

Syllabus for ATMS 178 – Society, Technology, and Weather – Fall 2015

Date	Topic	Reading/Homework*
1] T 18 Aug 2015	Introduction	
R 20 Aug	Library tour	Campus walk-about
2] T 25 Aug	Vilhelm's early career	Introduction & Chapter 1
R 27 Aug		J. Check
3] T 1 Sep	Why atmospheric sciences?	Chapter 2
R 3 Sep		
4] T 8 Sep	Technology of the day	Chapter 3, Paper#1
R 10 Sep		
5] T 15 Sep		J. Check
R 17 Sep	Leaving the backwaters	Chapter 4, final draft Paper#1
6] T 22 Sep		
R 24 Sep	Exam I	Chapters 1-4
7] T 29 Sep	The First Great War	Chapter 5
R 1 Oct		J. Check
8] R 8 Oct	Innovative theories	Chapter 6
9] T 13 Oct		
R 15 Oct	Post-war advancements	Chapter 7, Paper#2
10] T 20 Oct		J. Check
R 22 Oct		final draft Paper#2
11] T 27 Oct	Looking for immortality	Chapter 8
R 29 Oct		J. Check
12] T 3 Nov	Exam II	Chapters 5-8
R 5 Nov	Spreading ideas	Chapter 9
13] T 10 Nov		
R 12 Nov	Influence of industry	Chapter 10
14] T 17 Nov	Make-up Exam	Paper#3, J. Check
R 19 Nov		
15] T 24 Nov	Further advancements	Chapter 11, Conclusion final draft Paper#3
Final Exam Period	Final Project Presentations	J. Check, Final Project & final exam

*assignment shall be completed before class meets on this date

Description

This course will focus on Vilhelm Bjerknes, the so-called “Father of Modern Meteorology”, and how political conditions forced him to seek a career outside of theoretical physics and into the new applied physics field of meteorology. We will follow his career as an atmospheric scientist and focus on how the contributions of Vilhelm and those of his students to the field of meteorology were shaped by economic and political events within Norway, Europe, and the world. The “backbone” of the course will be the book, “Appropriating the Weather: Vilhelm Bjerknes and the Construction of a Modern Meteorology” written by Robert Marc Friedman. Students will be responsible for reading this book and for researching the economic conditions arising from the agricultural, industrial, and technological capabilities of the early

1900s as well as the political conditions in place that were laying the foundation for the onset of World War I. It is hoped that the students will gain a new appreciation for the link between the conditions of a society and how society utilizes the sciences to meet its needs arising out of these conditions.

Outline

- Introduction
 - basic skill development and your career
- Appropriating the weather for Physics: A professional strategy (1892-1906)
 - text Chapters 1 & 2
- Toward realizing an atmospheric physics: The quest for authority and resources (1906-1917)
 - text Chapters 3 & 4
- Wartime exigencies: Practical forecasting in Bergen and the origins of a new cyclone model (1917-1918)
 - text Chapters 5 & 6
- Appropriating the weather for commerce: A meteorology for the postwar era (1919)
 - text Chapters 7-9
- Rationalizing the weather (1920-1925)
 - text Chapters 10 & 11

Grading

Course Notebook	5%
Quizzes	5%
Class Participation	5%
Papers [3]	20%
Exam I	15%
Exam II	15%
Final Project	15%
Final Exam	20%
Total	100%

92% < total score ≤ 100%	A
90% < total score ≤ 92%	A-
88% < total score ≤ 90%	B+
82% < total score ≤ 88%	B
80% < total score ≤ 82%	B-
78% < total score ≤ 80%	C+
72% < total score ≤ 78%	C
70% < total score ≤ 72%	C-
68% < total score ≤ 70%	D+
60% < total score ≤ 68%	D
total score ≤ 60%	F

Student Learning Outcomes

- improve basic skills such as critical analysis, writing, and library research
- gain an awareness of the various factors impacting one's career path
- learn how society utilizes the sciences to meet its basic needs

- appreciate how improved scientific understanding drives technical innovation
- recognize the unique historical events of the late 1800s and early 1900s

Course Notebook

The course journal, consisting of your answers to the weekly journal questions, and the course notes, consisting of your classroom and book notes, comprise the ATMS 178 Course Notebook. Notebooks will be checked by your course partner on occasion. I will check the notebooks at the end of each month (highlighted in red on the syllabus schedule above). Answers to the weekly journal questions are due *before class* on the Wednesday of each week (except during exam weeks).

Quizzes

Quizzes will be given unannounced, one per week (except during exam weeks), throughout the semester to encourage course participation and attendance. The quizzes will be defined either as individual or group quizzes. When a quiz is designated for a *group*, each individual within the group will receive an identical grade.

Papers [3]

Three writing projects (due dates highlighted in blue font on the syllabus schedule above) will be assigned during the semester each having the following emphasis...

- (1) how society influenced inventions at the turn of the nineteenth century (1899 to 1900)
- (2) a comparison of the conditions in Norway in 1910 to other European countries
- (3) a report on the state of the arts, sciences, and politics around the globe in 1910

Exam I and II

The mid-term exams (I and II) will be primarily testing new material introduced since the previous exam or since the start of the semester.

Final Exam

The final exam is a *comprehensive* exam in which all the material contained in the entire course is testable.

Make-up Exam

The only time allotted for a make-up exam will be on Tuesday, November 17, 2015 at a time to be determined. The make-up exam will cover all course material from August 18 – November 12, 2015.

Final Project

Final project groups will research how society today is utilizing the sciences (& engineering) to meet its basic needs in one particular field (e.g. human health & safety, transportation, preservation of ecosystems, agriculture, communications, leisure) and will also research and predict how society might steer the sciences within that field 50 years from today. Each group will be responsible for putting together a report and for making an eight minute presentation during the final exam period on December 3, 2015. Details of the project will be given during the lecture period on November 5, 2015.

Assignment/Quiz/Exam Policy

Assignments are to be handed in before the start of lecture on the date they are due. Assignments handed in after the start of lecture are considered late until 4:30 pm on the date they are due and will be have an automatic 10% deduction from their final score. Assignments handed in after 4:30 pm on the date they are due will receive no credit.

Quizzes and Exams are written tests and will be taken on the date they are scheduled, unless circumstances (e.g. medical or loss in the family) warrant. Make-up quizzes for special circumstances will need to be completed within *one week* of the original quiz date.

The **lowest quiz score** for each individual will be dropped from the total quiz score tabulation.

Class Participation

It is important to be prepared in class by participating in the “History Bits and Weather Briefings” on the assigned day and in small group discussions of the chapter questions. On occasion each student will be expected to report the findings of the small group to the entire group of students.

Instructor

Doug Miller <http://www.atms.unca.edu/dmiller/courses/index.htm>
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Textbook

“Appropriating the Weather: Vilhelm Bjerknes and the Construction of a Modern Meteorology” written by Robert Marc Friedman

Disabilities

University of North Carolina at Asheville is committed to making courses, programs and activities accessible to persons with documented disabilities. Students requiring reasonable accommodations must register with the Office of Academic Accessibility by providing supporting documentation. All information provided will remain confidential. For more information please contact the Office of Academic Accessibility at (828) 232-5050 or academicaccess@unca.edu , visit them in the OneStop Student Services Center or at their website <https://oaa.unca.edu/> .

Academic Integrity

Cheating or plagiarism results in a failed assignment, quiz, or exam on the first infraction. A second infraction results in course failure and a report to the UNCA administration. See <http://catalog.unca.edu/> , click on “Academic Policies and Procedures” and read “Student Responsibilities” for a refresher on the UNCA policy.