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GEO 320.01: Global Water - Writing in Geosciences

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GEO320, Global Water: Writing in Geosciences

Time: 12:10PM-2:00PM, Tuesdays & Thursdays

Place: CHCB 333

Instructors:

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Scientific communication is essential for helping us to use and take care of this earth. –Martha Davis

Overview:

In this course you will learn how to write clearly. Although we will focus on geosciences and global water resources, the principles you learn can be applied to everything you write. Good writing in science is not very different from good legal writing, good journalistic writing, or even good creative writing.

Broadly speaking, scientists write for two groups of people: the first group is other scientists; the second group is non-scientists. Although there are notable exceptions, most scientists write for only the first group. They write articles for professional journals like *Nature* and *Science*, or proposals for granting agencies like the National Science Foundation, or reports for companies or government agencies. Most of this writing is highly specialized, formal, and hard to understand, at least for anyone outside the author's specialized field.

But *scientific writing*, as this kind of technical writing is called, doesn't have to be hard to understand. In this class you will learn principles that will help you write this kind of science clearly.

But it's not enough for scientists to write for other scientists anymore. It's important that scientists write for the general public as well. Our democracy depends on an educated voting public, and science is having more impact on their lives every day. For example, the public will have a lot to do with the fate of rivers and aquifers, and what sort of energy will drive our economy in the future and how we cut damage from energy production. Not to mention the fact that the public pays for billions of dollars of research every year, and they deserve to know what they're paying for!

Writing science for a general audience is called *science writing* and it appears in popular magazines, newsletters, radio programs, internet websites, and television.

It is written in a way that a broad audience can understand. The principles you will learn in this class will help you write this kind of science too.

Each kind of writing – science or scientific – contains different kinds of information (when you write a professional scientific paper for example, you need to know about the complexities of scientific nomenclature and notation). But the point is, your style, informed by the principles of clear writing that you will learn in this course, should be the same.

These principles are based on the idea that good writers always write with their readers in mind. You will learn what readers need to understand a piece of writing and how to fulfill those needs. One writer said it this way: “... the main quality that distinguishes good writers from bad ones is ... good ones have cultivated an abiding empathy for their readers, while bad ones haven’t.”

To use these principles, you need to know basic grammar: parts of speech and sentence structure. These are the essential tools every good writer uses. We will review these and practice them at the beginning of the course. Then we’ll look at the writing process and take some of the mystery out of how to get started and how to organize information before writing a first draft. Then we’ll focus on the principles of how to write clearly, and apply them to a piece of *science* writing as well as a piece of *scientific* writing.

At the end of the course you should be able to:

- communicate written scientific information in a clear and concise style;
- recognize bad writing and improve it;
- develop a polished cover letter and resume;
- write a *Field Note* or *Outside Guide* for publication or radio;
- write a journal style scientific paper based on data you collect and analyze.

Texts:

The text for the course will be Anne Greene’s recently published book, *Writing Science in Plain English*. It’s available at the Bookstore, shelved under the course name, GEO 320 and costs \$13.00. It covers most of the course material and includes exercises we’ll do in class as practice.

To help you with the grammar review, we will **loan** you a simple book on the subject, *The Least You Should Know about English* by Paige Wilson and Teresa

Glazier. You will return this book at the end of the class or before (unless you become fond of grammar and then you can get a copy for yourself!)

For an in-depth guide to conducting research, see *The Craft of Research* by W.C. Booth, G.G. Colomb and J.M. Williams. The authors “guide you through the complexities” of identifying a research problem and building and conducting a successful research project. They provide a useful philosophy of doing science as well as conducting research. It is a dense but good book to consult when doing research of any kind.

We will put as much of the course material as we can on Moodle, but we’ll also give out hard copies of readings as well as additional exercises and you will download and read articles from online sources. Pass in HARD COPIES of your assignments and bring them to tutoring. This makes our editing easier and gives you a record of our comments. We suggest getting a binder where you can keep these copies together.

Tutoring:

We provide one-on-one tutoring throughout the course. Take advantage of it because it helps you relate what we’re learning in class to your own writing. Everyone’s writing is different, and tutoring is a good way to get individual feedback. Come to at least one tutoring session per written assignment, and come prepared – either with questions or with a revised draft.

Drafts:

DOUBLE-SPACE all drafts you hand in and use a reasonable size and readable font (12/14 point Times Roman is a sure bet). This saves our eyes and gives us space to write comments. Put your name, assignment, and date on the upper right of the first page.

Grading:

Your final grade will be based on the following assignments. You will also be graded on your class participation which will depend on your attendance (in class and tutoring), and your level of engagement. The more you put into this class, the more you’ll get out of it.

3 Large Assignments

Field Note or Outside Guide =15

Cover letter and resume =20

Technical paper =25

5 Small Assignments

Four short paragraph assignments on good writing $4 \times 5 = 20$

Grammar quizzes $2 \times 5 = 10$

Citing sources assignment = 5

Class participation = 5

Total = 100

Revision:

Someone once said, “The great thing about writing is that you don’t have to get it right the first time, unlike, say brain surgery.”

Revision is an important part of good writing, and you will be expected to do a lot of it in this class. We expect you to write several drafts of the large assignments and to come to tutoring as you write them.

We expect you to use what you learn in the lectures to help you revise, but often the most useful ideas about revising come from other people who care about it. Seek these people out, perhaps they are friends or roommates, and ask them to read your work and give you feedback.

Don’t be surprised when we pass back your assignments with lots of comments. Come to tutoring, and we’ll discuss them.

