Course Schedule - Fall 2005

Atmospheric Sciences

100 ***Introduction to Meteorology*** Credit: 3 hours.

(ATMOS 100) Introduces the student to the basic concepts and principles of atmospheric science in a descriptive format; emphasizes the physics responsible for changes in the weather; uses current weather information to illustrate textbook material.

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

Students must register for one discussion and one lecture section.

CRN	Type	Section	Time	Days	Location	Instructor
37008	discussion-recitation	AD1	09:00 AM - 09:50 AM	F	room 390 Lincoln Hall	Roussy, K; Twine, T
37008: Physical Sciences, and Quant Reasoning II course.						
37010	discussion-recitation	AD2	10:00 AM - 10:50 AM	F	room 390 Lincoln Hall	Roussy, K; Twine, T
37010: Physical Sciences, and Quant Reasoning II course.						
37013	discussion-recitation	AD3	12:00 PM - 12:50 PM	R	room 390 Lincoln Hall	Guarente, B; Twine, T
37013: Physical Sciences, and Quant Reasoning II course.						
37018	discussion-recitation	AD4	01:00 PM - 01:50 PM	F	room 390 Lincoln Hall	Twine, T; Kurz, D
37018: Physical Sciences, and Quant Reasoning II course.						
37086	discussion-recitation	AD5	11:00 AM - 11:50 AM	R	room 390 Lincoln Hall	Guarente, B; Twine, T
37086: Physical Sciences, and Quant Reasoning II course.						
37004	lecture	AL1	09:00 AM - 09:50 AM	MW	room 112 Chemistry Annex	Twine, T
37004: Physical Sciences, and Quant Reasoning II course.						
37089	discussion-recitation	BD1	11:00 AM - 11:50 AM	F	room 390 Lincoln Hall	Charlevoix-Romine, D; Guarente, B
37089: Physical Sciences, and Quant Reasoning II course.						
37090	discussion-recitation	BD2	12:00 PM - 12:50 PM	F	room 390 Lincoln Hall	Charlevoix-Romine, D; Roussy, K
37090: Physical Sciences, and Quant Reasoning II course.						
37092	discussion-recitation	BD3	01:00 PM - 01:50 PM	R	room 390 Lincoln Hall	Charlevoix-Romine, D; Kurz, D
37092: Physical Sciences, and Quant Reasoning II course.						
37095	discussion-	BD4	02:00 PM - 02:50	R	room 390 Lincoln	Charlevoix-Romine,

	recitation		PM		Hall	D; Kurz, D
37095: Physical Sciences, and Quant Reasoning II course.						
37097	discussion-recitation	BD5	10:00 AM - 10:50 AM	R	room 390 Lincoln Hall	Guarente, B
37097: Physical Sciences, and Quant Reasoning II course.						
37006	lecture	BL1	12:00 PM - 12:50 PM	MW	room 112 Chemistry Annex	Charlevoix-Romine, D
37006: Physical Sciences, and Quant Reasoning II course.						

120 ***Severe and Hazardous Weather*** Credit: 3 hours.
(ATMOS 120) Most extreme manifestations of weather and climate are analyzed in terms of their physical basis and their historical, economic and human consequences. Emphasis is placed on the interplay between technological advances, the evolution of meteorology as a science, and the impacts of extreme weather (winter storms, floods, severe thunderstorms, hurricanes, El Nino). Technological advances include satellites, weather radars and profilers, and computer models used for weather prediction.

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

CRN	Type	Section	Time	Days	Location	Instructor
31290	lecture	A	09:00 AM - 10:15 AM	TR	room 134 Temple Hoyne Buell Hall	Jackman, S; Sanders, M
31290: Physical Sciences course.						
31291	lecture	B	10:30 AM - 11:45 AM	TR	room 112 Chemistry Annex	Schneider, E; Charlevoix-Romine, D
31291: Physical Sciences course.						
31292	lecture	C	12:00 PM - 01:15 PM	TR	room 213 Gregory Hall	Jackman, S; Sanders, M
31292: Physical Sciences course.						
41130	lecture	D	02:00 PM - 03:15 PM	TR	room 1320 Digital Computer Laboratory	Walsh, J; Pounder, D
41130: Physical Sciences course.						

