

## METR 4911 Senior Seminar (Capstone)

### Syllabus      Fall 2014

**Instructor:** William H. Beasley  
NWC 5650  
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Office hours: by appointment any time

**Class Meeting Time and Place:**      Wednesday, 3:10 - 4:10 PM, NWC 5600

**Prerequisite:** Grade of C or better in METR 3123, METR 3223, senior standing. (A grade of C or better is required in METR 4911 in order to continue in METR 4922.)

**Teaching Assistant:** The teaching assistant for the course is Nathan Anderson. He will help in various ways in the course, including help with projects.

**Course Description:** Together with METR 4922, this course satisfies the OU and SoM Capstone course graduation requirement. The instructor, together with selected research mentors, will guide senior meteorology majors through planning of a research project that leads to a new understanding of a topic in the atmospheric sciences, broadly interpreted to cover a wide range of possible research and development activities. Interdisciplinary topics are encouraged. Scholarly research projects are grounded in the scientific literature, therefore, a thorough literature review is requisite to all scientific endeavors in order to set the stage on which the unique contribution of the endeavor is presented.

Students will divide into teams and be paired with regular or adjunct faculty mentors. Other qualified individuals may serve as mentors with permission of the instructor. The main accomplishment during 4911 will be a research proposal, which will serve as a guide for the research project itself in METR 4922. Assignments during the term will contribute to the development of this proposal. Note that you will need to take METR 4922 in Spring of 2015.

**Knowledge Expectations:** Please read the knowledge expectations on the course web page on D2L.

**Instructor Philosophy:** This course provides students the opportunity to undertake meteorological research based to a large extent on their interests. After 3 years of studying meteorology, math, physics, etc., the opportunity actually to do a research project on a subject of intense interest should be welcomed! The course is intended to be flexible so that research projects can be relevant to long-term career plans and goals in the private sector, government agencies, research centers or academia. Your degree is a Bachelor of **Science** degree, and science means research, so regardless of which career path you follow, you should expect to be involved in research at some point in your career. In METR 4911 you will be expected to develop an in-depth understanding of the

research process and a feeling for the research culture in the atmospheric and related sciences. Presentations by researchers during the term are intended to help with this goal.

**Course Activities:** The research proposal you produce in METR 4911 will generally guide your research project in METR 4922. In METR 4911 you will be required to write a letter-of-intent outlining your proposed research. Your proposal will be completed by the end of the term. Since the research will be a team effort, the contribution of each team member is to be defined specifically, just as it would be in a proposal to NSF by several faculty members.

Short assignments will be made from time to time during the semester.

The goal of participating in the research culture at the School will be accomplished through guest lectures on a variety of topics in meteorology and through attendance, if your schedule permits, at the National Weather Center Seminar Series (Tuesday 3:30 to 4:30 pm). Outside speakers will make presentations on current research topics in their research disciplines or professional activities. Past speakers have included faculty, forecasters and private-sector meteorologists reflecting the broad research and development needs of our fields. The instructor may present professional skills useful during job search, early employment, and/or graduate school.

### **Important dates, overview of major assignments, rules and regs**

**This is an overview. Details will be provided in guidelines and a schedule to be posted on D2L**

#### **✍ Class participation**

You are expected to participate in class activities and to be a good citizen in the course. This means attending lectures, being attentive (no surfing the web, no texting in class, answering emails, reading newspapers, etc), and asking questions of invited speakers and the instructor.

#### **✍ Selection of mentors, team members and topics**

Student teams will submit pre-Letters of Intent (PLoI), that is, brief explanations of their topics (a paragraph), a list of team members and name and qualifications of their mentor by **October 7. In class on October 8, each team will give a one-minute overview of its proposed research project.** The instructor reserves the right to reject proposed projects or request modifications in order to meet the requirements of a scholarly research project firmly based in the current scientific literature.

