Course Schedule - Fall 2005

Astronomy

100 ***Perspectives in Astronomy*** Credit: 3 hours.

(ASTR 100) One-term introduction to astronomy. The nature of science; sun, planets, and moons; origin of the solar system; nature and evolution of stars; exploding stars; stellar remnants, including white dwarfs, neutron stars, and black holes; molecules in space; galaxies and quasars; past and future of the universe; and life in the universe. Lectures and observation; a field trip to Parkland Staerkel Planetarium may be required, nominal charge. Credit is not given to students with credit in ASTR 121 or ASTR 122; not open to students with credit in PHYS 102, or equivalent. Students with credit in PHYS 102 are encouraged to take ASTR 121 or ASTR 122.

This course satisfies the General Education Criteria for a Physical Sciences course.

Students interested in ASTR 100 should also consider ASTR 121 or ASTR 122 which cover the same materials and topics but in two semesters instead of one. ASTR 121 and ASTR 122 include two lectures each week and one weekly small discussion meeting for more individual attention. ASTR 121 and ASTR 122 are independent offerings and can be taken in any order. While ASTR 100, ASTR 121 and ASTR 122 are for non-science majors, problem solving with basic algebra is required. Science and astronomy majors should take ASTR 210.

CRN	Type	Section	Time	Days	Location	Instructor
31278	lecture	1	11:00 AM - 11:50 AM	MWF	room 100 Gregory Hall	Thompson, L
31278: Physical Sciences course.						
31279	lecture	2	12:00 PM - 12:50 PM	MWF	room 100 Gregory Hall	Thompson, L
31279: Physical Sciences course.						
41827	lecture	3	02:00 PM - 02:50 PM	MWF	room 112 Chemistry Annex	Bain, S; Chakraborty, A
41827: Physical Sciences course.						
41827: This section is for incoming Freshman only.						

121 ***The Solar System*** Credit: 3 hours.

(ASTR 121) Introductory survey of the universe; structure and motions of the earth and moon; planetary motions; physical nature of the planets; comets and meteors; origin and evolution of the solar system. Emphasis will be placed on problem-solving and scientific methods. Two lectures and one discussion each week, and observing sessions during the term. Intended for non-science majors; science and Astronomy majors should take ASTR 210. Credit not given to students with credit in ASTR 100 or ASTR 210 or GEOL 116; or in PHYS 212 or higher-level Physics course. Students with credit in PHYS 211 are encouraged to take ASTR 210. Prerequisite: Credit or concurrent enrollment in a Quantitative Reasoning I course.

This course satisfies the General Education Criteria for a Physical Sciences, and Quant Reasoning II course.

ASTR 121 and ASTR 122 cover the same topics as ASTR 100, but the material and topics are covered in much more depth over two semesters instead of one. ASTR 121 and ASTR 122 are independent offerings and can be taken in any order. While ASTR 121 and ASTR 122 are for non-science majors, problems solving with basic algebra is required. Science and astronomy majors should take ASTR 210. Students must register for one discussion and one lecture section.

CRN	Type	Section	Time	Days	Location	Instructor
37115	discussion-	AD1	10:00 AM - 10:50	R	room 1128	Seale, J

