



BIOL*3650 Applications in Biology

Winter 2019

Section(s): C01

Department of Integrative Biology

Credit Weight: 0.50

Version 1.00 - January 07, 2019

1 Course Details

1.1 Calendar Description

In this course, students will explore selected topics related to the application of biological knowledge and techniques in society, such as biotechnology, forensic science, conservation biology, agriculture, health care, public health, and wildlife biology. Different topics are offered each year, reflecting the particular research or professional interest of the course instructor. Upcoming topics will be posted on the B.Sc. Advising and CBS-ADA websites.

Pre-Requisite(s): 9.00 credits including (2 of BIOL*1070, BIOL*1080, BIOL*1090)

Restriction(s): This is a Priority Access Course. Enrolment may be restricted to particular programs or specializations during certain periods. Please refer to the CBS ADA website.

1.2 Course Description

Being an effective communicator is quickly becoming a crucial tool for being a good scientist. Whether sharing results, applying for funding or trying to inspire action, you need to be able to convey your message clearly and concisely. Through this course we'll connect with leading scientists, explorers and conservationists from around the world who are effective communicators. We will also explore new and exciting uses of various media and technology to engage global audiences. Finally, we'll develop strategies for how to break down your science for consumption by diverse audiences from school children, to the general public and the news media.

1.3 Timetable

- Lectures
 - Monday, Wednesday, Friday 11:30 - 12:20pm
 - Richards Building, Rm 2529

- Commencing January 7th, 2019
- Please note, some lectures may be cancelled - please check CourseLink for cancelled classes

1.4 Final Exam

This course does not have a final exam.

2 Instructional Support

Joe is an educator and scuba diver working to bring science, exploration, adventure, and conservation into classrooms across North America and beyond through virtual speakers and field trips. He is the founder of the non-profit Exploring by the Seat of Your Pants, which, since 2015, has hosted more than 1,000 Google Hangouts with leading scientists and explorers from over 50 countries, connecting them with hundreds of thousands of students. In 2017, he was selected as a National Geographic Emerging Explorer, before becoming National Geographic's first Education Fellow. Joe is a Top 50 Finalist for the Global Teacher Prize, and is a Grosvenor Teacher Fellow, Ocean Exploration Trust Fellow, Fellow of the Royal Canadian Geographical Society and an Explorers Club Fellow.

2.1 Instructional Support Team

Instructor:	Joe Grabowski
Email:	grabowsk@uoguelph.ca
Office:	SSC 3481
Office Hours:	2-hours prior to the lecture and 2-hours following each lecture. Please note that for any day that the lecture is cancelled, office hours are also cancelled.

3 Learning Resources

- No required textbook

3.1 Required Resource(s)

CourseLink (Website)

<https://courselink.uoguelph.ca>

This course will make use of the University of Guelph's course website on D2L (via CourseLink). Consequently, you are responsible for all information posted on the CourseLink page for BIOL*3650. Please check it regularly.

4 Learning Outcomes

4.1 Course Learning Outcomes

By the end of this course, you should be able to:

1. Discuss and debate topics in science communication.
 2. Become comfortable presenting science topics in a variety of ways including orally, visually and through text.
 3. Develop a communications plan that incorporates goal setting, audience surveys, multiple communication platforms, and analytics.
 4. Translate peer-reviewed scientific articles into more easier to digest media such as a blog post, plain language summary, social media content, etc.
 5. Create quality science communication deliverables using new and emerging technologies.
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5 Teaching and Learning Activities

Lectures periods will comprise presentations by the instructor and virtual visits from scientists and explorers. Students will engage in course material through discussion, analysis of specific cases, demonstrations and projects.

5.1 Lecture

Week 1

Topic(s): Introduction and Course Overview

No classes January 9th and 11th

Week 2

Topic(s): What is Science Communication, Science Communication and Communicators Past and Present

Week 3

Topic(s): Public Speaking

No classes January 25th

Week 4

Topic(s): Oral presentations of 2 minute Science Concept

No classes January 28th

Week 5

Topic(s): Social Media: Building Your Presence - Social Media Platforms, Personal Website, Blogging

Week 6

Topic(s): Developing a Communications Plan and Communicating with Resource Managers/Policy Makers

