Course Schedule - Fall 2006

Astronomy

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

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
41827	lecture	1	10:00 AM - 10:50 AM	MWF	room 112 Chemistry Annex	Kaler, J
41827: Physical Sciences course.						
41827: This section is for incoming Freshman only.						
31278	lecture	2	11:00 AM - 11:50 AM	MWF	room 100 Gregory Hall	Wilhite, B
31278: Physical Sciences course.						
31279	lecture	3	12:00 PM - 12:50 PM	MWF	room 100 Gregory Hall	Hail, T
31279: Physical Sciences course.						

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

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 136 Burrill	Dunne, B; Yang, H

	recitation		AM		Hall	
37115: Physical Sciences, and Quant Reasoning II course.						
37117	discussion-recitation	AD2	10:00 AM - 10:50 AM	R	room 221 Gregory Hall	Dunne, B; Lundgren, B
37117: Physical Sciences, and Quant Reasoning II course.						
37118	discussion-recitation	AD3	11:00 AM - 11:50 AM	R	room 136 Burrill Hall	Dunne, B; Yang, H
37118: Physical Sciences, and Quant Reasoning II course.						
37120	discussion-recitation	AD4	11:00 AM - 11:50 AM	R	room 221 Gregory Hall	Dunne, B; Lundgren, B
37120: Physical Sciences, and Quant Reasoning II course.						
37122	discussion-recitation	AD5	12:00 PM - 12:50 PM	R	room 136 Burrill Hall	Dunne, B; Yang, H
37122: Physical Sciences, and Quant Reasoning II course.						
37124	discussion-recitation	AD6	12:00 PM - 12:50 PM	R	room 221 Gregory Hall	Dunne, B; Lundgren, B
37124: Physical Sciences, and Quant Reasoning II course.						
36991	discussion-recitation	AD7	11:00 AM - 11:50 AM	R	room 311 Davenport Hall	Dunne, B
36991: Physical Sciences, and Quant Reasoning II course.						
37107	lecture	AL1	01:30 PM - 02:20 PM	TR	room 213 Gregory Hall	Dunne, B
37107: Physical Sciences, and Quant Reasoning II course.						
47234	lecture	CH	11:00 AM - 11:50 AM	MWF	room 212 1205 W Oregon	Kaler, J
47234: Camp Honors/Chanc Schol, Physical Sciences, and Quant Reasoning II course.Section CH for Chancellor's Scholars only; others may only enroll with consent of instructor and the Campus Honors Program.						

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

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 331 Gregory Hall	Thompson, L; Seale, J
39753: Physical Sciences, and Quant Reasoning II course.						
39754	discussion-recitation	AD2	10:00 AM - 10:50 AM	R	room 132 Davenport Hall	Thompson, L; Dolence, J
39754: Physical Sciences, and Quant Reasoning II course.						
39755	discussion-recitation	AD3	11:00 AM - 11:50 AM	R	room 331 Gregory Hall	Thompson, L; Seale, J
39755: Physical Sciences, and Quant Reasoning II course.						
39756	discussion-recitation	AD4	11:00 AM - 11:50 AM	R	room 132 Davenport Hall	Thompson, L; Dolence, J
39756: Physical Sciences, and Quant Reasoning II course.						
39757	discussion-recitation	AD5	11:00 AM - 11:50 AM	R	room 398 Lincoln Hall	Thompson, L
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 331 Gregory Hall	Thompson, L; Seale, J
39748: Physical Sciences, and Quant Reasoning II course.						
39749	discussion-recitation	AD7	12:00 PM - 12:50 PM	R	room 132 Davenport Hall	Thompson, L; Dolence, J
39749: Physical Sciences, and Quant Reasoning II course.						
39752	lecture	AL1	02:00 PM - 02:50 PM	TR	room 112 Chemistry Annex	Thompson, L
39752: Physical Sciences, and Quant Reasoning II course.						

199 ***Undergraduate Open Seminar*** Credit: 1 to 5 hours.
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. 1 hour 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. Students will meet in room 134 of the Astronomy building. First Year Discovery Program Course. Registration restructed 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 23-Aug-06 - 13-Oct-06.						
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.

