

Department of Astronomy

University of Massachusetts, Amherst

Requirements for Astronomy B.S. Degree - Space Science Track (for students entering the University Fall 2013 or later)

Recommended for students pursuing an astronomy-related professional career after graduation. Majors in this track must develop a plan to complete course requirements with their advisor.

The requirements listed below are the Department major requirements only. In addition, to graduate you will need to satisfy the University General Education requirements and the College requirement of 60 credits in College courses.

Astronomy Courses:

ASTRON 191A: First Year Seminar (1 cr, Fall semester only)

ASTRON 228: Stars and Galaxies (3 cr, Spring semester only)

ASTRON 301: Writing in Astronomy (3 cr, satisfies Junior year writing requirement – Spring semester only)

ASTRON 335: Modern Astrophysics (4 cr, Fall semester only)

ASTRON 339: Astronomy in a Global Context (3 cr., satisfies integrative experience requirement - Spring semester only)

Two additional courses (each at least 3 credits) at the 200+ level and one additional course (at least 3 credits) at the 300+ level (could be in related fields such as Geoscience or Physics – need Department Advisor approval)

Some options for 200+ and 300+ Astronomy courses:

ASTRON 220: Special Topics in Astronomy (3 cr., usually Fall semester)

ASTRON 223: Planetary Science (3 cr, usually Fall semester)

ASTRON 224: Stellar Astronomy (4 cr, usually Spring semester)

ASTRON 225: Galactic and Extragalactic Astronomy (4 cr, usually Spring semester)

ASTRON 226: Cosmology (3 cr, usually Fall semester)

ASTRON 330: Topics in Astrophysics (3 cr.)

ASTRON 337: Techniques of Optical and Infrared Astronomy (4 cr., Fall semester)

(Although not required, we encourage students to get involved in research and take an independent study course)

Physics Courses:

PHYSIC 151 (4 credits with lab): General Physics I (4 cr, fall or spring semesters) or
PHYSIC 181 (4 credits with lab): (4 cr., Fall semester only)

PHYSIC 152 (4 credits with lab): General Physics II (4 cr., fall or spring semesters) or
PHYSIC 182 (4 credits with lab): (4 cr., Spring semester only)

PHYSIC 281: Computational Physics (3 cr, Fall semester only)

PHYSIC 284 (and associated lab PHYSIC 286): Modern Physics I (4 cr., Spring semester only)

PHYSIC 287 (and associated lab PHYSIC 289): Physics III – Waves and Thermodynamics (4 cr, Fall semester only)

One additional (at least 3-credits) 400+ level course in Physics

Math Courses:

MATH 131: Calculus I (4 cr., fall or spring semesters)

MATH 132: Calculus II (4 cr., fall or spring semesters)

MATH 233: Multivariate Calculus (3 cr., fall or spring semesters)

Concentration Requirement:

Three courses (at least 3 credits each) in a related field agreed to by the student's Department Advisor

Suggested Course Schedule:

Freshman Year:

Fall: ASTRON 191A, PHYSIC 151/181, MATH 131
Spring: ASTRON 228, PHYSIC 152/182, MATH 132

Sophomore Year:

PHYSIC 281 (Fall), PHYSIC 287/289 (Fall), PHYSIC 284/286 (spring), MATH 233 (Fall and spring), Two additional 200+ level astronomy, Concentration courses

Junior/Senior Years:

ASTRON 301 (Spring), ASTRON 335 (Fall), ASTRON 339 (Spring). One additional 400+ level physics, and one additional 300+ level astronomy, Concentration courses