	recitation		AM		Foreign Languages Bldg	
37115: Physical Sciences, and Quant Reasoning II course.						
37117	discussion-recitation	AD2	10:00 AM - 10:50 AM	R	room 312 David Kinley Hall	Song, J
37117: Physical Sciences, and Quant Reasoning II course.						
37118	discussion-recitation	AD3	10:00 AM - 10:50 AM	R	room 322 David Kinley Hall	Indriolo, N
37118: Physical Sciences, and Quant Reasoning II course.						
37120	discussion-recitation	AD4	11:00 AM - 11:50 AM	R	room 1030 Foreign Languages Bldg	Seale, J
37120: Physical Sciences, and Quant Reasoning II course.						
37122	discussion-recitation	AD5	11:00 AM - 11:50 AM	R	room 307 David Kinley Hall	Song, J
37122: Physical Sciences, and Quant Reasoning II course.						
37124	discussion-recitation	AD6	11:00 AM - 11:50 AM	R	room 322 David Kinley Hall	Indriolo, N
37124: Physical Sciences, and Quant Reasoning II course.						
36991	discussion-recitation	AD7	11:00 AM - 11:50 AM	R	room 1038 Foreign Languages Bldg	Sutton, E
36991: Discovery, Physical Sciences, and Quant Reasoning II course.First Year Discovery Program Course. Registration restricted to freshmen. Students should enroll in only one Discovery course. Students who enroll in more than one Discovery course may be dropped from the additional Discovery Courses. For course descriptions, see the Discovery Program booklet.						
36993	discussion-recitation	AD8	12:00 PM - 12:50 PM	R	room 113 Davenport Hall	Seale, J
36993: Physical Sciences, and Quant Reasoning II course.						
36996	discussion-recitation	AD9	12:00 PM - 12:50 PM	R	room 310 David Kinley Hall	Song, J
36996: Physical Sciences, and Quant Reasoning II course.						
39751	discussion-recitation	ADA	12:00 PM - 12:50 PM	R	room 322 David Kinley Hall	Indriolo, N
39751: Physical Sciences, and Quant Reasoning II course.						
37107	lecture	AL1	01:30 PM - 02:20 PM	TR	room 180 Bevier Hall	Sutton, E
37107: Physical Sciences, and Quant Reasoning II course.						

122 ***Stars and Galaxies*** Credit: 3 hours.

(ASTR 122) Introduction to astrophysical objects and phenomena beyond the solar system, and the governing basic physical principles; galaxies, quasars, and structure of the universe; cosmology; the Milky Way; the interstellar medium and the birth of stars; distances, motions, radiation, structure, evolution, and death of stars, including neutron stars and black holes. Emphasis will be placed on problem-solving and scientific methods. Two lectures and one discussion each week, and observing sessions during the term. Intended for non-science majors; science and Astronomy majors should take ASTR 210. Credit not given to students with credit in ASTR 100 or ASTR 210, or in PHYS 212 or higher-level physics course. Students with credit in PHYS 211 are encouraged to take ASTR 210. Prerequisite: Credit or concurrent enrollment in a Quantitative Reasoning I course.

This course satisfies the General Education Criteria for a Physical Sciences, and Quant Reasoning II course.

ASTR 121 and ASTR 122 cover the same topics as ASTR 100, but the material and topics are covered in much more depth over two semesters instead of one. ASTR 121 and ASTR 122 are independent offerings and can be taken in any order. While ASTR 121 and ASTR 122 are for non-science majors, problems solving with basic algebra is required. Science and astronomy majors should take ASTR 210.

CRN	Type	Section	Time	Days	Location	Instructor
39753	discussion-recitation	AD1	10:00 AM - 10:50 AM	R	room 144 Armory	Yang, C
39753: Physical Sciences, and Quant Reasoning II course.						
39754	discussion-recitation	AD2	10:00 AM - 10:50 AM	R	room 122 David Kinley Hall	Bilikova, J
39754: Physical Sciences, and Quant Reasoning II course.						
39755	discussion-recitation	AD3	11:00 AM - 11:50 AM	R	room 144 Armory	Yang, C
39755: Physical Sciences, and Quant Reasoning II course.						
39756	discussion-recitation	AD4	11:00 AM - 11:50 AM	R	room 115 David Kinley Hall	Bilikova, J
39756: Physical Sciences, and Quant Reasoning II course.						
39757	discussion-recitation	AD5	11:00 AM - 11:50 AM	R	room 326 David Kinley Hall	Brunner, R
39757: Discovery, Physical Sciences, and Quant Reasoning II course.First Year Discovery Program Course. Registration restricted to freshmen. Students should enroll in only one Discovery course. Students who enroll in more than one Discovery course may be dropped from the additional Discovery Courses. For course descriptions, see the Discovery Program booklet.						
39748	discussion-recitation	AD6	12:00 PM - 12:50 PM	R	room 144 Armory	Yang, C
39748: Physical Sciences, and Quant Reasoning II course.						
39749	discussion-recitation	AD7	12:00 PM - 12:50 PM	R	room 111 David Kinley Hall	Bilikova, J
39749: Physical Sciences, and Quant Reasoning II course.						
39752	lecture	AL1	02:00 PM - 02:50 PM	TR	room 112 Chemistry Annex	Brunner, R
39752: Physical Sciences, and Quant Reasoning II course.						

