

**The University of Manitoba  
Faculty of Agricultural and Food Sciences**



**COURSE TITLE** Principles of Scientific Research and Communication

**Department** Soil Science **Course Number** SOIL7220  
**Academic Session** Winter 2014 **Credit Hours** 3  
**Prerequisites and how they apply to this course** Consent of instructor  
**Classroom Location** Ellis 344  
**Meeting Days and Class Hours** TTh 1130 - 1300  
**Department Office location** Ellis 362 **Phone Number** 474-8153

**Instructor Information**

**Course coordinator:** Dr. Paul Bullock (Paul.Bullock@umanitoba.ca) 204 474-8666

**E-mail contact addresses of instructors:**

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**Course Philosophy**

**Students' Learning Responsibilities**

Students are required to attend all lectures in a given unit and therefore each lecture offered in the course is mandatory. Students are responsible to actively participate in each unit.

**Why this course is useful?**

This course prepares graduate students for activities during their graduate degree and beyond.

**Who should take this course?**

Graduate students in the Department of Soil Science.

**How this course fits into the curriculum**

This is a mandatory course for all graduate students in Department of Soil Science.

**Course Description/Objectives**

**Calendar Description**

Principles of scientific research; management skills; writing skills; oral and poster presentation; preparation of research proposal and thesis (pass/fail). These topics will focus on aspects of soil science and will give students experience in writing and presenting scientific material to increase their professionalism as soil scientists. Prerequisite: Consent of instructor.

**Instructional Methods**

Lectures, discussions, practice in writing, poster production and oral presentations.

## **Course Objectives**

The objective of SOIL7220 is to provide students with the scientific principles, critical thinking and ability to express ideas; to improve written and verbal skills; and gain experience in writing and presenting scientific material to increase their professionalism as soil scientists. .

## **Learning outcomes**

Upon completion of the course, the student should:

- Fully understand plagiarism and other forms of academic dishonesty related to the University and all aspects of scientific endeavor,
- Fully understand ethical scientific behavior,
- Understand the requirements of writing a thesis research proposal and their thesis to fully satisfy Departmental requirements,
- Have a good working knowledge of how to write a scientific paper and a funding proposal, and to understand the scientific publishing process
- Be able to plan their thesis and other projects using time management tools,
- Be able to make and present a good poster at a scientific conference,
- Be able to answer questions concerning their scientific presentations confidentially,
- Be able to give a good oral presentation on a scientific subject using visual aids.

## **Assignment Due Dates**

As given by each instructor in class.

## **Grade Evaluation**

In some cases, there will be written and/or oral exercises. Each lecture unit will be assigned a pass/fail grade by the instructor involved. Each instructor will clearly explain in his/her first or only lecture what entitles a pass or fail in his/her lecture unit. Students will need a pass in EACH unit in order to earn a PASS in the ENTIRE course.

## **Important Dates (e.g., voluntary withdrawal date)**

First Lecture Date: January 7, 2014

February 17 - 21 Mid-Term break: No classes or examinations in most faculties and schools

Voluntary withdrawal date: March 19, 2014

Last Lecture Date: March 20, 2014

## **Texts, Readings, Materials**

### **Textbook(s) – Authors, Titles, Edition**

Note that no particular textbook is prescribed for this course. However, a range of course materials may be distributed or discussed in class. Please read these materials at home. These materials will help you to better understand the lectures and the in-class discussions. In some cases, they will also help you to complete your assignments.

## **Course Policies**

**Late Assignments:** Set by each instructor.

**Missed Assignments:** Set by each instructor.

**Missed Exams:** No exams.

### **Academic Integrity**

Plagiarism or any other form of cheating in examinations, term tests or academic work is subject to serious academic penalty. Cheating in examinations or tests may take the form of copying from another student or bringing unauthorized materials into the exam room. Exam cheating can also include exam impersonation. A student found guilty of contributing

to cheating in examinations or term assignments is also subject to serious academic penalty. Students should acquaint themselves with the University's policy on plagiarism, cheating, exam impersonation and duplicate submission in the University of Manitoba Calendar. Note that it is the student's responsibility to comply.

### **Use of Third Party Detection and Submission Tools**

Electronic detection tools may be used to screen assignments in cases of suspected plagiarism.

**Group Work Policies:** Set by each instructor in class.

### **Course Content**

**Lectures:** Lectures are to be held in room 344 Ellis Building on Tuesday and Thursday from 11:30 to 1:00 pm from January 7 to March 20, 2013 as shown below.

<b>Date</b>	<b>Lectures</b>	<b>Instructor</b>
Jan 07	How to be a successful student: Introduction	Farenhorst
Jan 09	How to be a successful student: Diversity and Respect	Farenhorst
Jan 14	Poster Presentations 1	Bullock
Jan 16	Scientific Research Principles	Zvomuya
Jan 21	Poster Presentations 2	Bullock
Jan 23	Research and Professional Ethics	Zvomuya
Jan 28	Thesis Proposal and Outline	Lobb
Jan 30	Writing Scientific Articles 1	Farenhorst
Feb 4	Writing Scientific Articles 2	Farenhorst
Feb 6	MSSS conference	
Feb 11	Power Answer Techniques	Flaten
Feb 13	Poster Presentations 3	Bullock
<b>Feb 17-21</b>	<b>Midterm Break - No classes</b>	
Feb 25	Project Management	Goh
Feb 27	Writing Research Funding Proposals	Akinremi
Mar 4	Oral Presentations 1	Tenuta
Mar 6	Oral Presentations 2	Tenuta
Mar 11	No class	
Mar 13	Oral Presentations 3	Tenuta
Mar 18	Seminars 1	Tenuta
Mar 20	Seminars 2	Tenuta

### **Some topics discussed in each unit are as follows:**

*Scientific principles and ethics:* scientific philosophy, ethics and science, critical thinking and evaluation, and research observations and recording.

*Poster presentations:* techniques for preparing and delivering an effective poster presentation, poster critique, preparation of a poster.

*Thesis Proposal and Outline:* organization, content, format and presentation of your thesis to follow our guidelines.

*Writing Scientific Articles:* writing a manuscript, techniques, formats, audience.

*Writing Research Funding Proposals:* writing proposals to attract funding.

*Answer Techniques:* addressing questions at a conference or thesis defense, or when being interviewed by the media or potential employers.

*Project Management:* managing time, managing projects, and tracking and charting progress in projects (eg. completing your graduate program on time).

*Oral presentations and seminars:* preparing and delivering an effective oral presentation, using software for oral presentations, chairing and conduct of presentations, in-class practice presentations.