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 101 Transportation Bldg	Wandelt, B
30268: Physical Sciences course.						

230 ***Extraterrestrial Life*** Credit: 3 hours.

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	01:00 PM - 02:20 PM	TR	room 134 Astronomy Bldg	Looney, L
40327: Physical Sciences course.						

350 ***Introduction to Cosmology*** Credit: 3 hours.

Descriptive course on modern cosmological theories. Topics include aspects of special and general relativity; curved spacetime; the Big Bang; inflation; primordial element synthesis; the cosmic microwave background; the formation of galaxies and large scale structure. Prerequisite: ASTR 100, or ASTR 121, or 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
30269	lecture	1	02:00 PM - 02:50 PM	MWF	room 134 Astronomy Bldg	Fields, B
30269: Physical Sciences course.						

390 ***Individual Study*** Credit: 1 to 4 hours.
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.
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			Webbink, R
30271: Advanced Composition course.						
30271: Composition II course meeting with ASTR 404.						

404 ***Stellar Astrophysics*** Credit: 3 hours.
Introduction to astrophysical problems, with emphasis on underlying physical principles; includes the nature of stars, equations of state, stellar energy generation, stellar structure and evolution, astrophysical neutrinos, binary stars, white dwarfs, neutron stars and pulsars, and novae and supernovae. 3 undergraduate hours. Graduate students in Astronomy will not receive credit in ASTR 404. Prerequisite: PHYS 213 or PHYS 214; or consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
39758	lecture	1	01:00 PM - 01:50 PM	MWF	room 134 Astronomy Bldg	Webbink, R

496 ***Seminar in Astronomy*** Credit: 1 to 4 hours.
Lectures on topics of current interest in astronomy and astrophysics; for advanced undergraduates and graduates. See Class Schedule for current topics. May be repeated. Approved for both letter and S/U grading. Prerequisite: Consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
46702	lecture	EGA	10:00 AM - 11:20 AM	MW	room 134 Astronomy Bldg	Brunner, R
46702: 4 hoursASTR 496 EGA: Extragalactic Astronomy Advanced undergraduates with an interest in astronomy and cosmology can take this course under ASTR 496. Cross-listed with ASTR 596. This course provides a survey of the different constituents of our Universe, including galaxies, quasars, galaxy clusters, and intergalactic gas. Particular emphasis will be placed on making and interpreting physical measurements and how they relate to our understanding of the formation of structure in our Universe. Specifically, this course will discuss the different types of galaxies, active galaxies, galaxy clustering, intergalactic gas, gravitational lensing, structure formation, and the geometry of the Universe.						

503 ***Observational Astronomy*** Credit: 4 hours.
Techniques and basic results of observational astronomy; gamma ray, x-ray, ultraviolet, visible, infrared, and radio astronomy; photometry, imaging, spectroscopy, and polarimetry; gravitational waves; cosmic rays; neutrinos; positional astronomy; noise; statistics; data analysis; optics. Prerequisite: Consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
46701	lecture	1	03:00 PM - 03:50 PM	MWF	room 134 Astronomy Bldg	Sutton, E

590 ***Individual Study*** Credit: 2 to 8 hours.
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.
May be repeated. Approved for both letter and S/U grading. Prerequisite: Consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
46684	lecture	EGA	10:00 AM - 11:20 AM	MW	room 134 Astronomy Bldg	Brunner, R

46684: 4 hoursASTR 596: EGA - Extragalactic Astronomy This course provides a survey of the different constituents of our Universe, including galaxies, quasars, galaxy clusters, and intergalactic gas. Particular emphasis will be placed on making and interpreting physical measurements and how they relate to our understanding of the formation of structure in our Universe. Specifically, this course will discuss the different types of galaxies, active galaxies, galaxy clustering, intergalactic gas, gravitational lensing, structure formation, and the geometry of the Universe. Advanced undergraduates with an interest in astronomy and cosmology can take this course under ASTR 496.

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

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