

BACHELOR OF SCIENCE WITH A COMBINED MAJOR IN PHYSICS AND ASTRONOMY AND A MINOR IN MATHEMATICS

Minimum requirements for the BS with a combined major in physics and astronomy and a minor in mathematics

| COURSE | TITLE | S.H. |
|---|---|------|
| General Education Requirements | | |
| Core Competencies | | 9 |
| ENGL 1550 | Writing 1 | |
| ENGL 1551 | Writing 2 | |
| CMST 1545 | Communication Foundations | |
| Mathematics Requirement - included in minor | | |
| Arts and Humanities | | 6 |
| Natural Sciences - included in major | | |
| Social Science | | 6 |
| Social and Personal Awareness | | 6 |
| General Education Elective / First-Year Experience | | 3 |
| Major Requirements | | |
| Physics Courses: | | |
| PHYS 2610 & 2610L | General Physics 1 and General Physics laboratory 1 | 5 |
| PHYS 2611 & 2611L | General Physics 2 and General Physics laboratory 2 | 5 |
| PHYS 3703 | Classical Mechanics and Dynamics | 4 |
| PHYS 3704 & 3704L | Modern Physics and Modern Physics Laboratory | 5 |
| PHYS 3705 & 3705L | Thermodynamics and Classical Statistical Dynamics and Thermodynamics and Classical Statistical Mechanics Laboratory | 4 |
| PHYS 3741 | Electromagnetic Field Theory 1 | 3 |
| Select 6 s.h. of upper division physics courses. | | 6 |
| Astronomy Courses: | | |
| ASTR 1504 | Descriptive Astronomy | 3 |
| ASTR 2609 | Moon and Planets | 3 |
| ASTR 3711 | Astrophysics 1 | 3 |
| ASTR 3712 | Astrophysics 2 | 3 |
| ASTR 4815 | Undergraduate Astronomy Research | 3 |
| ASTR 4811 | Observational Astronomy 1 | 3 |
| ASTR 4812 | Observational Astronomy 2 | 3 |
| Mathematics Courses: | | |
| MATH 1571 | Calculus 1 | 4 |
| MATH 1572 | Calculus 2 | 4 |
| MATH 2673 | Calculus 3 | 4 |
| MATH 3705 | Differential Equations | 3 |
| Minor Course: | | |
| One additional 3 s.h. upper division elective in mathematics is required for the mathematics minor. | | 3 |
| Other Courses | | |

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| CHEM 1515 | General Chemistry 1 | 4 |
| CHEM 1515L | General Chemistry 1 Laboratory | 0 |
| CHEM 1516 | General Chemistry 2 | 4 |
| CHEM 1516L | General Chemistry 2 Laboratory | 0 |
| CSIS 2610 | Programming and Problem-Solving | 4 |
| Elective courses needed: 5 hours of upper division and 2 hours of any level elective. | | 7 |

Total Semester Hours 120

| Course | Title | S.H. |
|-----------------------------------|---|-----------|
| Year 1 | | |
| Fall | | |
| PHYS 2610 & 2610L | General Physics 1 and General Physics laboratory 1 (P, NS) | 5 |
| ASTR 1504 | Descriptive Astronomy (NS) | 3 |
| MATH 1571 | Calculus 1 (P) | 4 |
| ENGL 1550 | Writing 1 | 3 |
| Semester Hours | | 15 |
| Spring | | |
| ASTR 2609 | Moon and Planets | 3 |
| PHYS 2611 & 2611L | General Physics 2 and General Physics laboratory 2 (P) | 5 |
| MATH 1572 | Calculus 2 (P) | 4 |
| First-Year Experience Course | | 3 |
| Semester Hours | | 15 |
| Year 2 | | |
| Fall | | |
| PHYS 3704 & 3704L | Modern Physics and Modern Physics Laboratory (P) | 5 |
| CHEM 1515 & 1515L | General Chemistry 1 and General Chemistry 1 Laboratory (NS) | 4 |
| MATH 2673 | Calculus 3 (P) | 4 |
| ENGL 1551 | Writing 2 | 3 |
| Semester Hours | | 16 |
| Spring | | |
| CHEM 1516 & 1516L | General Chemistry 2 and General Chemistry 2 Laboratory (P, NS) | 4 |
| MATH 3705 | Differential Equations (P) | 3 |
| CMST 1545 | Communication Foundations | 3 |
| CSIS 2610 | Programming and Problem-Solving | 4 |
| Semester Hours | | 14 |
| Year 3 | | |
| Fall | | |
| PHYS 3703 | Classical Mechanics and Dynamics (P) | 4 |
| PHYS 3741 | Electromagnetic Field Theory 1 (P) | 3 |
| ASTR 3711 | Astrophysics 1 (P) | 3 |
| Physics Elective (Upper Division) | | 3 |
| Social Sciences GER Domain | | 3 |
| Semester Hours | | 16 |
| Spring | | |
| PHYS 3705 & 3705L | Thermodynamics and Classical Statistical Dynamics and Thermodynamics and Classical Statistical Mechanics Laboratory (P) | 4 |
| Physics Elective (Upper Division) | | 3 |
| ASTR 3712 | Astrophysics 2 (P) | 3 |
| Arts & Humanities GER Domain | | 3 |

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| Social & Personal Awareness GER Domain | | 3 |
| Semester Hours | | 16 |
| Year 4 | | |
| Fall | | |
| ASTR 4811 | Observational Astronomy 1 | 3 |
| ASTR 4815 | Undergraduate Astronomy Research (Capstone) | 3 |
| Upper Division elective | | 3 |
| Arts & Humanities Elective GER Domain | | 3 |
| Social Sciences Elective GER Domain | | 3 |
| Semester Hours | | 15 |
| Spring | | |
| ASTR 4812 | Observational Astronomy 2 (P) | 3 |
| Math Elective (Upper Division) | | 3 |
| Electives (Upper Division) | | 2 |
| Electives | | 2 |
| Social & Personal Awareness GER Domain | | 3 |
| Semester Hours | | 13 |
| Total Semester Hours | | 120 |