Physics (PHYS)

Courses

PHYS 130   College Physics I* (5 Hours) ⏵
Prerequisites : MATH 171 or an appropriate score on a math placement test.
In this introductory course for pre-professional and general education, students will learn the fundamentals of selected areas of classical physics. Using the tools of algebra and trigonometry, the course develops the topics of translational and rotational motion, force, work, mechanical and thermal energy, linear and angular momentum, and fluid mechanics. The two-semester PHYS 130/131 sequence is designed to meet the requirements of area pre-professional programs. This is a transfer course that meets the college's requirements for associate's degree programs and meets transfer requirements of area colleges and universities. This course does not normally fulfill the requirement of engineering programs. The course includes an integrated laboratory component the completion of which is a necessary part of the total instructional package.

PHYS 130H   HON: College Physics I* (1 Hour)
Prerequisites : Honors department approval.
One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

PHYS 131   College Physics II* (5 Hours) ⏵
Prerequisites : PHYS 130.
In this introductory course for pre-professional and general education, students will learn the fundamentals of selected areas of classical physics. Using the tools of algebra and trigonometry, the course develops the topics of electricity and magnetism, waves, optics, and some modern physics. The two-semester PHYS 130/131 sequence is designed to meet the requirements of area pre-professional programs. This is a transfer course that meets the college's requirements for associate's degree programs and meets transfer requirements of area colleges and universities. This course does not normally fulfill the requirements of engineering programs. The course includes an integrated laboratory component the completion of which is a necessary part of the total instructional package.

PHYS 191   Math and Physics for Games I* (4 Hours)
Prerequisites : (MATH 171 with a grade of "C" or higher or MATH 173 with a grade of "C" or higher or appropriate score on math placement test) and GAME 121.
This introductory course focuses on the mathematics and physics concepts needed to program a variety of video game scenarios. Students will learn to use vectors and matrix transformations to model the motion of physical objects in two and three dimensions. Students will also learn various computer programming methods in order to model these mathematical and physical concepts. MATH 191 and PHYS 191 are the same course; enroll in only one.

PHYS 191H   HON: Math and Physics for Games I (1 Hour)
One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information. Prerequsite: Honors department approval.

PHYS 214   Introduction to Teaching Math and Science I* (1 Hour)
Prerequisites : MATH 171 with a grade of "C" or higher or an appropriate score on the math placement test or department approval.
This course allows math and science students to explore and develop an appreciation for teaching as a career. To support their learning, students will be introduced to the theory and practice that is necessary to design and deliver quality instruction. They will plan and implement lessons of an inquiry-based curriculum in an elementary classroom during the semester. MATH 214, ASTR 214, BIOL 214, CHEM 214, GEOS 214, PHYS 214 and PSCI 214 are the same course; enroll in only one.

PHYS 215   Introduction to Teaching Math and Science II* (1 Hour)
Prerequisites : ASTR 214 with a grade of "C" or higher or BIOL 214 with a grade of "C" or higher or CHEM 214 with a grade of "C" or higher or GEOS 214 with a grade of "C" or higher or MATH 214 with a grade of "C" or higher or PHYS 214 with a grade of "C" or higher or PSCI 214 with a grade of "C" or higher.
Students learn about the middle school environment and work on math and science inquiry-based lesson analysis, design and assessment. Student partners will plan and teach three inquiry-based lessons in a middle school. The course emphasizes writing 5E lesson plans with a focus on the importance of using appropriate questioning and assessment strategies throughout the lesson, as well as how to analyze and modify a lesson based on personal reflections and observer feedback. By the completion of the course, students should be able to reflect on their personal suitability/interest in teaching secondary math or science, and develop a feasible pathway to a career in teaching. MATH 215, ASTR 215, BIOL 215, CHEM 215, GEOS 215, PHYS 215 and PSCI 215 are the same course; enroll in only one.

PHYS 220   Engineering Physics I* (5 Hours) ⏵
Prerequisites or corequisites: MATH 242.
Engineering Physics I (and associated laboratory experience) is the study of translational and rotational motion, force, work, mechanical and thermal energy, linear and angular momentum, mechanical waves, and fluid motion using the tools of algebra, trigonometry, and calculus.

PHYS 221   Engineering Physics II* (5 Hours) ⊤▶
Prerequisites : PHYS 220 and MATH 242.
Engineering Physics II (and associated laboratory experience) is the continuation of Engineering Physics I. It is the study of electricity, magnetism, electromagnetic waves, and optics using the tools of algebra, trigonometry, and calculus.