

Course Schedule - Spring 2007

Atmospheric Sciences

100 *Introduction to Meteorology* Credit: 3 hours.

Introduces the student to the basic concepts and principles of meteorology via the interpretation of weather maps and charts; uses current weather information to illustrate key concepts, emphasizes the physical atmospheric processes responsible for weather. By the end of the class students will be able to interpret and make basic weather forecasts as well as be able to explain basic atmospheric phenomena.

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
30868	discussion-recitation	AD1	11:00 AM - 11:50 AM	R	room G13 Foreign Languages Bldg	Snyder, P; Wisdom, A
30868: Physical Sciences, and Quant Reasoning II course.						
30870	discussion-recitation	AD2	03:00 PM - 03:50 PM	F	room G13 Foreign Languages Bldg	Snyder, P; Hampton, J
30870: Physical Sciences, and Quant Reasoning II course.						
30874	discussion-recitation	AD4	12:00 PM - 12:50 PM	F	room G13 Foreign Languages Bldg	Snyder, P; Benny, M
30874: Physical Sciences, and Quant Reasoning II course.						
30876	discussion-recitation	AD5	01:00 PM - 01:50 PM	F	room G13 Foreign Languages Bldg	Snyder, P; Hampton, J
30876: Physical Sciences, and Quant Reasoning II course.						
30887	lecture	AL1	10:00 AM - 10:50 AM	MW	room 213 Gregory Hall	Snyder, P
30887: Physical Sciences, and Quant Reasoning II course.						
30878	discussion-recitation	BD1	08:00 AM - 08:50 AM	R	room G13 Foreign Languages Bldg	Charlevoix-Romine, D; Smith, A; Kaufeld, W
30878: Physical Sciences, and Quant Reasoning II course.						
30880	discussion-recitation	BD2	09:00 AM - 09:50 AM	R	room G13 Foreign Languages Bldg	Charlevoix-Romine, D; Smith, A; Kaufeld, W
30880: Physical Sciences, and Quant Reasoning II course.						
30883	discussion-recitation	BD4	09:00 AM - 09:50 AM	F	room G13 Foreign Languages Bldg	Charlevoix-Romine, D; Smith, A; Wisdom, A

30883: Physical Sciences, and Quant Reasoning II course.						
30885	discussion-recitation	BD5	02:00 PM - 02:50 PM	F	room G13 Foreign Languages Bldg	Charlevoix-Romine, D; Smith, A; Hampton, J
30885: Physical Sciences, and Quant Reasoning II course.						
47680	discussion-recitation	BD8	ARRANGED			
47680: Physical Sciences, and Quant Reasoning II course.						
39350	lecture	BL1	12:00 PM - 12:50 PM	MW	room 103 Talbot Laboratory	Charlevoix-Romine, D; Smith, A
39350: Physical Sciences, and Quant Reasoning II course.						
39353	discussion-recitation	CD2	10:00 AM - 10:50 AM	R	room G13 Foreign Languages Bldg	Charlevoix-Romine, D; Smith, A; Kaufeld, W
39353: Physical Sciences, and Quant Reasoning II course.						
39354	discussion-recitation	CD3	08:00 AM - 08:50 AM	F	room G13 Foreign Languages Bldg	Charlevoix-Romine, D; Smith, A; Wisdom, A
39354: Physical Sciences, and Quant Reasoning II course.						
39355	discussion-recitation	CD4	10:00 AM - 10:50 AM	F	room G13 Foreign Languages Bldg	Charlevoix-Romine, D; Smith, A; Benny, M
39355: Physical Sciences, and Quant Reasoning II course.						
39356	discussion-recitation	CD5	11:00 AM - 11:50 AM	F	room G13 Foreign Languages Bldg	Charlevoix-Romine, D; Smith, A; Benny, M
39356: Physical Sciences, and Quant Reasoning II course.						
39351	lecture	CL1	02:00 PM - 02:50 PM	MW	room 112 Chemistry Annex	Charlevoix-Romine, D; Smith, A
39351: 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
30891	lecture	B	11:30 AM - 12:45 PM	TR	room 314 Altgeld Hall	Snodgrass, E

30891: Physical Sciences course.						
39406	lecture	C	02:00 PM - 03:15 PM	TR	room 112 Chemistry Annex	Snodgrass, E
39406: Physical Sciences course.						
44060	lecture	D	10:00 AM - 11:15 AM	TR	room 112 Chemistry Annex	Snodgrass, E
44060: Physical Sciences course.						
44061	lecture	E	03:30 PM - 04:45 PM	MW	room 213 Gregory Hall	Rauber, R
44061: Physical Sciences course.						

140 ***Climate and Global Change*** Credit: 3 hours.

