

# Class Schedule - Spring 2010

## 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. Same as GEOG 100.

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
48349	discussion-recitation	ADA	09:00 AM - 09:50 AM	R	room G8A Foreign Languages Bldg	Dooley, A
Physical Sciences, and Quant Reasoning II course.						
48350	discussion-recitation	ADB	10:00 AM - 10:50 AM	R	room G8A Foreign Languages Bldg	Dooley, A
Physical Sciences, and Quant Reasoning II course.						
48351	discussion-recitation	ADC	11:00 AM - 11:50 AM	R	room G8A Foreign Languages Bldg	Dooley, A
Physical Sciences, and Quant Reasoning II course.						
30874	discussion-recitation	ADD	12:00 PM - 12:50 PM	R	room G8A Foreign Languages Bldg	Dooley, A
Physical Sciences, and Quant Reasoning II course.						
30876	discussion-recitation	ADE	01:00 PM - 01:50 PM	R	room G8A Foreign Languages Bldg	Dooley, A
Physical Sciences, and Quant Reasoning II course.						
48342	discussion-recitation	ADF	02:00 PM - 02:50 PM	R	room G8A Foreign Languages Bldg	Dooley, A
Physical Sciences, and Quant Reasoning II course.						
48343	discussion-recitation	ADG	03:00 PM - 03:50 PM	R	room G8A Foreign Languages Bldg	Dooley, A

Physical Sciences, and Quant Reasoning II course.						
48346	discussion-recitation	ADH	04:00 PM - 04:50 PM	R	room G8A Foreign Languages Bldg	Dooley, A
Physical Sciences, and Quant Reasoning II course.						
48348	discussion-recitation	ADI	08:00 AM - 08:50 AM	F	room G8A Foreign Languages Bldg	Dooley, A
Physical Sciences, and Quant Reasoning II course.						
30878	discussion-recitation	ADJ	09:00 AM - 09:50 AM	F	room G8A Foreign Languages Bldg	Dooley, A
Physical Sciences, and Quant Reasoning II course.						
30880	discussion-recitation	ADK	10:00 AM - 10:50 AM	F	room G8A Foreign Languages Bldg	Dooley, A
Physical Sciences, and Quant Reasoning II course.						
30881	discussion-recitation	ADL	11:00 AM - 11:50 AM	F	room G8A Foreign Languages Bldg	Dooley, A
Physical Sciences, and Quant Reasoning II course.						
30883	discussion-recitation	ADM	12:00 PM - 12:50 PM	F	room G8A Foreign Languages Bldg	Dooley, A
Physical Sciences, and Quant Reasoning II course.						
30885	discussion-recitation	ADN	01:00 PM - 01:50 PM	F	room G8A Foreign Languages Bldg	Dooley, A
Physical Sciences, and Quant Reasoning II course.						
50878	discussion-recitation	ADO	02:00 PM - 02:50 PM	F	room G8A Foreign Languages Bldg	Dooley, A
Physical Sciences, and Quant Reasoning II course.						
30887	lecture	AL1	03:00 PM - 03:50 PM	MW	room 112 Gregory Hall	Dooley, A
Physical Sciences, and Quant Reasoning II course.						
39350	lecture	AL2	04:00 PM - 04:50 PM	MW	room 100 Gregory Hall	Dooley, A

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. Same as ESES 120.

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

CRN	Type	Section	Time	Days	Location	Instructor
39412	lecture	A	02:00 PM - 03:20 PM	TR	room 112 Chemistry Annex	Frame, J
30891	lecture	B	11:00 AM - 12:20 PM	TR	room 314 Altgeld Hall	Snodgrass, E
39406	lecture	C	12:30 PM - 01:50 PM	TR	room 314 Altgeld Hall	Snodgrass, E
44060	lecture	D	09:30 AM - 10:50 AM	TR	room 112 Chemistry Annex	Dooley, A
51498	lecture	HB	11:00 AM - 12:20 PM	TR	room 314 Altgeld Hall	Snodgrass, E

Physical Sciences course. Restricted to James Scholars Program, and First Time Freshman students. Section 51498. This discussion is for James Scholars students only. If you have any questions about the project, the time commitment or anything else, please email the instructor, Eric Snodgrass (snodgrss@atmos.uiuc.edu).Restricted to Liberal Arts & Sciences.

51499	lecture	HC	12:30 PM - 01:50 PM	TR	room 112 Chemistry Annex	Snodgrass, E
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Physical Sciences course. Restricted to James Scholars Program and First Time Freshman students. Section 51499. This discussion is for James Scholars students only. If you have any questions about the project, the time commitment or anything else, please email the instructor, Eric Snodgrass (snodgrss@atmos.uiuc.edu).Restricted to Liberal Arts & Sciences.

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. Same as ESES 140.

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

CRN	Type	Section	Time	Days	Location	Instructor
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30894	lecture-discussion	A	02:00 PM - 02:50 PM	MWF	room 229 Natural History Bldg	Schlesinger, M
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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			
Instructor Approval Required						

201 **General Meteorology** credit: 3 hours.

Introduction to physical processes in the atmosphere, focusing on those relevant to weather and storms. Emphasizes quantitative problem solving. Topics include atmospheric structure, atmospheric thermodynamics, clouds, synoptic meteorology, weather forecasting, and storms. For students in atmospheric sciences, physics, mathematics, engineering, and other physical and natural sciences. Prerequisite: MATH 220 or MATH 221; credit or concurrent registration in MATH 231 and PHYS 211.

CRN	Type	Section	Time	Days	Location	Instructor
48377	lecture-discussion	A	02:00 PM - 03:20 PM	TR		Snodgrass, E

304 **Atmospheric Radiation** credit: 3 hours.

