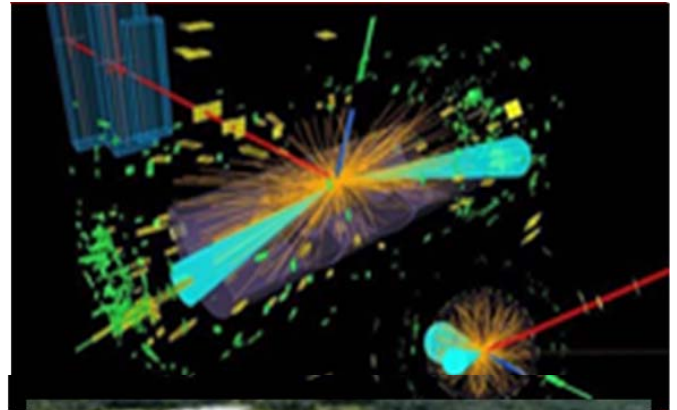




Display of an ATLAS detector event at CERN



National Synchrotron Light Source accelerator at Brookhaven National Lab



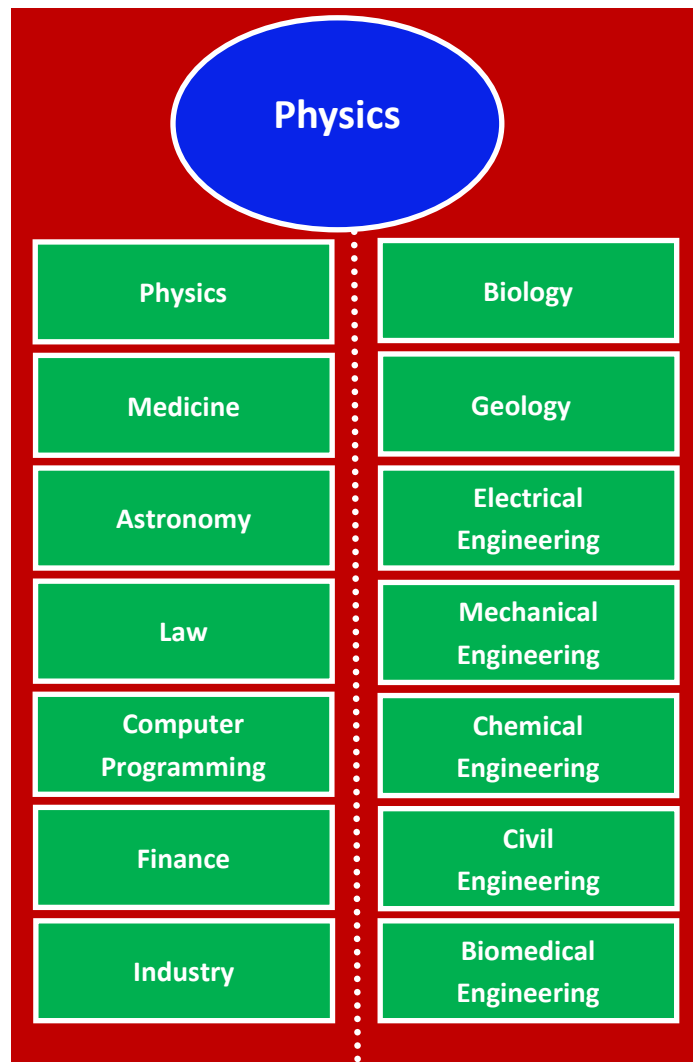
## Physics

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

## 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