

**OGLALA LAKOTA COLLEGE**  
Course Syllabus for

**Scientific Literature and Writing (Sci 273)**

**Spring 2014**

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*Instructor:* Alessandra Higa  
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*Class meet:* W 1:00 - 4:00pm (pictel HSCC2-PSCC)  
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Course Description

Sci 273 Scientific Literature and Writing: This course will have two foci: (1) reading and interpreting current scientific literature (related to Life Science: ecology, biology, zoology, evolution, and botany) selected from a cross section of mainstream journals, and (2) preparation, written and orally, of research results in accepted scientific style or a research proposal. Research data will be either original student work or a compilation of current information on the topic selected by the student. Students will write one technical manuscript suitable for submission to a refereed journal.

Prerequisites and credits

Freshman English (Engl 103) and Freshman English II (Engl 113)

Course Outcomes

This is a practical, step-by-step course, designed to guide undergraduate students to understand the scientific literature and to communicate their work more effectively through the written word. At the end of the semester successful students will learn the following skills or key concepts:

- Develop the ability to research a topic thoroughly and efficiently (conduct a comprehensive literature review)
- Effectively read, understand, and critically evaluate the scientific literature
- Learn and apply the IMRAD (Introduction, Methods, Research [and] Discussion) format
- Understand the ethical and legal issues including plagiarism;
- Learn and apply appropriate visual aids (*e.g.* tables, figures, graphs, and other illustrations) to improve the communication
- Develop the ability to clearly present research results in a written format.
- Develop skills to speak in public: oral and poster presentations, and to respond thoughtfully to questions

### Program Outcomes

This course meets the following outcomes of the Math and Science Program:

- Formulate a research problem/question/proposal and design a strategy to address it using the scientific method.
- Carry out a basic research project/proposal and present the results.
- Communicate effectively in written form through words, graphs, and tables.
- Communicate orally using the most appropriate visual support (e.g. poster or power point presentations).
- Create scientific documents such as manuscripts or reports using the correct formats.

### Required Text

Matthews, J. R. and Matthews, R. W. 2008. *Successful Scientific Writing: a step-by-step guide for the biological and medical sciences*. New York, Cambridge University Press. 240p. (ISBN: 978-0-521-69927-3)

### Supplementary Materials

Supplementary materials will be given during the semester, as needed.

### Descriptive Reading Load

It is imperative that you read the scheduled chapters and/or the scientific articles before coming to class in order to be prepared for discussion and participation. Reading is an important key to success in this class. Grade 14 reading level.

### Research, Writing, and Presentation

You will be required to write and present your research or proposal on a scientific format suitable for submission to a refereed journal or funding agency. Research data will be either original student work or compilation of current information on the topic selected by the student. You will be required to give 15-20 minutes power point presentation/or poster presentation on the elected research project/proposal.

### Lakota Perspective Provided Through: Wolakolkiciyapi

Students are encouraged to display the Lakota values of respect, knowledge, generosity, fortitude, truthfulness, and courage, as you perceive such.

### Class Attendance and Course Requirements

1. To succeed in this course, **regular attendance** is imperative, as your presence and participation is critical to your achievement. Part of your grades will be based on participation during class activities. In accordance with OLC policy, you will be dropped from the course if you miss more than *three consecutive* class periods or if you miss *more than five class* periods during the semester.
2. If you plan to miss class you must contact the instructor in advance by e-mail. It is **your responsibility** to make sure you receive all assignments and instructions.

3. No *Make-ups exams*.
4. All OLC and Math & Science departmental policies apply to this class.

### Evaluations and Markings

1. **Homework:** read peer-reviewed articles and write your own manuscript/proposal in order to understand the research process and its mechanisms.
2. **Class work:** participation on class activities: research, discussion, writing, presentation and more. Professors and researchers will be invited to give a lecture on their field of research. You must present a writing summary on the following week to the instructor.
3. **Research, presentation, and final manuscript:** Keep all your data, notes, and ideas in a notebook. This procedure helps you to organize, analyze data, and write during your research project. Besides your final report, you will be required to give 15-20 minutes oral presentation (power point or poster) on an elected research project. These assignments are multifaceted: (1) you will gain experience in processing data/describe during your research; (2) you will learn how to analyze and interpret data; (3) you will learn how to come to a valid hypothesis according to the collected data and its interpretation; (4) through the above-mentioned steps, you will gain the computer skills to produce a power point presentation or a poster presentation for scientific meetings, and (5) you will develop your public speaking skills.
4. **Exams and grading procedures:** the class grade is equal to lectures (30%) and your research (70%) grades. The lecture grade will rest on *exercises in class*, one *midterm*, and one *final* (not comprehensive). The research grade will rest on your *class* and *homework*, the *final report or proposal*, and *oral presentation*.

### Grading

<b>Grade</b>		<b>The following scale will be used:</b>	
Final Exam	15%	A	90% - 100%
Midterm	15%	B	80% - 89.9%
Class and home work	25%	C	70% - 79.9%
Final scientific paper	25%	D	60% - 69.9%
Presentation	20%	F	below 60%
<i>Total</i>	100%		

## Tentative Schedule

<b>Week</b>	<b>Chapter</b>	<b>Information</b>
1 (01/23)	1	Introduction; How to use library resources
2 (01/30)	1	Preparing to write: search and research
3 (02/06)	1	Preparing to write: Plan to succeed
4 (02/13)	2	Composing a first draft: Productivity tools and pitfalls
5 (02/20)	2	Composing a first draft: follow standard structure
6 (02/27)	3	Visual support for the written word
7 (03/06)	4	Visual support for the spoken word
8 (03/13)	5	<i>Midterm</i> , Revising to increase coherence
9 (03/20)		<i>Spring Break</i>
9 (03/27)	6	Improving word choice, and syntax style
10 (04/03)	7	Attending to grammar, numbers, and other mechanics
11 (04/10)	8	The rest of the story
12 (04/17)		Special guest lecture – oral and poster presentations
14 (04/24)		<i>Final Exam</i>
14 (05/01)		<i>Students presentation</i>
15 (05/08)		<i>Students presentation</i>

***\*Note:** Information contained in this syllabus was, to the best knowledge of the instructor, considered correct and complete when distributed for use at the beginning of the semester. The instructor reserves the right to make changes in the syllabus in collaboration with the class with reasonable notice to all concerned.*