

Course Schedule - Fall 2008

Physics

199 **Undergraduate Open Seminar** credit: 1 to 5 hours.
Approved for both letter and S/U grading. May be repeated.

CRN	Type	Section	Time	Days	Location	Instructor
10145	independent study		ARRANGED			
10145: Independent Study Instructor Approval Required INDEPENDENT STUDY. To register for independent study under PHYS 199, use the PHYS 199 CRN (available from the departmental undergraduate records office) specific to the instructor with whom you have arranged to work. (You cannot register under the general CRN 10145.)						
34865	laboratory-discussion	BCS	04:00 PM - 05:20 PM	W	room 257 Loomis Laboratory	Hubler, A
34865: 1 hours Behavior of Complex Systems Discovery course. BEHAVIOR OF COMPLEX SYSTEMS: CHAOS, FRACTALS AND ARTIFICIAL LIFE, 1 hour. The behavior of complicated systems with many parts will be explored with hands-on computer simulations and lab experiments. Students will experiment with lightning, turbulence, explosions, and human rhythms as well as use simple computer models to imitate their irregular and symmetric patterns and dynamics. Students will develop an intuition as to why isolated complex systems prefer harmony and symmetry, whereas competing complex systems prefer chaos. Discussions will include applications of this within business, engineering and social sciences. First Year Discovery Program Course. Registration restricted to freshmen. Students should enroll in only one Discovery course.						
34855	laboratory-discussion	ESP	04:00 PM - 05:20 PM	T	room 257 Loomis Laboratory	Pitts, K
34855: 1 hours Science and Pseudoscience Discovery course. SCIENCE AND PSEUDOSCIENCE, 1 hour. The world we live in continues to develop at an amazing rate, with much of that development fueled by science and technology. Despite the overwhelming impact that scientific advances have on our society, a large number of people continue to hold irrational, unsupported beliefs in things like extrasensory perception, alien abductions and psychic crime-solvers. This one hour course will take a critical look at some of these beliefs from the standpoint of scientific inquiry and exploration. We will discuss the scientific method, how science progresses and the types of argumentative fallacies that pervade the pseudoscientific community. In addition, we will discuss examples of good science, and show how the scientific method is self-correcting. Students will have an opportunity to research paranormal claims, as well as play "devil's advocate" during in-class debates. This course is aimed at nonscientists (although science majors could benefit from the course as well) with the specific goals of teaching students how to be thoughtful, skeptical consumers of information and the importance of the scientific method. First Year Discovery Program Course. Registration restricted to freshmen. Students should enroll in only one Discovery course.						
34870	lecture-discussion	HM	04:00 PM - 05:50 PM	M	room 257 Loomis Laboratory	Makins, N
34870: 1 hours Honors Mechanics HONORS SEMINAR: TOPICS IN MECHANICS. PREREQUISITES: CONCURRENT REGISTRATION IN PHYS 211 AND CONSENT OF INSTRUCTOR. PHYS 199HM CAN BE USED TO SATISFY THE HONORS COMPONENT OF PHYS 211. PHYS 199HM is the honors supplement to PHYS 211 and is intended for those students intending to major in physics or who have a strong interest in the subject. Areas to be addressed include rotational and central force motion, non-inertial frames, non-linear systems and post-Newtonian mechanics. The use of simple visualization tools such as Mathematica and Excel will be encouraged.						

34876	lecture-discussion	HO	01:00 PM - 02:50 PM	M	room 139 Loomis Laboratory	Makins, N
<p>34876: 1 hours Honors Electricity & Magnetism HONORS SEMINAR: TOPICS IN ELECTRICITY AND MAGNETISM. PREREQUISITES: PHYS 211, CONCURRENT REGISTRATION IN PHYS 212, AND CONSENT OF INSTRUCTOR. PHYS 199HO CAN BE USED TO SATISFY THE HONORS COMPONENT OF PHYS 212. Students investigate special topics in electricity and magnetism. Through weekly meetings (similar in format to the discussion sections of Physics 211 and 212), students will derive for themselves some of the surprising features of our post-classical physical world. For example, the need for special relativity, the existence of magnetic fields, and the origin of electromagnetic radiation are consequences of simple observations such as the constancy of the speed of light. Other topics will include the nature of Gauss' law and Maxwell's equations, potentials and superposition, amplifiers, analog computers, and the role of quantum mechanics in electrodynamics. PHYS 199HO is intended for students who have been comfortable with the level of difficulty of PHYS 211, and whose math skills are fairly strong. It allows students to confront in greater depth some of the most interesting intellectual issues in classical electrodynamics. The course will use calculus as a problem-solving tool.</p>						
34885	lecture-discussion	HT	01:00 PM - 02:50 PM	M	room 257 Loomis Laboratory	Wolfe, J
<p>34885: 1 hours Honors Thermal & Quantum Phys HONORS SEMINAR: TOPICS IN HEAT, THERMODYNAMICS, AND MODERN PHYSICS. PREREQUISITES: PHYS 211 AND PHYS 212 AND CONCURRENT REGISTRATION IN PHYS 214 AND PHYS 213 AND CONSENT OF INSTRUCTOR. PHYS 199HT CAN BE USED TO SATISFY THE HONORS COMPONENT OF PHYS 214 AND PHYS 213. PHYS 199HT is the honors supplement to PHYS 214/213 and is intended for those students either planning to major/minor in physics or having a strong interest in the subject. Areas to be covered during PHYS 214 include particle scattering, photon quantum states, simple approximation methods (e.g., variational methods), particle exchange, and quantum statistics. Areas to be covered during PHYS 213 include diffusion and heat conduction, the Maxwell-Boltzmann distribution and the ideal gas, the Planck distribution and radiation, free energy and the chemical potential, and quantum gases.</p>						
34893	discussion-recitation	MC	07:00 PM - 08:50 PM	R	room 132 Loomis Laboratory	
<p>34893: 1 hours Enrichment Electricity & Mag PHYS 199MC is for students enrolled in FA08 PHYS 212 who took SP08 PHYS 199M.</p>						
34859	laboratory-discussion	POM	01:00 PM - 02:50 PM	F	room 6105 Engineering Sciences Bldg	Errede, S
<p>34859: 2 hours Physics of Music & Instruments Discovery course. PHYSICS OF MUSIC / PHYSICS OF MUSICAL INSTRUMENTS, 1 hour. This course will cover the following topics and will have accompanying lab demonstrations and experimental setups for hands-on direct learning experiences for the students: the physics of sound (propagation of sound waves), the physics of hearing (psycho-acoustics), the physics of music (all musical styles, and music in the natural world -- living organisms and physical processes), the physics of musical instruments (brass, wind, strings percussion, song, electronic, computer and beyond). First Year Discovery Program Course. Registration restricted to freshmen. Students should enroll in only one Discovery course.</p>						