199 ***Undergraduate Open Seminar*** Credit: 1 to 5 hours.
(ATMOS 199) Special topics each term. May be repeated.

CRN	Type	Section	Time	Days	Location	Instructor
43266	lecture-discussion	A	ARRANGED			

30257	lecture-discussion	DC	01:00 PM - 01:50 PM	MWF	room 106B3 Engineering Hall	Charlevoix-Romine, D
30257: 3 hoursCamp Honors/Chanc Schol course.Topic: Societal Impacts of Weather & Climate. For Chancellor's Scholars; others may enroll with consent of instructor and director of the Campus Honors Program.						

300 ***Weather Processes*** Credit: 3 hours.
(ATMOS 222) Introduction to the mean state of the atmosphere, the fundamental physics of weather processes, and the mechanisms producing daily weather changes, both qualitative and quantitative in nature. Prerequisite: MATH 242 or consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
30260	lecture-discussion	1	01:30 PM - 02:45 PM	TR	room 109 Atmospheric Sciences Bldg	Robinson, W

401 ***Atmospheric Physics*** Credit: 4 hours.
(ATMOS 301) Quantitative introduction to atmospheric thermodynamics, cloud physics, and radiative transfer; topics include the structure, stability, and energy balance of the atmosphere, and the formation of clouds and precipitation. Prerequisite: MATH 242; consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
30263	lecture-discussion	A	10:00 AM - 10:50 AM	MWF	room 109 Atmospheric Sciences Bldg	McFarquhar, G

402 ***Atmospheric Dynamics*** Credit: 4 hours.
(ATMOS 302) Introduction to those elements of fluid dynamics and thermodynamics essential to understanding the large- and small-scale motions of the neutral atmosphere. Same as PHYS 429. Prerequisite: MATH 380; consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
37113	lecture-discussion	A	10:30 AM - 11:45 AM	TR	room 109 Atmospheric Sciences Bldg	Mak, M

421 ***Earth Systems Modeling*** Credit: 4 hours.
(ATMOS 381) Introduction to systems modeling with applications to the earth and environmental sciences. Basic systems concepts and systems thinking in the contexts of hydrological, climatic, geochemical, and other environmentally relevant systems. Students identify key processes and relationships in systems, represent these elements quantitatively in models, test the models, use them to predict system behavior, and assess the validity of the predictions. No special mathematical or computing background is required. Same as GEOG 421, and GEOL 481. Prerequisite: Junior, senior, or graduate standing in a natural science, geography, natural resources and environmental studies, or engineering.

CRN	Type	Section	Time	Days	Location	Instructor
37116	lecture-discussion	A	05:00 PM - 08:00 PM	W	room 22 ACES Lib, Info and Alum Ctr	Robinson, W; Hurst, S; Hannon, B; Gertner, G

490 ***Individual Study*** Credit: 1 to 4 hours.
(ATMOS 390) Individual study or reading at an advanced undergraduate level in a subject not covered in normal course offerings. May be repeated to a maximum of 8 hours. May not be used to satisfy requirements for an M.S. or Ph.D. degree in Atmospheric Sciences. Prerequisite: Consent of advisor and of staff member supervising work.

CRN	Type	Section	Time	Days	Location	Instructor
10391	independent study		ARRANGED			
10391: Instructor Approval Required						

491 ***Topics in Atmospheric Sciences*** Credit: 2 to 4 hours.
(ATMOS 397) Special topics in atmospheric sciences at an advanced undergraduate level. May be repeated as topic varies to a maximum of 12 hours per term. Prerequisite: Advanced undergraduate standing and consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
39849	lecture-discussion	I	02:00 PM - 02:50 PM	MWF	room 109 Atmospheric Sciences Bldg	Schlesinger, M
39849: 3 hours						

