

# PHSX - PHYSICS

PHSX 103 Our Physical World. Term Typically Offered: Fall, Spring, Summer Prerequisite(s): M 095. Corequisite(s): PHSX 104. Concentrates on fundamental ideas of physics: energy, forces, and conservation laws. Helps students understand basic principles which underlie and explain all diverse phenomena and structures of the physical world. Emphasizes conceptual rather than mathematical treatment; however, basic algebra skills are required. Lecture Hours 3 Department: Sciences - Biology & Phys Sci	3 Credits	PHSX 220 Physics I. Term Typically Offered: Fall Prerequisite(s): M 171 or concurrent enrollment in M 171. Corequisite(s): PHSX 221. 4cr. (3 lec/1 other/wk) Presents calculus-based treatment of introductory physics covering vector analysis, Newton's Laws of Motion, conservation laws, bulk properties of matter, fluid dynamics, and wave motion. This is the first semester of a two-semester sequence. Students may receive credit for only one introductory sequence: PHSX 205-207 or PHSX 220-232. The course consists of three 1-hour face-to-face lectures per week plus a 1-hour integrated recitation each week. Lecture Hours 3 Department: Sciences - Biology & Phys Sci	4 Credits
PHSX 104 Our Physical World Lab. Term Typically Offered: Fall, Summer Corequisite(s): PHSX 103. Examines and analyzes the immediate physical environment in terms of fundamental principles through data collection, analysis and the formation of scientifically valid conclusions. Develops an appreciation for the simplicity of basic physical laws and the broad range of phenomena that can be explained by them. Lab Hours 1 Department: Sciences - Biology & Phys Sci	1 Credit	PHSX 221 Physics I Lab. Term Typically Offered: Fall Corequisite(s): PHSX 220. Laboratory to complement the lecture in PHSX 220. Lab Hours 1 Department: Sciences - Biology & Phys Sci	1 Credit
PHSX 205 College Physics I. Term Typically Offered: Fall Prerequisite(s): M 122. Corequisite(s): PHSX 206. Presents an algebra-based treatment of introductory physics covering vector Analysis, Newton's Laws of Motion, conservation laws, bulk properties of matter, fluid mechanics and wave motion. This is the first semester of a two semester sequence. Students may receive credit for only one introductory sequence: PHSX 205-206 or PHSX 220-232. Lecture Hours 3 Department: Sciences - Biology & Phys Sci	3 Credits	PHSX 232 Physics II & Thermo. Term Typically Offered: Spring Prerequisite(s): M 171, PHSX 220, PHSX 221. Corequisite(s): PHSX 233. 4cr. (3 lec/1 other/wk) Presents a continuation of the calculus-based treatment of physics with a discussion of thermodynamics, electricity and magnetism, electric circuits, and the behavior and properties of light. Students may receive credit for only one introductory sequence: PHSX 205-207 or PHSX 220-232. The course consists of three 1-hour face-to-face lectures per week plus a 1-hour integrated recitation each week. Lecture Hours 3 Department: Sciences - Biology & Phys Sci	4 Credits
PHSX 206 College Physics I Lab. Term Typically Offered: Fall Prerequisite(s): M 151. Corequisite(s): PHSX 205. Laboratory to complement the lecture in PHSX 205. Lab Hours 1 Department: Sciences - Biology & Phys Sci	1 Credit	PHSX 233 Physics II & Thermo Lab. Term Typically Offered: Spring Corequisite(s): PHSX 232. Laboratory to complement the lecture in PHSX 232. Lab Hours 1 Department: Sciences - Biology & Phys Sci	1 Credit
PHSX 207 College Physics II. Term Typically Offered: Spring Prerequisite(s): PHSX 205 and PHSX 206. Presents a continuation of PHSX 205 with a discussion of thermodynamics, electricity and magnetism, electric circuits, and the behavior and properties of light (with an emphasis on optical applications). This is the second semester of a two semester sequence. Students may receive credit for only one introductory sequence: PHSX 205-207 or PHSX 220-232. Lecture Hours 3 Department: Sciences - Biology & Phys Sci	3 Credits	PHSX 294 Seminar/Workshop. Department: Sciences - Biology & Phys Sci	1-4 Credits
PHSX 208 College Physics II Lab. Term Typically Offered: Spring Prerequisite(s): PHSX 205 and PHSX 206. Complements the lecture in PHSX 207 with emphasis on electricity, magnetism, and thermodynamics. Lab Hours 1 Department: Sciences - Biology & Phys Sci	1 Credit	PHSX 343 Modern Physics. Term Typically Offered: Fall (even years) Prerequisite(s): PHSX 232. Presents the fundamentals of relativity and quantum mechanics with an emphasis on developing the mathematical tools necessary for coordinate transformations, 2nd order partial differential equations, matrices, eigenvalues and eigenvectors. Lecture Hours 3 Department: Sciences - Biology & Phys Sci	3 Credits
		PHSX 344 Modern Physics Lab. Term Typically Offered: Fall (even years) Prerequisite(s): PHSX 232. Corequisite(s): PHSX 343. Presents laboratory exercises to complement the lecture in PHSX 343. Lab Hours 1 Department: Sciences - Biology & Phys Sci	1 Credit

PHSX 391 Special Topics. 3 Credits

Prerequisite(s): PHSX 343.

Designed to serve the needs of students who are interested in continued study in physics beyond the introductory level. The course will be devoted to an in-depth study of one of the following topics: electricity and magnetism, classical mechanics, or quantum mechanics.

Lecture Hours 3

Department: Sciences - Biology & Phys Sci

PHSX 490 UG Research. 1-6 Credits

Prerequisite(s): Junior standing or consent of instructor.

Provides students the opportunity to conduct a research project under the supervision of a faculty member, including library and experimental research as appropriate, analysis of the results, and the submission of a formal research report upon completion of the project.

Department: Sciences - Biology & Phys Sci

PHSX 491 Special Topics. 3 Credits

Prerequisite(s): PHSX 391 in the area to be continued.

Continues a topic covered in PHSX 391. The follow-up for electricity and magnetism will be electromagnetic wave theory; for classical mechanics will be fluid dynamics; for quantum mechanics will be further analysis of more complicated atomic systems and a study of Dirac's matrix representation of the Schrodinger equation.

Lecture Hours 3

Department: Sciences - Biology & Phys Sci

PHSX 492 Independent Study. 1-4 Credits

Prerequisite(s): consent of instructor and department chairperson.

Designed to provide the student with the opportunity to study any special aspect of physics which is not offered directly as a course.

Department: Sciences - Biology & Phys Sci

PHSX 494 Seminar/Workshop. 1-4 Credits

Department: Sciences - Biology & Phys Sci

PHSX 498 Internship/Cooperative Educ. 1-9 Credits

Department: Sciences - Biology & Phys Sci