Introduces climate change and its interactions with the global environment; surveys the physical, chemical, biological and social factors contributing to global change; includes topics such as greenhouse warming, acid rain, ozone depletion, distinguishes anthropogenic influences and natural variability of the earth system; addresses societal impacts, mitigation strategies, policy options and other human responses to global change. Prerequisite: A 100-level course in atmospheric science or chemistry or consent of instructor.

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

CRN	Type	Section	Time	Days	Location	Instructor
30894	lecture-discussion	A	11:00 AM - 11:50 AM	MWF	room 106B8 Engineering Hall	Jain, A
30894: 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
10389	independent study		ARRANGED			
10389: Instructor Approval Required						

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
39357	lecture	A	01:00 PM - 01:50	MWF	room 109	Baidya Roy, S

			PM		Atmospheric Sciences Bldg	
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403 Weather Analysis & Forecasting Credit: 4 hours.

Course provides the student with the necessary skill to conceptualize the structure and dynamics of the atmosphere through interpretation and analysis of weather charts, time and cross sections, soundings, and forecast products. Students develop case studies of weather system structure, participate in discussions of weather processes as depicted by weather maps, and learn techniques of forecasting weather. The depiction of atmospheric kinematic and dynamic processes on weather charts is emphasized. Students learn conceptual models of the structure of mid-latitude cyclones and convective weather systems, including cyclogenesis, frontogenesis, the process of storm intensification, occlusion and frontolysis. Numerical weather prediction models and statistical forecasting techniques are reviewed and utilized. Prerequisite: ATMS 300, or consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
30895	lecture-discussion	A	12:30 PM - 02:45 PM	TR	room 109 Atmospheric Sciences Bldg	Nesbitt, S

411 Satellite Remote Sensing Credit: 4 hours.

Review of the basic techniques used in satellite remote sensing of the Earth's surface and atmosphere, as well as other planets in our solar system. Topics include radiative transfer, scattering and absorption processes, the Sun, mathematics of inversion, atmospheric properties and constituents, surface properties, precipitation, radiation budgets, image classification, satellite technology and orbital configurations. Laboratory work on radiative transfer modeling and satellite data analysis emphasized. All students participate in a team project that has novel and practical applications. Prerequisite: MATH 385 or MATH 386.

CRN	Type	Section	Time	Days	Location	Instructor
30897	lecture-discussion	A	10:00 AM - 10:50 AM	MWF	room 109 Atmospheric Sciences Bldg	Di Girolamo, L

420 Atmospheric Chemistry Credit: 3 hours.

Same as CEE 447, and ENVS 450. See CEE 447.

CRN	Type	Section	Time	Days	Location	Instructor
31725	lecture-discussion	B	09:00 AM - 10:20 AM	TR	room 109 Atmospheric Sciences Bldg	Wuebbles, D

425 Air Quality Modeling Credit: 3 hours.

Same as CEE 445. See CEE 445.

CRN	Type	Section	Time	Days	Location	Instructor
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31722	lecture-discussion	D	11:00 AM - 11:50 AM	MWF	room B218 Newmark Civil Engineering Bldg	Bond, T
31722: 3 hours						

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						

520 General Circulation Credit: 4 hours.

Reviews the observed general circulation of the earth's atmosphere; discusses the balance requirements of mass, momentum, and energy conservation; illustrates, by means of mathematical models and laboratory physical models, the important processes which determine the earth's and other planets' general circulation. Prerequisite: ATMS 401 or equivalent, and ATMS 402.

CRN	Type	Section	Time	Days	Location	Instructor
30899	lecture-discussion	A	09:00 AM - 09:50 AM	MWF	room 109 Atmospheric Sciences Bldg	Mak, M

530 Global Atmospheric Modeling Credit: 4 hours.

Course provides the student with training in the development, testing and application of physically based climate models. Physically based mathematical models of the earth's climate are used to study the causes of the ice ages which have occurred within a period of 100,000 years during the last two million years, the predictability of climate on the timescale of 1 to 3 months with particular attention to the worldwide El Nino phenomenon, and project the potential climatic consequences of the increasing concentrations of carbon dioxide and other greenhouse gases. Same as CSE 568. Prerequisite: ATMS 401 and ATMS 402, or consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
39360	lecture	A	02:00 PM - 02:50 PM	MWF	room 109 Atmospheric Sciences Bldg	Schlesinger, M

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
30900	conference	A	03:30 PM - 04:20 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
30901	conference	A	ARRANGED			

597 Special Topics in Atmos Sci Credit: 0 to 4 hours.

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. Approved for both letter and S/U grading. Prerequisite: Consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
30902	lecture-discussion	M	11:00 AM - 11:50 AM	MWF	room 109 Atmospheric Sciences Bldg	Twine, T
46286	lecture-discussion	P	03:30 PM - 04:50 PM	TR	room 109 Atmospheric Sciences Bldg	Gilmore, M

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
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10394	independent study		ARRANGED			
10394: Instructor Approval Required						