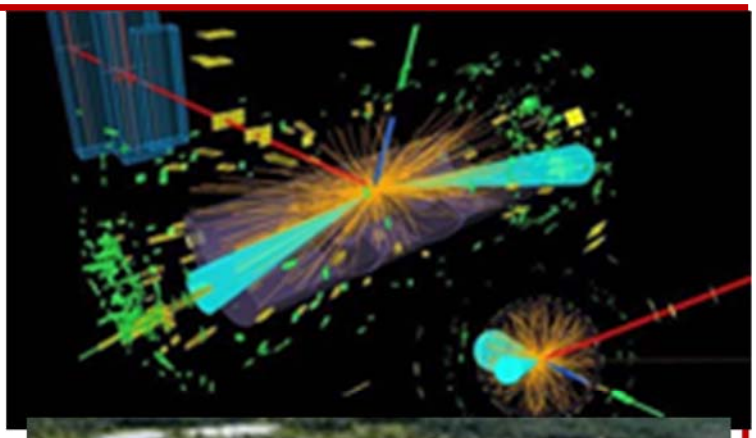
Stony Brook University

PHYSICS



Display of an ATLAS detector event at CERN

National Synchrotorn Light Source accelerator at Brookhaven National Lab

Physics

Physics is crucial to understanding the world around us, the world inside us, and the world beyond us. It is the most basic and fundamental science. Physics encompasses the study of the universe from the largest galaxies to the smallest subatomic particles.

Physics challenges our imaginations with concepts like relativity and string theory, and it leads to great discoveries, like computers and lasers, that lead to technologies which change our lives—from healing joints, to curing cancer, to developing sustainable energy solutions.

Physics is the basis of many other sciences, including chemistry, oceanography, seismology, astronomy, biology, and medicine. All are easily accessible with a Bachelor of Science in Physics degree from Stony Brook—especially if you use your elective courses to pick your direction.

Physicists are problem solvers. Their analytical skills make physicists versatile so they work in interesting places. Some examples of the careers where physicists work are shown here.

Physics

Physics	Biology
Medicine	Geology
Astronomy	Electrical Engineering
Law	Mechanical Engineering
Computer Programming	Chemical Engineering
Finance	Civil Engineering
Industry	Biomedical Engineering

Physics

Advantages of the Physics Major

A sample course sequence for a physics major is shown here. After the freshman year you can choose among a large number of elective courses. You should choose these electives to shape the direction of your career after graduation. Research is very important in giving you enough information from which to choose a direction—which could be a second major or a minor. Computing is very important because essentially all research uses computing.

There are ample opportunities to find your research project at Stony Brook or our partners at Brookhaven National Laboratory. Possibilities range from the very large (cosmology, gravitational wave astronomy), to the very small (nuclear collisions in RHIC at BNL or particle collisions at CERN). There is ample opportunity to find your direction.

Contact us:

For advice on the physics major
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Sample Course Sequence: Physics Major

This sample course sequence satisfies all physics and university requirements as long as the total number of credits is at least 120 of which 65 are required for the physics major including at least 12 credits of physics-related courses (not shown because they are completely general), which 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

MAT 131 Calculus I
PHY 131/133 Physics 1/Lab
CCS 101 Cinema
WRT 102 Intermediate Writing
ITS 101 Introduction to SB

SPRING, Freshman Year

MAT 132 Calculus II
PHY 132/134 Physics 2/Lab
PHY 153 Python (elective)
HIS 100 The Ancient World
ITS 102 Topics information tech

FALL, Sophomore Year

MAT 307 Calc 3/Lin. Alg.
PHY 251/252 Modern/Lab
PHY 277 Programming
AST 248 Search for Life
elective

SPRING, Sophomore Year

MAT 308 Calc 4/Lin. Alg.
PHY 300 Waves and Optics
PHY 335 Electronics Lab
elective
elective

FALL, Junior Year

PHY 301 Electricity Magnetism
PHY 303 Mechanics
HIS 103 American His to 1877
elective
elective

SPRING, Junior Year

PHY 306 Thermo Stat Mech
PHY 308 Quantum Physics
PHY 302 EM Theory (elective)
JRN 101 News Literacy
elective

FALL, Senior Year

PHY 487 Research
PHY 445 Senior Laboratory
HIS 396 US History
SPN 111 Elementary Spanish
PHY 459 Write Effectively
elective

SPRING, Senior Year

PHY 431 Nuc. Phys. (elective)
PHY 408 Relativity (elective)
elective
SPN 112 Elementary Spn. II
elective