#### **✍ Letter of Intent (LoI)**

A letter of intent, as specified in the guidelines, is due on **October 15**. The instructor reserves the right to reject proposed projects or request modifications in order to meet the requirements of a scholarly research project firmly based in the current scientific literature. The project summary in the LoI may be used as the basis for the project summary in your final proposal.

#### ✍ **Modification and Re-submission**

It is not unusual for a letter of intent to fall short of expectations, and thus to require modification or a completely new effort, and re-submission. Do not panic if this happens. It is a learning experience, one shared by most, if not all, of your colleagues and mentors in proposal and journal article submissions.

#### ✍ **Literature Review of Your Topic and Bibliography Due for Proposals**

The literature review on your topic is due November 18. The literature review may be used as the basis for a section in your final proposal.

#### ✍ **Final Proposal**

The final proposals are due **December 5**.

#### ✍ **Additional Assignments**

Additional assignments will be made from time to time. These assignments may sometimes be accomplished during class time and may be linked to the topic of the invited speaker and, thus, assigned without advanced warning.

### **Course Grade**

The course grade will be determined by:

Final research proposal:	50%
Literature Review:	20%
Letter of Intent:	15%
Additional assignments:	10%
PLoI and presentation:	5%

### **All assignments are to be submitted through D2L**

**Late assignments** submitted without prior notification of the instructor may be marked down at the discretion of the instructor at a rate not to exceed 5% per day. Exceptions will be made for emergencies, religious holidays and other instances consistent with OU policy, and, if possible, the student should contact the instructor in advance. A decision to go storm chasing will not be considered a valid excuse for a late assignment.

### **Web site**

This class uses the Desire2Learn course management software, located at <http://learn.ou.edu>,

Materials will be placed on D2L to guide the assignments, including examples of past proposals.

### **Reasonable Accommodations**

*The University of Oklahoma is committed to providing reasonable accommodation for all students with disabilities. Students with disabilities who require accommodations in this course are requested to speak with the professor as early in the semester as possible. Students with disabilities must be registered with the Office of Disability Services prior to receiving accommodations in this course. The Office of Disability Services is located in Goddard Health Center, Suite 166, phone 405/325-3852 or fax only 405/325-4173.*

### **Academic Integrity**

All students are expected to be familiar with and abide by the OU Academic Misconduct Code. Information on this code and other student policies is located at

<http://studentconduct.ou.edu>

[http://integrity.ou.edu/students\\_guide.html](http://integrity.ou.edu/students_guide.html)

Violations of this code have been and will be reported.

In accord with OU emphasis on academic integrity, I am requiring not only the standard academic integrity pledge on all work but also an additional pledge on all written assignments.

On written assignments, include the following text on the cover page:

I certify that I have read A Student's Guide to Academic Integrity at the University of Oklahoma, and this paper is an original paper composed by me for this course. Except where properly cited and attributed, it has not been copied or closely reworded from any other source and has not been submitted as a whole, or in part, for credit in any other course at OU or any other educational institution. It has not been created or submitted for any other purpose such as a job assignment at my workplace or any other agency.

On all assignments include standard integrity pledge. You may print the blanks for name and date but write out the pledge, sign, and date, in longhand.

*On my honor, I affirm that I have neither given nor received inappropriate aid in the completion of this exercise.*

Name:     *A. N. Mease*    

Date:     *September 32, 2014*    

The following excerpts from the Academic Integrity site are provided for your convenience. Read and Heed so that you may sign the above pledges in all honesty.

A Student's Guide to Academic Integrity  
at  
The University of Oklahoma

What is academic integrity?

Academic integrity means honesty and responsibility in scholarship. Academic assignments exist to help students learn; grades exist to show how fully this goal is attained. Therefore all work and all grades should result from the student's own understanding and effort.

Why does OU care about academic integrity?

In a world where one scandal emerges after another, a reputation of integrity is priceless. Since the establishment of the University in 1890, OU has worked to build a reputation that students, faculty & staff, the administration, and alumni can be proud of. It is the value of the OU degree that provides OU students the best internships, jobs and graduate school opportunities. It takes only a minute to destroy a reputation of integrity. Students must understand the importance of integrity both personally and professionally.

