Syllabus Meteorology NATS 1005 Spring 2020

Contents

Class Meetings

- Lecture T 11:00–11:50 Room S245
  Th 11:00–12:50 Room S245
- Lab T 12:00–1:40 Room S250

Ed Wehling—Teaching Scientist

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- *Website:* http://webs.anokaramsey.edu/wehling/
- *Office hours:*

  M 10–10:50 W 9–10:50 Th 10–10:50 F 12–12:50

  I am available many other times.

  You can see me to make an appointment or you can make an appointment online at https://outlook.office365.com/owa/calendar/EdsCalendar@MinnState.edu/bookings/s/EAu52qxpFk-18JW5_bQ8Tg2

Textbooks

Lab manual

- There is a required lab manual for the course.
- It is printed here at ARCC and costs less than $10.
- You will need to have the lab manual by the 2nd week of class.
- **You must have the lab manual to do lab** (after the first week).

  If you do not have the lab manual, you will not be allowed to participate in lab.

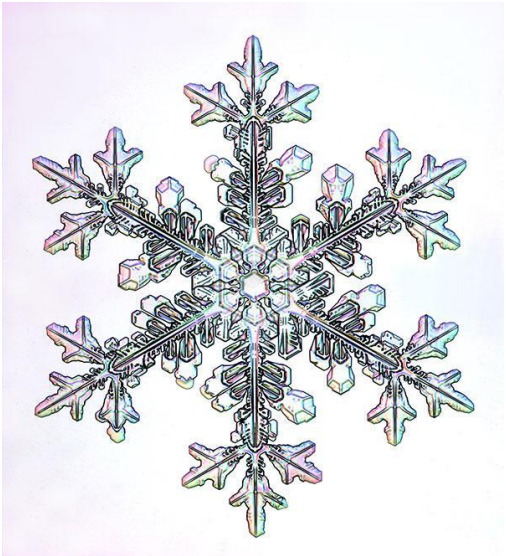
Lecture textbook

- There is no required textbook for the course.
- Information about recommended optional texts is on D2L.

  In most cases, they can be obtained for less than $20 online.
- You know yourself better than I do. If you tend to learn from books, then it might be a good idea for you to get a text. If you're not going to read the textbook if it's not required, why buy one?

What will we do in this course?

- In this course we will explore the physical processes of Meteorology.
- We will talk about tornadoes, severe storms, humidity, jet streams, winds, fronts, hurricanes, and more.
- We will explore questions such as:
    - How do clouds form?
    - What causes lightning?
    - Why is the sky blue?
- We will forecast the weather using the same tools used by the National Weather Service.
- Along the way, we will explore the physical processes of Meteorology.
- We will discuss the current weather and how scientists do their work.
- We will learn about Meteorology in more detail during hands-on labs.
- You will learn skills you will use the rest of your life, such as how to learn, listen, take notes, organize your thoughts, communicate effectively, seek help, and be successful.
- We will also interpret and analyze charts, graphs, maps, and tables.



How does this course work?

Lectures

- I will describe and explain the physical processes of Meteorology
- I will write on the board and show images on the screen
- D2L resources
    - Syllabus
    - Images that are used in lecture
    - Explanations of some topics we cover
    - Links
    - Advice from former students
    - and more

Labs

- We will look at weather maps and data and analyze weather situations
- We will do weather predictions

Exams

- There are 5 exams during the semester
- The exams are based on lecture material only

Assignments

- There are required assignments throughout the semester

My Teaching Philosophy

Students are adults

- No games, no busy work
- Students are responsible for their success
- Students are expected to behave and not disrupt class

Respect

- I expect that we will all respect each other
- I will respect you by:
  - starting class on time
  - ending class on time
  - providing clear expectations about grading policies, exam dates, topic outlines, expected behavior
- I expect you to respect the rest of the class and me by:
  - Showing up to class on time
  - Being prepared to be part of the class
  - Being attentive in class
  - Not being disruptive

My Objectives for this course

I want students to:

1. Learn and communicate about physical processes of science
2. Analyze weather situations and communicate about them
3. Develop ways to study effectively
4. Develop ways to solve problems
5. Improve time management skills
6. Push yourself to stretch beyond what you can do now
7. Work on achieving your goals—strategies and adjustments
8. Be able to tell some stories about Meteorology
9. Do work beyond studying for exams