Missed Classes and Tutoring Sessions:

If you tell us in advance that you will be missing a class for a valid reason, we’ll help you with the missed material. Otherwise you’re on your own. Likewise, let us know if you have to miss tutoring. Everyone, including the instructors, is allowed one missed tutoring session, but more than that will be frowned upon.

How do you make a good grade in this class?

- 1) Come to class and participate.
- 2) Do the assigned work and show that you can apply what you learn to your own writing.
- 3) Start your assignments early, so you have time to revise often.
- 4) Come to tutoring regularly.
- 5) Do your best.

Privacy Policy

Over the years, I've gathered a collection of good and bad writing that I use as examples in class. The authors are students like you, graduate students, or faculty, and they have kindly allowed us to pick it apart!

Remember the Golden Rule: treat these papers as you would have others treat your own. Don't ridicule them and return the copies I give you after you're finished. Keep the examples of good writing I give you. Reading good writing helps you improve your own.

Plagiarism Policy:

Academic dishonesty includes plagiarism which is the representation of someone else's work as your own (the word plagiarism comes from the Greek *plagion*, which means a kidnapping.) Ideas and data as well as text may be plagiarized. Plagiarism can occur by using and not acknowledging material from the internet, from books, from classmates, and from writing assignments in other classes.

Plagiarism.org (http://www.plagiarism.org/learning_center/what_is_plagiarism.html) posted the following list of actions they considered plagiarism:

- “turning in someone else’s work as your own
- copying words or ideas from someone else without giving credit
- failing to put a quotation in quotation marks
- giving incorrect information about the source of a quotation
- changing words but copying the sentence structure of a source without giving credit
- copying so many words or ideas from a source that it makes up the majority of your work, whether you give credit or not”

We all use the ideas and the writing of others when we write, and giving credit to those we are borrowing from is an important part of writing science. We do this not only for ethical reasons, but because it gives credibility to our writing. In addition, citing sources is one way we scientists interact; it's like a conversation between friends who may agree or disagree, but each one is given the chance to be heard. Showing that you have investigated the literature on a topic and know which authors have investigated which questions, tells the reader that you're comfortable with the information. In a way, you are collaborating with these authors when you cite their work. This gives the reader the sense that what you have to say is important, because it exists in a context of already published information.

If you work with other people and get ideas from them, acknowledge those ideas. If you take a direct quotation from somewhere, show that it is a quotation and cite it. And whenever you do an assignment, write it up by yourself, in your own words. Do not take text from someone else's work and rearrange it; that also constitutes plagiarism.

One way to do this is to put away a useful source for a day or two and then describe it in your own words without looking at it. In addition, revising often is a good way to mix up your words and sentences so they eventually bear little resemblance to the original source. If you are at all uncertain about whether or not to cite or acknowledge a person or material, come and ask us.

At a minimum, confirmed plagiarism will result in failure of this course, and can result in suspension from the University. We have had both happen in our classes, so it's no joke. Familiarize yourself with the Student Conduct Code which outlines the penalties for plagiarism.

Drops and Adds:

See complete content of the academic policy section of the catalog via the following URL: <http://www.umt.edu/catalog/acad/acadpolicy/default.html>

After registering and through the **first seven (7) instructional days of the semester** students may use CyberBear (<http://cyberbear.umt.edu>) to **add courses** or change sections and credits. Students may add courses or change sections and credits **with the consent of the instructor** from instructional day eight (8) (or equivalent as noted in the catalog) through and including instructional day fifteen (15) of the semester. Consent of instructor may be given by the instructor electronically in CyberBear, or via signed Course Change Form. Fees are reassessed on the sixteenth day of the term. Added courses and credits may result in additional fees.

After registering and through the **first fifteen (15) instructional days of the semester**, students may use CyberBear (<http://cyberbear.umt.edu>) to **drop** courses. For courses dropped by the fifteenth instructional day, no fees are charged and courses are not recorded. (For deadlines and refund policy for withdrawal from all courses, see the Withdrawal sections of the catalog.) An instructor may specify that drop/add is not allowed via CyberBear. Either an electronic (CyberBear) override or a hard copy drop/add form is used to make changes in these courses, if approved by the instructor.

Grading Rubric: We won't be grading your drafts. We will write suggestions on them about how to revise, and you can come to tutoring to get help. Revise often until the final due date. The more you revise, the better your writing will be and the higher your mark on your final paper.

When we do grade your papers for "clarity," this is what we'll be looking for:

- 1) Are the ideas creative and interesting?
- 2) Is the paper well-organized?
- 3) Are the voice, tone, and register appropriate?
- 4) Is the writing clear? Does it tell a story with characters and actions?
- 5) Are the verbs strong and mostly in active voice?
- 6) Is the writing concise?
- 7) Are old information and new information in the right places?
- 9) Are the sentences variable lengths?
- 10) Are there unnecessary negatives?
- 11) Are there too many technical terms or noun strings?
- 12) Are the terms the same?
- 13) Does each paragraph have an issue, development, and conclusion?
- 14) Does the document have a point?
- 15) Is the writing grammatically correct and the presentation pleasing?

When we grade your papers for "science," we'll be looking for:

- 1) Have you identified the hypothesis, question or problem being addressed?
- 2) Does the paper follow a logical organization and structure from statement of the problem to conclusion?
- 3) Can we identify your original thinking and contribution in this paper?
- 4) Is the literature cited relevant to the problem and are your ideas/discussions well supported by citations?
- 5) Are facts clearly separated from opinions and interpretations?
- 6) Does the paper make good use of figures, graphs and tables to simplify the complexities of the presentation?
- 7) Is this an overall professional effort?