How does OU support academic integrity?

Since 2011, the Academic Integrity Code has given students major responsibility for the OU community's academic integrity system. The responsible student organization is the Integrity Council. Its official duties include chairing academic misconduct hearings, conducting

investigations for reported acts of academic misconduct, reviewing actual academic misconduct cases and recommending sanctions, and serving as peer educators in integrity training for students who have violated the Academic Integrity Code. The Integrity Council website is <http://integrity.ou.edu>. The Office of Academic Integrity Programs (OAIP) supports and advises the Integrity Council. OAIP offices are currently located on the third floor of Carnegie. The main functions of this office are to promote academic integrity on campus, manage the academic misconduct system, and advise the Integrity Council.

What is academic misconduct?

Academic misconduct is any act which improperly affects the evaluation of a student's academic performance or achievement. Misconduct occurs when the student either knows or reasonably should know that the act constitutes misconduct. "I didn't mean to" is never an excuse for academic misconduct.

#### CHEATING AND UNAUTHORIZED MATERIAL ON EXAMINATIONS AND OTHER ASSIGNMENTS

Unless the professor specifies otherwise, all examinations and other assignments are to be completed by the student alone, without inappropriate assistance of any kind. For tests, that means no help is to be given to or received from other persons; no books, notes, cellphones, iPods, calculators, or other materials or devices of any kind are to be consulted; and if a calculator or other hand-held electronic device is permitted to be used for mathematical calculations, no other information may be programmed into or retrieved from the device.

#### IMPROPER COLLABORATION

Collaboration means working together. Many classes emphasize working with a partner or in groups. Permission from the professor to "work together" on a homework assignment, project, or paper is not permission to violate the rules of integrity by simply getting the answers from someone else or presenting another student's work as your own. Unless the professor specifies otherwise, it is assumed that all work submitted for a grade will be the product of the student's own understanding, and thus expressed in the student's own words, calculations, computer code, etc. When a student's work is identical or very similar to someone else's at points where individual variations in expression would be expected, it is reasonable for the professor to conclude that academic misconduct has occurred.

#### SUBMITTING THE SAME ASSIGNMENT FOR DIFFERENT CLASSES

Submitting the same assignment for a second class violates the assumption that every assignment advances a student's learning and growth. Unless the second instructor expressly allows it, submitting an assignment already submitted for another class is a form of academic misconduct. This is also known as self-plagiarism or recycling work.

#### FABRICATION, FORGERY, ALTERATION OF DOCUMENTS, LYING, ETC., IN ORDER TO OBTAIN ACADEMIC ADVANTAGE

It's wrong to lie to an instructor in order to get an excused absence, an extension on a due date, a makeup examination, an Incomplete, admission to a class or program, etc. It's wrong to forge an instructor's signature on drop slips, or anywhere else for academic advantage. It's wrong to falsify transcripts and diplomas. It's wrong to fake data, for example in an assigned lab project, or fabricate quotations or sources for a paper. The person who lies to get out of a difficult situation usually feels that there's nothing personal about it. The person who gets lied to feels differently. All of these actions destroy the institution's integrity and eat away at the expectation of mutual trust among all members of the academic community.

#### ASSISTING OTHERS IN ACADEMIC MISCONDUCT

Helping someone else cheat is itself an Academic Integrity Code violation. So is providing someone with a paper or homework, or any other form of help, where you know, or reasonably should know that the other student will use it to cheat.

#### ATTEMPTING TO COMMIT ACADEMIC MISCONDUCT

Trying to cheat is academic misconduct, even if the attempt is discovered before it is completed. For example, possession of unauthorized notes in an examination is academic misconduct, even if they have not yet been used. Asking others for help in cheating is academic misconduct even if nobody responds and no cheating ultimately occurs.