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

CRN	Type	Section	Time	Days	Location	Instructor
10395	independent study		ARRANGED			
10395: Instructor Approval Required						
31281	conference	DS1	06:30 PM - 08:30 PM	W	room 134 Astronomy Bldg	Chu, Y
31281: 1 hoursDiscovery course.Meets first 8 weeks. (1hour credit) S/U graded credit. Designed to let first year students majoring or interested in Astronomy meet faculty in a small group setting in the Astronomy Department or at a faculty member's home. Students should assemble on Wednesdays at 6:25 p.m. in 134 Astronomy building. When meetings are at a faculty member's home, transportation will be provided between the Astronomy building and the home. Students may not register for both DS1 and DS2 when both sections are being offered. First Year Discovery Program Course. Registration restricted to freshman. Students should enroll in only one Discovery course. Students who enroll in more than one Discovery course may be dropped from the additional Discovery courses. For course descriptions, see the Discovery Program booklet.Meets 24-Aug-05 - 14-Oct-05.						
31282	conference	RI	04:00 PM - 04:50 PM	W	room 134 Astronomy Bldg	Chu, Y
31282: 1 hoursTOPIC: Research Introduction for undergraduates. This course is for first and second year undergraduates interested in research work of faculty in Astronomy and Astrophysics. Students will meet with a different faculty member for one hour each week informally to find out what the faculty member is doing in Astronomical or Astrophysical research. ASTR 199 Section RI is primarily meant for students who are interested in pursuing independent study or a research project with a faculty member. Astronomy majors and physics majors interested in Astronomy and Astrophysics are strongly encouraged to take this course. Doing independent study and research projects with a faculty member are important and effective ways for students to learn in a realistic context. They provide good preparation for summer research assistantships. S/U grading only						

210 ***General Astronomy*** Credit: 3 hours.
(ASTR 210) Survey of modern astronomy for students with background in physics. Topics include: the solar system; nature and evolution of stars; white dwarfs, neutron stars, and black holes; galaxies, quasars and dark matter; large scale structure of the universe; the Big Bang; and Inflation. Emphasis will be on the physical principles underlying the astronomical phenomena. Credit is not given to students who have credit in ASTR 100 or in ASTR 121 and ASTR 122. Prerequisite: Credit or concurrent registration in PHYS 212.

This course satisfies the General Education Criteria for a Physical Sciences course.

CRN	Type	Section	Time	Days	Location	Instructor
30268	lecture	1	03:00 PM - 03:50 PM	MWF	room 134 Astronomy Bldg	Webbink, R
30268: Physical Sciences course.						

230 ***Extraterrestrial Life*** Credit: 3 hours.
(ASTR 230) Scientific discussion of the search for extraterrestrial life. Topics include: cosmic evolution (protons to heavy elements to molecules); terrestrial evolution (chemical, biological, and cultural); high technology searches for extraterrestrial life in the solar system (Mars, Venus, outer planets); and beyond the solar system (Drake equation and current SETI projects). Prerequisite: ASTR 100, ASTR 121, ASTR 122, or ASTR 210; or consent of instructor.

This course satisfies the General Education Criteria for a Physical Sciences course.

CRN	Type	Section	Time	Days	Location	Instructor
40327	lecture	1	02:00 PM - 02:50 PM	MWF	room 134 Astronomy Bldg	Looney, L
40327: Physical Sciences course.						

390 ***Individual Study*** Credit: 1 to 4 hours.
(ASTR 290) Individual study at an advanced undergraduate level. Prerequisite: Consent of advisor and of staff member who supervises the work.