Introduction to the laws governing the propagation of electromagnetic radiation in the Earth's atmosphere. Topics include absorption, emission, and scattering of radiation, absorption and scattering properties of atmospheric constituents, the Sun as a source of radiation, the radiative transfer equation, and simple radiative balance models. Emphasis will be placed on the role of radiation in weather and climate, the description of atmospheric optical phenomena, and the application to remote sensing. Prerequisite: MATH 241 and PHYS 212.

CRN	Type	Section	Time	Days	Location	Instructor
50295	lecture	1	02:00 PM - 02:50 PM	MWF	room 109 Atmospheric Sciences Bldg	Di Girolamo, L

305 **Computing and Data Analysis** credit: 3 hours.

Introduction to the statistical treatment and graphical representation of atmospheric sciences data, both in the space and time domain. Emphasis is placed on applications and real-world examples. Discusses relevant statistics, methods of interpolation and least squares, and linear and nonlinear correlations. Students gain experience using MATLAB for data analysis, develop theoretical skills for analyzing and modeling data, and perform virtual experiments and analyze real-world publicly available data sets. Prerequisite: MATH 241 or consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
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50296	lecture	1	05:00 PM - 06:15 PM	TR	room G8A Foreign Languages Bldg	Baidya Roy, S
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313 **Weather Forecasting** credit: 4 hours.

Examines the tools and techniques of weather forecasting, with heavy emphasis on actual forecasting. Numerical models used to forecast weather are reviewed and compared. Forecasting using numerical, statistical and probabilistic forecasting techniques are studied. Forecasts of significant winter weather, convection, floods and other weather hazards are emphasized. Students learn the process behind Severe Weather Watches and Warnings, Quantitative Precipitation Forecasts, precipitation Type forecasts, Flood forecasts and forecasts of other significant weather. Prerequisite: ATMS 302, ATMS 303 or consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
51090	lecture-discussion	A	11:00 AM - 11:50 AM	MWF	room G7 Foreign Languages Bldg	Frame, J

314 **Mesoscale Processes** credit: 4 hours.

Examination of the structure and dynamics of weather systems that occur on the mesoscale. The course first reviews what is meant by "mesoscale". Examines the structure and dynamics of both free and forced mesoscale circulations. Free circulations are those internal to the atmosphere, such as thunderstorms, mesoscale convective systems, squall lines, hurricanes, jet streaks, and fronts. Forced circulations are those tied to features external to the atmosphere, such as shorelines (the sea breeze), lakes (lake effect storms), and mountains. Prerequisite: ATMS 301, ATMS 302, ATMS 303, or consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
51093	lecture	1	01:00 PM - 01:50 PM	MWF	room 109 Atmospheric Sciences Bldg	Frame, J

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	09:30 AM - 10:50 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
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468 **Optical Remote Sensing** credit: 3 hours.  
Same as ECE 468 and ATMS 468. See ECE 468.

CRN	Type	Section	Time	Days	Location	Instructor
40885	lecture	A	11:00 AM - 12:20 PM	TR	room 260 Everitt Elec and Comp Engr Lab	Swenson, G

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			
Instructor Approval Required						

492 **Capstone Undergrad Research** credit: 4 hours.  
All senior Atmospheric Sciences undergraduate majors are expected to take a Capstone Undergraduate Research experience. Students will either be engaged in an atmospheric science research project or will participate in an approved internship program with an agency involved in atmospheric science research or in meteorological operations. A research or internship project will be with a program at UIUC or with an allied organization. The student will need to first gain approval for their research or internship. No graduate credit. May be repeated to a maximum of 8 undergraduate hours. Prerequisite: Senior standing in Atmospheric Sciences.

CRN	Type	Section	Time	Days	Location	Instructor
50995	conference		ARRANGED			Rauber, R

505 **Weather Systems** credit: 4 hours.  
Examination of the structure and dynamics of mid-latitude weather systems, integrating weather observations, with the current state of dynamic theory, numerical weather prediction models, and the physical principles of atmospheric thermodynamics, cloud and precipitation physics, and radiation to the problems of weather analysis and forecasting. Students will be required to give weather forecast briefings to develop an understanding of the weather forecasting process, and gain experience in communicating weather forecasts. Prerequisite: Graduate standing.

CRN	Type	Section	Time	Days	Location	Instructor
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51030	lecture-discussion	A	12:30 PM - 01:50 PM	TR	room 109 Atmospheric Sciences Bldg	Nesbitt, S
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512 **Clouds and Climate** credit: 4 hours.

The following topics are addressed to examine the role of clouds in the climate system: aerosols and aerosol cloud interactions, direct, semi-direct and indirect aerosol effects, in-situ measurements of clouds, properties of liquid and ice clouds, precipitation mechanisms and representation in models, scattering by cloud particles and model representations, remote sensing of cloud properties, and representation of clouds in climate models. Prerequisite: ATMS 504 or consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
53089	lecture	A	11:00 AM - 12:20 PM	TR	room 109 Atmospheric Sciences Bldg	McFarquhar, G

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			
Instructor Approval Required						

591 **Atmospheric Sciences Seminar** credit: 0 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		Riemer, N

596 **Non-Thesis Research** credit: 4 hours.

Non-thesis research in the Atmospheric Sciences. Approved for S/U grading only. Restricted to students in the non-thesis option.

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
46286	lecture-discussion	P	09:00 AM - 09:50 AM	MWF	room 109 Atmospheric Sciences Bldg	Rierner, N
Aerosol Dynamics and Chemistry						
52772	lecture	Q	02:00 PM - 03:20 PM	TR	room 109 Atmospheric Sciences Bldg	Wang, Z

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			
Instructor Approval Required						