing Principles and Technology  | 3           |
| CPSC 1301K  | Computer Science I                                   | 4           |
| ENVS 1105   | Environmental Studies                                | 3           |
| ENVS 1105L  | Environmental Studies Laboratory                     | 1           |
| ENVS 1205K  | Sustainability and the Environment                   | 4           |
| GEOG 2215   | Introduction to the Geographic Information Systems   | 3           |
| GEOL 1110   | Natural Disasters: Our Hazardous Environment         | 3           |
| GEOL 1121   | Introductory Geoscience I: Physical Geology          | 3           |
| GEOL 1121L  | Introductory Geoscience I: Physical Geology Lab      | 1           |
| GEOL 1122   | Introductory Geo-sciences II: Historical Geology     | 3           |
| GEOL 1322   | Introductory Geo-sciences II: Historical Geology Lab | 1           |
| GEOL 2225   | The Fossil Record                                    | 4           |
| PHYS 1111   | Introductory Physics I                               | 4           |
| & PHYS 1311   | and Introductory Physics I Lab                       |             |
| PHYS 1112   | Introductory Physics II                              | 4           |
| & PHYS 1312   | and Introductory Physics II Lab                      |             |
| PHYS 1125   | Physics of Color and Sound                           | 3           |
| PHYS 1325   | Physics of Color and Sound Lab                       | 1           |
| PHYS 2211   | Principles of Physics I                              | 4           |
| & PHYS 2311   | and Principles of Physics I Lab                      |             |
| PHYS 2212   | Principles of Physics II                             | 4           |
| & PHYS 2312   | and Principles of Physics II Lab                     |             |
| <b>Core IMPACTS Area : Social Sciences</b>                                    |  | <b>6</b>    |
| Select one Behavioral Science course  |  |             |
| ECON 2105   | Principles of Macroeconomics                         |             |
| ECON 2106   | Principles of Microeconomics                         |             |
| PHIL 2030   | Moral Philosophy                                     |             |
| PSYC 1101   | Introduction to General Psychology                   |             |

|  |                                    |           |
|--|------------------------------------|-----------|
| SOCI 1101  | Introduction to Sociology          |           |
| Select one World Cultures course   |                                    | 3         |
| ANTH 1107  | Discovering Archaeology            |           |
| ANTH 1105  | Cultural Anthropology              |           |
| ANTH 2105  | Ancient World Civilizations        |           |
| ANTH 2136  | Language and Culture               |           |
| ENGL 2136  | Language and Culture               |           |
| GEOG 1101  | World Regional Geography           |           |
| HIST 1111  | World History to 1500              |           |
| HIST 1112  | World History since 1500           |           |
| ITDS 1155  | The Western Intellectual Tradition |           |
| ITDS 1156  | Understanding Non-Western Cultures |           |
| <b>Core IMPACTS Total Hours</b>  |                                    | <b>42</b> |
| <b>Health and Wellness</b>   |                                    | <b>3</b>  |
| KINS 1106  | Lifetime Wellness                  | 2         |
| or PHED 1205   | Concepts of Fitness                |           |
| Select one PEDS course ( <a href="https://catalog.columbusstate.edu/course-descriptions/peds/#peds">https://catalog.columbusstate.edu/course-descriptions/peds/#peds</a> ) |                                    |           |

<sup>1</sup> The hours applied in the Institutional Priorities; Mathematics & Quantitative Skills; and Technology, Mathematics, and Sciences areas must add to 18 credit hours.

<sup>2</sup> ITDS 1145 Comparative Arts, though listed under both Fine Arts and Humanities, may be taken only once.