#### DESTRUCTION OF PROPERTY, HACKING, ETC.

It is an Academic Integrity Code violation to steal or destroy other students' work if the action will foreseeably lead to an academic advantage for oneself. The same is true for gaining unauthorized access to faculty offices, email accounts, or course management services in order to alter grades, access examinations, or otherwise gain improper academic advantage.

#### INTIMIDATION AND INTERFERENCE WITH INTEGRITY PROCESSES

Interfering with the proper functioning of the Academic Integrity Code is also a violation of the Code. For example, it is a violation to threaten or bribe someone to prevent that person from reporting misconduct or testifying in a hearing. It is also a violation to interfere with an Integrity Council investigation or lie to an investigator or other official. Student Code violations may also apply to such conduct. Once the investigation is over, retaliation against someone for reporting misconduct or participating in an investigation or hearing will ordinarily be addressed through the Student Code.

#### PLAGIARISM

There is basically no college-level assignment that can be satisfactorily completed by copying. OU's basic assumption about writing is that all written assignments show the student's own understanding in the student's own words. That means all writing assignments, in class or out, are assumed to be composed entirely of words generated (not simply found) by the student,

except where words written by someone else are specifically marked as such with proper citation. Including other people's words in your paper is helpful when you do it honestly and correctly. When you don't, it's plagiarism. Plagiarism is the most common form of academic misconduct at OU. Students are encouraged to test their skills in avoiding plagiarism by taking the library's plagiarism tutorial, available at <http://libraries.ou.edu/help/tutorials/academicintegrity/player.html>.

Within the academic community and specifically at the University of Oklahoma, the following rules apply:

**IT IS PLAGIARISM TO COPY WORDS AND PRESENT THEM AS YOUR OWN WRITING.**

It is the worst form of plagiarism to copy part or all of a paper from the Internet, from a book, or from another source without indicating in any way that the words are someone else's. To avoid this form of plagiarism, the paper must BOTH place the quoted material in quotation marks AND use an acceptable form of citation to indicate where the words come from.

**IT IS PLAGIARISM TO COPY WORDS, EVEN IF YOU GIVE THE SOURCE, UNLESS YOU ALSO INDICATE THAT THE COPIED WORDS ARE A DIRECT QUOTATION.**

Simply documenting the source in a footnote or bibliography isn't good enough. You must also indicate that the words themselves are quoted from someone else. To avoid this form of plagiarism, put all quoted words in quotation marks or use equivalent punctuation.

**IT IS PLAGIARISM TO COPY WORDS AND THEN CHANGE THEM A LITTLE, EVEN IF YOU GIVE THE SOURCE.**

Putting someone else's ideas into your own words so it's not a direct quotation is called "paraphrasing." Paraphrasing is fine when you cite the source and indicate the new expression is actually your own. When it's not -- when the expression remains substantially similar to the source as a whole or in one of its parts -- it's plagiarism. Even if not specifically prohibited by the instructor, "writing" a paper by copying words and then altering them violates OU's basic assumption about writing and may easily result in a charge of academic misconduct. To count as "your own words," your paper must be so significantly different from your sources that a reasonable reader would consider it a new piece of writing. If it's not -- if "your writing" is substantially similar to somebody else's where individual variations would be expected, it's plagiarism.

**EVEN IF YOU EXPRESS THEM IN YOUR OWN WORDS, IT IS PLAGIARISM TO PRESENT SOMEONE ELSE'S IDEAS AS YOUR OWN.**

It is plagiarism to present someone else's original arguments, lines of reasoning, or factual discoveries as your own, even if you put the material in your own words. To avoid this form of plagiarism, cite the source.



**THE RULES AGAINST PLAGIARISM APPLY TO ALL ASSIGNMENTS.**

Take-home tests, comprehensive examinations, "review of the literature" sections of theses or dissertations, and all other assignments are subject to these rules. There is basically no college-level assignment that can be satisfactorily completed by copying.