501 ***Mesoscale Meteorology*** Credit: 4 hours.
(ATMOS 402) Basic concepts and ideas on atmospheric processes that occur on scales of motions from a few kilometers to a few hundred kilometers, a scale loosely classified by meteorologists as "mesoscale". After an introductory discussion of mesoscale classifications and attendant forecast problems, the course will introduce various mesoscale phenomena, internally generated circulations, externally forced circulations, and mesoscale instabilities. Covers all three fundamental aspects of mesoscale meteorology: observations, theory and modeling, with particular emphasis on the dynamics of precipitating mesoscale systems Prerequisite: ATMS 401 and ATMS 402.

CRN	Type	Section	Time	Days	Location	Instructor
30266	lecture-discussion	1	01:00 PM - 01:50 PM	MWF	room 109 Atmospheric Sciences Bldg	Rauber, R

502 ***Numerical Fluid Dynamics*** Credit: 4 hours.
(ATMOS 405) Intended to give the student practical numerical techniques for solving those linear and nonlinear

differential equations which appear frequently as initial and boundary value problems in hydrodynamics and dynamic meteorology. Same as CS 505, and CSE 566. Prerequisite: MATH 380 or consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
37123	lecture-discussion	A	09:00 AM - 09:50 AM	MWF	room 109 Atmospheric Sciences Bldg	Jewett, B

535 ***Aerosol Sampling and Analysis*** Credit: 4 hours.
(ATMOS 449) Same as CEE 545, ENVS 545, and ME 516. See CEE 545.

CRN	Type	Section	Time	Days	Location	Instructor
36028	laboratory-discussion	TW	03:00 PM - 04:50 PM	TR	room B222 Newmark Civil Engineering Bldg	Bond, T

571 ***Professional Development*** Credit: 1 hours.
(ATMOS 464) Aimed at professional development in the atmospheric sciences so that students recognize the importance of breath of knowledge, effective oral and written scientific communication, and other skills they will need as professionals. May be repeated to a maximum of 2 hours. Approved for S/U grading only. Prerequisite: Graduate student in Atmospheric Sciences or consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
30247	lecture	A	03:00 PM - 04:15 PM	M	room 109 Atmospheric Sciences Bldg	Di Girolamo, L

590 ***Individual Study*** Credit: 2 to 8 hours.
(ATMOS 490) Individual study or reading in a subject not covered in normal course offerings. Prerequisite: Consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
10393	independent study		ARRANGED			
10393: Instructor Approval Required						

591 ***Atmospheric Sciences Seminar*** Credit: 0 to 4 hours.
(ATMOS 491) Seminar on topics of current interest. Approved for S/U grading only. Prerequisite: Consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
30252	conference	A	03:30 PM - 04:30 PM	W	room 109 Atmospheric Sciences Bldg	Jain, A

596 ***Non-Thesis Research*** Credit: 4 hours.
(ATMOS 496) Non-thesis research in the Atmospheric Sciences. Restricted to students in the non-thesis option. Approved for S/U grading only.

CRN	Type	Section	Time	Days	Location	Instructor
46240	conference	RMR	08:00 AM - 09:20 AM	TR		Rauber, R

597 ***Special Topics in Atmos Sci*** Credit: 0 to 4 hours.
(ATMOS 497) Lecture course in topics of current interest; subjects such as tropical meteorology, aerosol physics, and geophysical fluid dynamics will be covered in term offerings on a regular basis. Prerequisite: Consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
43232	lecture-discussion	N	11:00 AM - 11:50 AM	MWF	room 109 Atmospheric Sciences Bldg	Snyder, P
43232: Ecological Climatology						

599 ***Thesis Research*** Credit: 0 to 16 hours.
(ATMOS 499) Section A: For master's degree candidates; Section B: For doctoral degree candidates. Approved for S/U grading only. Prerequisite: Consent of instructor.

This course is for students seeking Master's and Doctoral degrees.

CRN	Type	Section	Time	Days	Location	Instructor
10394	independent study		ARRANGED			
10394: Instructor Approval Required						