

Class Schedule - Spring 2010

Physics

498 **Special Topics in Physics** credit: 1 to 4 hours.

Subject offerings of new and developing areas of knowledge in physics intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary.

CRN	Type	Section	Time	Days	Location	Instructor
36765	lecture	BIO	10:30 AM - 11:50 AM	MW	room 158 Loomis Laboratory	Selvin, P
<p>3 hours Intro to Biological PhysicsINTRODUCTION TO BIOLOGICAL PHYSICS. We will apply simple yet powerful ideas of physics to gain some understanding of biology. (What is the inertia of a bacteria and how does this affect its behavior?) We will begin with atoms, move to molecules, then macromolecules, then cells, and finally whole systems. For example, how do we see? The answer: photons cause the release of chemicals that create electricity. How do we move? The answer: tiny biomolecular motors break chemical bonds, using the energy to create force and motion with efficiencies that put man-made machines to shame. These motors, and indeed, much of biology at the molecular level, operate at the nanometer (one-billionth of a meter) and picoNewton (1 trillionth of a pound) scales. How can we measure such tiny things? Come find out! Prerequisite: PHYS 211-212-213 sequence or consent of instructor. No prior biology knowledge or prerequisites, since the course includes a molecular biology primer.</p>						
49741	lecture	BIP	10:30 AM - 11:50 AM	MW	room 158 Loomis Laboratory	Selvin, P
<p>4 hours Intro to Biological PhysicsMeets with PHYS 498BIO (36765). Graduate students only, for 4 hours credit. (Undergraduates should enroll in 36765 for 3 hours credit.)Restricted to Graduate - Urbana-Champaign.</p>						
40425	laboratory-discussion	PM1	11:00 AM - 01:50 PM	F	room 6105 Engineering Sciences Bldg	Errede, S
	laboratory-discussion	PM1	01:00 PM - 02:20 PM	TR	room 6105 Engineering Sciences Bldg	Errede, S
<p>4 hours Physics of Musical InstrumentsPHYSICS OF MUSIC AND MUSICAL INSTRUMENTS. (Also available as PHYS 498 section PM2.) This course will investigate the physics of all kinds of music and musical instruments, the generation and propagation of sound waves in various media, and acoustics in general. Topics covered will include: Sound waves & propagation of sound waves, complex vibrations and resonance phenomena, perception of sound, tone quality, frequency & pitch, musical intervals, scales, tuning & temperament, all kinds of musical instruments, all kinds of music, auditorium and room acoustics, sound transducers, microphones, loudspeakers and loudspeaker enclosure design. Prerequisites: PHYCS 211, 212 and 214; or consent of instructor.</p>						
40426	laboratory-discussion	PM2	01:00 PM - 02:20 PM	TR	room 6105 Engineering Sciences Bldg	Errede, S
	laboratory-discussion	PM2	02:00 PM - 04:50 PM	F	room 6105 Engineering Sciences Bldg	Errede, S

4 hours Physics of Musical InstrumentsPHYSICS OF MUSIC AND MUSICAL INSTRUMENTS. (Also available as PHYS 498 section PM1. See PM1 for a course description.)