CRN	Type	Section	Time	Days	Location	Instructor
10396	independent study		ARRANGED			
10396: Instructor Approval Required						

401 ***Scientific Writing for Astro*** Credit: 1 hours.
(ASTR 301) Development of journal-style writing skills. Papers written in accordance with the Astrophysical Journal Manual of Style on topics approved by the instructor. Emphasis on developing adequate and critical coverage of the topic, brevity compatible with clarity, and effective presentation. Proper referencing, footnotes, and bibliography are covered. 1 undergraduate hour. Prerequisite: Concurrent enrollment in a designated 400-level astronomy course.

This course satisfies the General Education Criteria for a Advanced Composition course.

CRN	Type	Section	Time	Days	Location	Instructor
30271	conference	C1	ARRANGED			Fields, B
30271: Advanced Composition course.						
30271: Composition II course meeting with ASTR 406.						

406 ***Galaxies and the Universe*** Credit: 3 hours.
(ASTR 306) Nature of the Milky Way galaxy: stellar statistics and distributions, stellar populations, spiral structure, the nucleus and halo. Nature of ordinary galaxies; those in our Local Group, structure of voids and superclusters. Nature of peculiar objects: Seyfert galaxies, starburst galaxies, and quasars. Elementary aspects of physical cosmology Prerequisite: ASTR 100 or ASTR 121 and ASTR 122 or ASTR 210; and PHYS 211 and PHYS 212

CRN	Type	Section	Time	Days	Location	Instructor
43268	lecture	100	01:00 PM - 01:50 PM	MWF	room 134 Astronomy Bldg	Fields, B
43268: 3 hours						

502 ***Theory Diffuse Matter Dynamics*** Credit: 4 hours.
(ASTR 402) Astrophysical magnetohydrodynamics (MHD) is developed and applied to the interstellar medium; formation, equilibrium and collapse of interstellar clouds; star formation; shock waves and ionization fronts; dynamics of stellar systems and spiral structure; Newtonian cosmology and galaxy formation in the early universe; cosmic electrodynamics. Prerequisite: PHYS 436, PHYS 427, and PHYS 486; or consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
39759	lecture	1	01:00 PM - 02:20 PM	TR	room 134 Astronomy Bldg	Gammie, C

515 ***General Relativity I*** Credit: 4 hours.
(ASTR 425) Same as PHYS 515. See PHYS 515.

CRN	Type	Section	Time	Days	Location	Instructor
34932	lecture	A	01:00 PM - 02:20 PM	MW	room 144 Loomis Laboratory	Shapiro, S

590 ***Individual Study*** Credit: 2 to 8 hours.
(ASTR 490) Individual study or nonthesis research. May be repeated to a maximum of 16 hours. Prerequisite: Consent of adviser and of staff member who supervises the work.

CRN	Type	Section	Time	Days	Location	Instructor
10399	independent study		ARRANGED			
10399: Instructor Approval Required						

596 ***Seminar in Special Topics*** Credit: 0 to 16 hours.
(ASTR 496) May be repeated. Approved for both letter and S/U grading. Prerequisite: Consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
43283	lecture	1	10:30 AM - 11:50 AM	MW	room 134 Astronomy Bldg	Chu, Y
43283: 4 hoursINFRARED ASTRONOMYInfrared Astronomy Recent advances in infrared observing facilities, such as the Spitzer Space Telescope, make it possible to study astronomical objects that are heavily obscured by dust or are highly redshifted. The following topics will be included in the course: IR emission from astronomical objects, detectors and observational techniques, and IR sciences (e.g. star formation, galaxy distribution and evolution). The format will be 1/3 in lectures, 1/3 in students' presentations, and 1/3 in hands-on analysis of Spitzer Space Telescope data. The grading will be based on a presentation and a final paper. For graduate students; undergraduates with consent of instructor. Approved for letter grade.						

599 ***Thesis Research*** Credit: 0 to 16 hours.
(ASTR 499) Approved for S/U grading only.

CRN	Type	Section	Time	Days	Location	Instructor
10387	independent study		ARRANGED			
10387: Instructor Approval Required						