

Course Schedule - Fall 2006

Atmospheric Sciences

100 *Introduction to Meteorology* Credit: 3 hours.

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	Charlevoix-Romine, D; Smith, A; Kaufeld, W
37008: Physical Sciences, and Quant Reasoning II course.						
37010	discussion-recitation	AD2	10:00 AM - 10:50 AM	F	room 390 Lincoln Hall	Charlevoix-Romine, D; Smith, A; Kaufeld, W
37010: Physical Sciences, and Quant Reasoning II course.						
37013	discussion-recitation	AD3	12:00 PM - 12:50 PM	R	room 390 Lincoln Hall	Charlevoix-Romine, D; Smith, A; Zhang, G
37013: Physical Sciences, and Quant Reasoning II course.						
37018	discussion-recitation	AD4	01:00 PM - 01:50 PM	F	room 390 Lincoln Hall	Wilson, M; Smith, A
37018: Physical Sciences, and Quant Reasoning II course.						
37086	discussion-recitation	AD5	08:00 AM - 08:50 AM	R	room 390 Lincoln Hall	Charlevoix-Romine, D; Smith, A; Benny, M
37086: Physical Sciences, and Quant Reasoning II course.						
37004	lecture	AL1	09:00 AM - 09:50 AM	MW	room 112 Chemistry Annex	Charlevoix-Romine, D; Smith, A
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; Smith, A; Wisdom, A
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; Smith, A; Wisdom, A
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; Smith, A; Hampton, J
37092: Physical Sciences, and Quant Reasoning II course.						
37095	discussion-recitation	BD4	02:00 PM - 02:50 PM	R	room 390 Lincoln Hall	Charlevoix-Romine, D; Smith, A; Hampton, J
37095: Physical Sciences, and Quant Reasoning II course.						
37097	discussion-recitation	BD5	03:00 PM - 03:50 PM	R	room 390 Lincoln Hall	Charlevoix-Romine, D; Smith, A; Hampton, J
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; Smith, A
37006: Physical Sciences, and Quant Reasoning II course.						
41913	discussion-recitation	CD1	11:00 AM - 11:50 AM	R	room 390 Lincoln Hall	Smith, A; Zhang, G
41913: Physical Sciences, and Quant Reasoning II course.						
41914	discussion-recitation	CD2	10:00 AM - 10:50 AM	R	room 390 Lincoln Hall	Smith, A; Zhang, G
41914: Physical Sciences, and Quant Reasoning II course.						
41915	discussion-recitation	CD3	02:00 PM - 02:50 PM	F	room 390 Lincoln Hall	Wilson, M; Smith, A
41915: Physical Sciences, and Quant Reasoning II course.						
41916	discussion-recitation	CD4	03:00 PM - 03:50 PM	F	room 390 Lincoln Hall	Wilson, M; Smith, A
41916: Physical Sciences, and Quant Reasoning II course.						
41917	discussion-recitation	CD5	04:00 PM - 04:50 PM	R	room 390 Lincoln Hall	Smith, A; Benny, M
41917: Physical Sciences, and Quant Reasoning II course.						
41912	lecture	CL1	02:00 PM - 02:50 PM	MW	room 112 Chemistry Annex	Smith, A
41912: Physical Sciences, and Quant Reasoning II course.						
48004	discussion-recitation	DD1	08:00 AM - 08:50 AM	F	room 390 Lincoln Hall	Smith, A; Kaufeld, W
48004: Physical Sciences, and Quant Reasoning II course.						
48006	discussion-recitation	DD2	04:00 PM - 04:50 PM	F	room 390 Lincoln Hall	Smith, A; Wisdom, A
48006: Physical Sciences, and Quant Reasoning II course.						

48032	discussion-recitation	DD3	09:00 AM - 09:50 AM	R	room 390 Lincoln Hall	Smith, A; Benny, M
48032: Physical Sciences, and Quant Reasoning II course.						
47997	lecture	DL1	11:00 AM - 11:50 AM	MW	room 103 Transportation Bldg	Smith, A
47997: Physical Sciences, and Quant Reasoning II course.						

120 Severe and Hazardous Weather Credit: 3 hours.

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 112 Chemistry Annex	Snodgrass, E
31290: Physical Sciences course.						
31291	lecture	B	10:30 AM - 11:45 AM	TR	room 112 Chemistry Annex	Walsh, J
31291: Physical Sciences course.						
31292	lecture	C	12:00 PM - 01:15 PM	TR	room 213 Gregory Hall	Snodgrass, E
31292: Physical Sciences course.						
41130	lecture	D	02:00 PM - 03:15 PM	TR	room 1320 Digital Computer Laboratory	Snodgrass, E
41130: Physical Sciences course.						

199 Undergraduate Open Seminar Credit: 1 to 5 hours.

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.

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 241 (formerly MATH 243) or MATH 242; or consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
30260	lecture-discussion	1	09:00 AM - 09:50 AM	MWF	room 109 Atmospheric Sciences Bldg	Snyder, P

401 Atmospheric Physics Credit: 4 hours.

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 241 (formerly MATH 243) or MATH 242; or consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
30263	lecture-discussion	A	02:00 PM - 02:50 PM	MWF	room 109 Atmospheric Sciences Bldg	Schlesinger, M

402 Atmospheric Dynamics Credit: 4 hours.

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 241 (formerly MATH 243) or MATH 380; or consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
37113	lecture-discussion	A	10:30 AM - 11:50 AM	TR	room 109 Atmospheric Sciences Bldg	Mak, M

410 Radar Meteorology Credit: 4 hours.

Basic principles of radar and references to other ground based remote sensing systems, with emphasis on radar. Discusses principles of conventional and Doppler radar, data processing, and use of Doppler radar in meteorology. Emphasizes radar observations of meteorological phenomena, such as severe thunderstorms and wind shear. Students analyze data from national radar facilities. Prerequisite: ATMS 300, or consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
39848	lecture-discussion	A	10:00 AM - 10:50 AM	MWF	room 109 Atmospheric Sciences Bldg	Rauber, R

421 Earth Systems Modeling Credit: 4 hours.

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, GEOL 481, and NRES 422. 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 338 Davenport Hall	Hurst, S; Hannon, B; Gertner, G; Twine, T

490 Individual Study Credit: 1 to 4 hours.

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.

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	L	09:00 AM - 10:15 AM	TR	room 109 Atmospheric Sciences Bldg	Jain, A
39849: 3 hours						

502 Numerical Fluid Dynamics Credit: 4 hours.

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 241 (formerly MATH 243) or MATH 380; or consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
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37123	lecture-discussion	A	01:00 PM - 02:20 PM	TR		Jewett, B
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510 *Precipitation Physics* Credit: 4 hours.

Develops an understanding of precipitation processes through cloud observations, microphysics, dynamics, and comprehensive theoretical models; includes growth by condensation, coalescence, and riming; and studies ice crystals, hail, and weather modification. Prerequisite: ATMS 401.

CRN	Type	Section	Time	Days	Location	Instructor
46681	lecture-discussion	A	11:00 AM - 12:15 PM	MW	room 109 Atmospheric Sciences Bldg	McFarquhar, G

535 *Aerosol Sampling and Analysis* Credit: 4 hours.

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.

Aimed at professional development in the atmospheric sciences so that students recognize the importance of breadth 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 - 04:20 PM	M	room 100 Atmospheric Sciences Bldg	Rauber, R

590 *Individual Study* Credit: 2 to 8 hours.

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.

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	Snyder, P

596 Non-Thesis Research Credit: 4 hours.

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

599 Thesis Research Credit: 0 to 16 hours.

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						