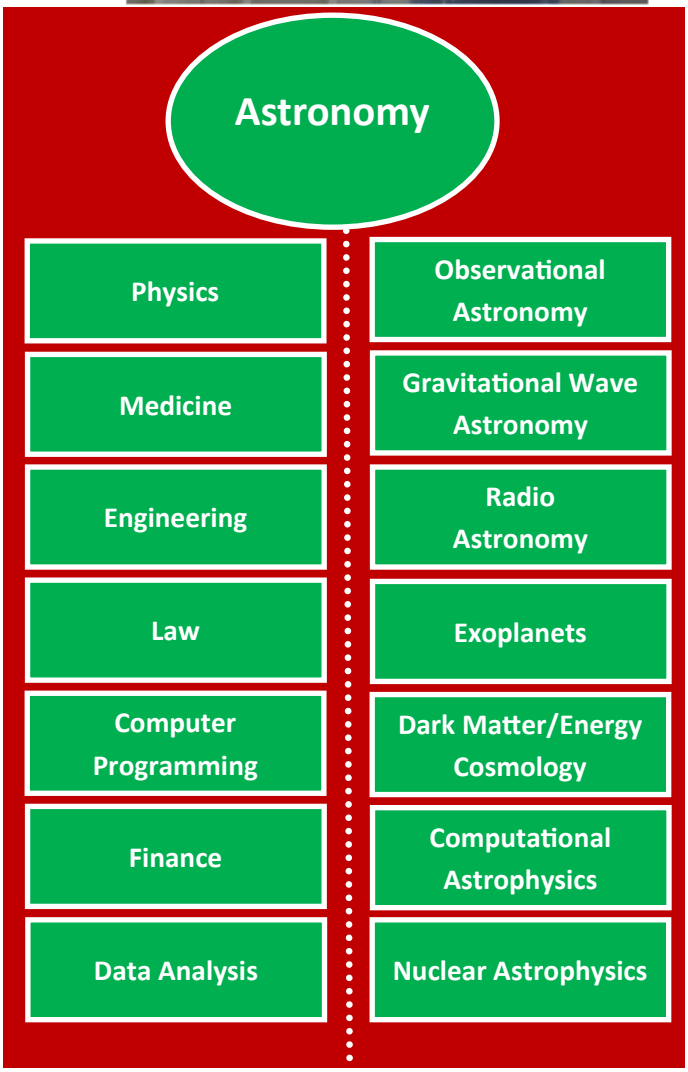
Stony Brook University

Astronomy

Stony Brook's Telescope on the roof of the Earth and Space Science Building

Astronomy

Astronomy applies the laws of physics to understand the Universe around us, from exoplanets, stars and their evolution and death to galaxies, clusters, and the structure and evolution of the Universe itself. Observation of light throughout the electromagnetic spectrum is the primary tool used to understand the Universe, but new avenues like neutrinos and gravitational wave astronomy provide exciting views into the extreme matter found in neutron stars and black holes. Astronomers at Stony Brook focus on star formation, compact objects, radio and extragalactic astronomy, computational modeling of stellar explosions, and cosmology. Our group is successful in getting time of the largest telescopes (space and ground based) in the world as well as significant supercomputing resources for astrophysical simulations. The Stony Brook Astronomy group prides itself on engaging undergraduate students in research such as data analysis, simulation and software engineering, and analytic projects. Astronomy majors are taught the skills needed for problem solving, and apply these to some of the most fascinating problems in the universe. Our graduates go on to strong graduate programs as well as industry to apply these skills to new problems in fields such as ones shown here.



Astronomy / Planetary Sciences

Advantages of the Astronomy major

The astronomy major gives valuable training in computational science via the analysis of large data sets which allows you to consider the wide range of careers on the previous page. You should use the electives in this sample course sequence to shape the direction of your future career.

The astronomy group at Stony Brook is especially well-known for it's work with nuclear and high-energy astrophysics and cosmology. Recently, we've partnered with the Center for Computational Astrophysics in New York City by hiring two new faculty to expand our research in gravitational waves and in stellar, extragalactic and planetary sciences. The first merger of two neutron stars was observed with gravitational waves and found using light to have properties similar to those predicted by Professor Lattimer.

Contact us:

For advice on the astronomy major
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Sample Course Sequence: Astronomy Major

This sample course sequence satisfies all astronomy and university requirements for the major as long as the total number of credits is at least 120, of which at least 8 credits of astronomy-related courses are used to set your direction. Courses satisfying requirements of the Stony Brook Curriculum are shown in dark green. Additional courses are called “electives”. Particularly useful electives are shown with course numbers.

FALL, Freshman Year	SPRING, Freshman Year
MAT 131 Calculus I	MAT 132 Calculus II
PHY 131/133 Physics 1/Lab	PHY 132/134 Physics 2/Lab
CCS 101 Cinema	PHY 153 Python (elective)
WRT 102 Intermediate Writing	HIS 100 The Ancient World
ITS 101 Introduction to SB	ITS 102 Topics information tech
AST 100 AST Today	

FALL, Sophomore Year	SPRING, Sophomore Year
MAT 307 Calc 3/Lin. Alg.	MAT 308 Calc 4/Lin. Alg.
PHY 251/252 Modern/Lab	PHY 300 Waves and Optics
PHY 277 Programming	AST 203 Astronomy
AST 205 Planets (elective)	AST 287 Research (elective)
AST 248 Search for Life	

FALL, Junior Year	SPRING, Junior Year
AST 341 Stars and Radiation	PHY 306 Thermo Stat Mech
HIS 103 American His to 1877	AST 346 Galaxies
elective	JRN 101 News Literacy
elective	elective
elective	elective

FALL, Senior Year	SPRING, Senior Year
AST 487 Research	AST 390 Astrophysics (elective)
AST 347 Cosmology	elective
AST 443 Observational Lab	elective
HIS 396 US History	elective
SPN111 Elementary Spanish I	SPN112 Elementary Spn. II
AST 459 Write Effectively	