Required activities in the course

During this semester you will participate in the following activities

- Exams
- Course plans
- Meetings with the instructor
- Labs

Exams

- Exams are based primarily on material presented in lecture
- The exams meet the following course objectives:
    - 1. Learn and communicate about physical processes of science
    - 3. Develop ways to study effectively
    - 4. Develop ways to solve problems
    - 5. Improve time management skills
    - 7. Work on achieving your goals—strategies and adjustments
- Exams consist primarily of multiple choice questions
- The lowest score among the first four exams is not included in your exam average.
- The last exam does count in your exam average.
- **There are no makeup exams for exams 1-4.**
- The exam dates are:
    - Exam 1 Tue, Feb 4
    - Exam 2 Tue, Feb 25
    - Exam 3 Tue, Mar 24
    - Exam 4 Tue, Apr 14
    - Exam 5 Thu, May 14
      11:50–1:50 Room S245 (same room)

Course Plan

- You are required to submit a course plan during the semester.
- The course plans meet the following course objectives (see p. 7):
  - 3. Develop ways to study effectively
  - 4. Develop ways to solve problems
  - 5. Improve time management skills
  - 6. Push yourself to stretch beyond what you can do now
  - 7. Work on achieving your goals—strategies and adjustments

Course Plan

- Due by 11 PM Friday, Jan 17
- Details in D2L Assignments

Late Penalty

- Late penalties will occur if:
  - You do not complete the assignment by the due date for the activity (see D2L).
  - You do not complete the assignment by 7 days after the due date and for every 7 days after that. That is, you will get a late penalty for every 7 days after the due date until you complete the assignment.
  - See the *Grades* section for information about how late penalties affect your grade.

Meeting with the instructor

- You are required to meet with the instructor during the semester.
- The meetings with the instructor meet the following course objectives (see p. 7):
  - 3. Develop ways to study effectively
  - 4. Develop ways to solve problems
  - 5. Improve time management skills
  - 7. Work on achieving your goals—strategies and adjustments

Meeting with the instructor

- Due by Thursday, Feb 20
- *You must have completed your Course Plan at least 24 hours before the meeting*.
- Details in D2L Assignments

Late Penalty

- Late penalties will occur if:
  - You do not meet with the instructor by the due date for the activity (see D2L).
  - You do not meet with the instructor by 7 days after the due date and for every 7 days after that. That is, you will get a late penalty for every 7 days after the due date until you meet with the instructor.
  - You make an appointment to meet with the instructor and do not show up for the appointment without a good excuse.
  - See the *Grades* section for information about how late penalties affect your grade.

Labs

- The primary objective of lab is to give you a chance to experience and learn about Meteorology in a low-stress, hands-on, no-lecture environment.
- Labs also meet the following course objectives (see p. 7):
  - 1. Learn and communicate about physical processes of science
  - 2. Analyze weather situations and communicate about them
  - 8. Be able to tell some stories about Meteorology
  - 9. Do work beyond studying for exams
- **Lab attendance is required to complete the course objectives**
- If you are more than 10 minutes late to lab, you will not be allowed to participate.
- You **must** have your lab manual (after the first week) to participate in lab. In other words, if you don't have your lab manual, you can't participate in lab.
- Be prepared to go outside each week.
- The lab usually meets for the entire 100 minutes. Plan accordingly.
- Bring a pencil, pen, and separate eraser to lab.
- There will be no required lab on Jan 28 & Feb 18.
- Labs are graded pass/fail. There are 14 labs in the semester.
  If you don't pass at least 10 labs, you will fail the course.
- Labs improve your course grade:

# of labs passed	Points added to best exam
13	15
12	12
11	8
10	3
9 or less	fail class

Grades

- Your course grade is based on your exam grades.
- Labs improve your exam grades
- Late penalties reduce your exam grades

Exam grades

- The grading scale for exams and for the course is:

>75%	A
65%–75%	B
55%–65%	C
<55%	F

Lab grades

- Labs improve your course grade:

# of labs passed	Points added to best exam
13	15
12	12
11	8
10	3
9 or less	fail class

Late penalties

- Failure to complete assignments or activities on time can result in late penalties. The late penalties are described for each assignment or activity.
- Each late penalty you accrue reduces your best exam score by 15 points. [For example, if you accrue 2 late penalties during the semester, your best exam score is reduced by 30 points.]
- Late penalties begin accruing with the 2nd late activity.
  [That is, the first time that you are late you do not incur a late penalty and being late the first time will not affect your course grade.]