## Major Requirements

| Code  | Title  | Credit Hours |
|---|--|--------------|
| <b>Core Requirements</b>                        |  |              |
| Complete the core requirements for this program |  | 45           |
| Core Total                                      |  | 45           |
| <b>Field of Study Requirements</b>              |  |              |
| Minimum grade of C is required                  |  |              |
| ASTR 1105                                       | Descriptive Astronomy: The Solar System          | 3            |
| ATSC 1112                                       | Understanding the Weather                        | 3            |
| ENVS 1205K                                      | Sustainability and the Environment               | 4            |
| GEO 1121  | Introductory Geoscience I: Physical Geology      | 3            |
| GEO 1121L                                       | Introductory Geoscience I: Physical Geology Lab  | 1            |
| Select one of the following sequences:          |  | 4            |
| Sequence 1:                                     |  |              |
| PHYS 1111                                       | Introductory Physics I                           |              |
| PHYS 1311                                       | Introductory Physics I Lab                       |              |
| Sequence 2:                                     |  |              |
| PHYS 2211                                       | Principles of Physics I                          |              |
| PHYS 2311                                       | Principles of Physics I Lab                      |              |
| Field of Study Requirements Total               |  | 18           |
| <b>Required for the Major</b>                   |  |              |
| Minimum grade of C is required.                 |  |              |
| ATSC 5117U                                      | Global and Climate Change                        | 3            |
| GEO 1122  | Introductory Geo-sciences II: Historical Geology | 3            |
| Choose one following sequences:                 |  | 4            |
| Sequence 1:                                     |  |              |
| PHYS 1112                                       | Introductory Physics II                          |              |

|  |  |            |
|--|--|------------|
| PHYS 1312  | Introductory Physics II Lab  |            |
| Sequence 2:  |  |            |
| PHYS 2212  | Principles of Physics II   |            |
| PHYS 2312  | Principles of Physics II Lab   |            |
| Choose one of the following ASTR courses:  |  | 3          |
| ASTR 3105  | Physics, Chemistry, and Geology of the Solar System  |            |
| ASTR 3115  | Introduction to Astrophysics   |            |
| UTeach Columbus Teaching Option:   |  |            |
| (Only two attempts allowed for each of the following courses)  |  |            |
| SPED 4115  | Teaching Math and Science to Exceptional Learners (Students must earn a grade of B or better in order to be certified to teach in the state of Georgia.) | 2          |
| UTCH 1201  | Step I: Inquiry Approaches to Teaching   | 1          |
| UTCH 1202  | Step II: Inquiry-Based Lesson Design   | 1          |
| UTCH 2105  | Knowing and Learning in Mathematics and Science  | 3          |
| UTCH 2203  | Step III: Technological and Pedagogical Content Knowledge  | 3          |
| UTCH 3205  | Classroom Interactions   | 3          |
| UTCH 3215  | Research Methods   | 3          |
| UTCH 4205  | Inquiry-Based Instruction  | 3          |
| UTCH 4485  | Student Teaching   | 9          |
| UTCH 4795  | Student Teaching Seminar   | 1          |
| Required for the Major Total   |  | 42         |
| <b>Major Electives</b>   |  |            |
| Total of at least 15 credits in ESS major courses over 3000 must be met in Area H, and a total of at least 18 hours in Area H courses.     |  |            |
| 1 hour from Area A   |  | 1          |
| 1 hour from Area D   |  | 1          |
| Choose one of the following GEOL courses:  |  | 4          |
| GEOL 4275  | Structural Geology   |            |
| GEOL 3201  | Mineralogy and Petrology I   |            |
| Choose one of the following ENVS courses:  |  | 4          |
| ENVS 3105  | Foundations of Environmental Science   |            |
| ENVS 5206U   | Water Resources Management   |            |
| ENVS 5405U   | Topics in Conservation   |            |
| Choose one of the following bio-geology courses:   |  | 3-4        |
| GEOL 5135U   | Oceanography   |            |
| GEOL 5165U   | Hydrology  |            |
| GEOL 5215U   | Geomorphology  |            |
| Choose one of the following Natural Hazards courses:   |  | 3-4        |
| GEOL 5255U   | Environmental Geology  |            |
| ATSC 5125U   | Severe and Hazardous Weather   |            |
| ATSC 5116U   | Meteorology  |            |
| Select 0-2 hours from the following (to total 18 Hours in Area H); Any 3000+ ATSC, ANTH, ASTR, BIOL, CHEM, ENVS, ENGR, GEOL or PHYS course |  |            |
| Major Electives Total  |  | 18         |
| <b>Total Credit Hours</b>  |  | <b>123</b> |