Course grades

- To get an A in the course you must:
  - Average at least 75% on your exams (including any late penalties)
  - Submit the Course Plan
  - Have the Meeting with the Instructor

- To get a B in the course you must:
  - Average at least 65% on your exams (including any late penalties)
  - Submit the Course Plan
  - Have the Meeting with the Instructor

- To get a C in the course you must:
  - Average at least 55% on your exams (including any late penalties)
  - Submit the Course Plan
  - Have the Meeting with the Instructor

How to be Successful in this course

- Attend class and lab
- Pay attention in class
- Take good notes
- Write down more than what is on the board
- Do your assignments on time
- Know what is available on D2L
- Use the Topic Outlines constantly
- Read the D2L explanations
- Bring * images to class
- Study more than a day or two before the exam
- Do more than go over your notes when you study

Appropriate Behavior in lecture class

- Be courteous
- Do not socialize in the classroom
    - No talking!!
    - If this becomes a problem, you may be asked to be quiet, or asked to leave the room, or given a seat assignment
- Do not pack up early
- Be on time most of the time
    - Everyone is late once in a while
    - If you are late, please do not be disruptive. Be courteous and quiet.
    - If you are late more than 20% of the time (excluding exams), then you may not be allowed late to lecture after that

Other syllabus material

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Electronics

- No **electronics** without the instructor's permission (laptops, recorders, phones, etc.)

Academic Honesty

- All students are expected to adhere to standards of academic honesty as specified in the Student Conduct Code.
- **I take academic honesty issues very, very seriously.**
- Cheating on exams or assignments may result in consequences as severe as failing the course.
- Violations of the Student Conduct Code can result in penalties as severe as expulsion from the college.

Class participation

- In accordance with college guidelines, if you do not meaningfully participate in the class during the first two weeks, you may be dropped from the course.

Title IX and student pregnancy

- Pregnant students have a federal right to educational access through Title IX legislation.
- If you are pregnant and issues concerning your pregnancy are interfering with your ability to access or complete your education, please contact me. We will work on a way for you to meet your goals.

Communication

- **College Policy 2A.2 Student Email**

  To disseminate critical and official college notices to students in an efficient and cost-productive manner, Anoka-Ramsey Community College has designated email via the college-issued email address as the primary method of communication with students regarding topics of academic, student service or administrative nature. The college retains the right to disseminate official notices via traditional methods also.

- I may communicate with you by email during the semester. You are responsible for checking your email for communications from me.

Last day to withdraw from the course

- April 21, 2020

Statement for active military members:

Military members that are currently serving should advise their instructor of all regularly schedule military training and duties that conflict with scheduled course requirements. Instructors will work with the student to address issues that arise. For further information on this, refer to MnSCU Procedure 5.12.1 Military Service and Disabled Veterans.

Disability Services

If you require an accommodation for a disability please contact:
Office for Students with Disabilities 763-433-1350

Policy 4J.1 Religious Observances

Anoka-Ramsey Community College respects diverse religious beliefs and observances. The college will provide reasonable flexibility and accommodation when sincerely held religious beliefs conflict with requirements such as scheduling, class attendance, classroom activities, and other course or work requirements.

A student is required to inform the instructor(s) in advance if a sincerely held religious belief conflicts with course requirements.

From the Common Course Outline

Semester Credit Value 4 credits

Prerequisites None

Catalog Description

Introduction to the physical processes of atmospheric science. Topics include clouds, humidity, precipitation, thunderstorms, tornadoes, and atmospheric dynamics, with an emphasis on weather forecasting in the laboratory. This course is intended for non-science majors.

Learner Outcomes

At the conclusion of the course the student should be able to:

1. Understand the basic physical processes that affect the atmosphere, such as radiation and motion
2. Describe the physical processes that affect, create, enhance, and diminish weather phenomena
3. Understand and interpret graphical information
4. Describe weather phenomena in terms of meteorological processes
5. Obtain and analyze meteorological data and information
6. Formulate and test hypotheses of weather phenomena by performing experiments
7. Communicate findings, analyses, and interpretations orally and in writing
8. Evaluate societal issues from both an ethical and natural science, ask questions about the evidence presented, and make informed judgments about meteorology-related topics and policies
9. Work cooperatively and effectively in groups engaged in the processes of science
10. Describe how meteorologists develop, collect, and analyze data, and how they arrive at scientific conclusions

Meets MNTC Area 3

Major Areas of Course Content:

1. Temperature changes in the atmosphere
2. Water vapor
3. Clouds
4. Precipitation
5. Winds
6. Air masses and fronts

7. Midlatitude cyclones and anticyclones
8. Thunderstorms
9. Severe weather