Topic(s): Reading Week No Classes

Week 7

Topic(s): Science Writing

Week 8

Topic(s): Creating Videos

Week 9

Topic(s): Story Telling and Unconventional Science Communication

Week 10

Topic(s): Virtual Reality and Augmented Reality

Week 11

Topic(s): Taking Your Audience Further

Week 12

Topic(s): Careers in Science Communication Conventional and Charting Your Own Path

6 Assessments

6.1 Marking Schemes & Distributions

Name	Scheme A (%)
Participation Activity - About Me Page/Video	3
Participation Activity - Weekly Blog Posts	10
Participation Activity - Elevator Pitch	2
Participation Activity - Online Scavenger Hunt	5
Oral Presentation - 2 min Science Concept Presentation	10
Writing Assignment - Science Communicator Profile	10
Writing Assignment - Communication Plan	10
Writing Assignment - Peer Reviewed Article Summary	20
Communication Deliverable - Social Media Posts	5
Communication Deliverable - Unconventional Science Media	15
Communication Deliverable - Science Communication Video	10
Total	100

6.2 Assessment Details

Participation Activity - About Me Page/Video (3%)

Due: Mon, Jan 14

Learning Outcome(s): 1,2,3,4,5

Participation Activity - Elevator Pitch (2%)

Due: Fri, Jan 25

Learning Outcome(s): 1,2,3,4,5

Elevator Pitch

Participation Activity - Weekly Blog Posts (10%)

Date: Mon, Feb 11

Learning Outcome(s): 1,2,3,4,5

On-going through the semester, starting on February 11th.

Participation Activity - Online Scavenger Hunt (5%)

Date: Mon, Mar 18 - Fri, Apr 5

Learning Outcome(s): 1,2,3,4,5

On-going starting on March 18th

Oral Presentation - 2 min Science Concept Presentation (10%)

Date: Wed, Jan 30

Learning Outcome(s): 1,2

Writing Assignment - Science Communicator Profile (10%)

Date: Mon, Feb 4

Learning Outcome(s): 2,3,4

Writing Assignment - Communication Plan (10%)

Date: Fri, Mar 1

Learning Outcome(s): 2,3,4

Writing Assignment - Peer Reviewed Article Summary (20%)

Date: Mon, Mar 18

Learning Outcome(s): 2,3,4

Communication Deliverable - Social Media Posts (5%)

Date: Mon, Feb 11

Learning Outcome(s): 3,4

Communication Deliverable - Unconventional Science Media (15%)

Date: Mon, Mar 25

Learning Outcome(s): 3,4

Communication Deliverable - Science Communication Video (10%)

Date: Mon, Apr 1

6.3 Assignment Details

Participation Assignments - Total 20%

Active engagement in science communication is an important part of this course. Throughout the winter term there will be four specific activities to participate in: about me - introduction, elevator pitch, weekly blog posts and on-line scavenger hunt. These activities include crafting your one minute elevator pitch, creating an About Me page or video and weekly ~ 500 word science blog posts.

Writing Assignments - Total 40%

Writing is still a very important aspect of science communication and there will be three different assignments throughout the term. The first will be a profile about a science communicator, past or present. Students will also learn about creating and following a communications plan, then create one for an announcement by an environmental agency. Finally, students will select a peer-reviewed scientific article on a scientific topic/issue in biological science and write a blog post (~700 words), a plain language summary (~200 words), a 30-60 second sound bite, and social media content (posts for Facebook and Twitter) for the article for general public consumption.

Communication Deliverable Assignments - Total 30%

Science communication can take many forms and throughout the winter term there will be three deliverables. We'll talk about various social media platforms and create sample posts for each. After learning about unconventional methods of science communication, students will create one of their own (ie. podcast, infographic, art, song, photo Story). Finally, students will create a 2-3 minute video breaking down biological science concept for public consumption.

Oral Presentation Assignment - Total 10%

Speaking to the public in a variety of settings is an important science communication skill. Students will choose any biological science topic that interests them and create a 2 minute presentation for a smart, but informed, non-specialist audience. These will be presented to the class.

7 Course Statements

7.1 Grading

Grades will be assigned according to the standards outlined in the U of G Undergraduate Calendar (p37-38).

7.2 Late Policy

A late penalty of 5% will be deducted each day an assignment is late.

8 Department of Integrative Biology Statements

8.1 Academic Advisors

If you are concerned about any aspect of your academic program:

- Make an appointment with a program counsellor in your degree program. [B.Sc.](#)

[Academic Advising](#) or [Program Counsellors](#)

8.2 Academic Support

If you are struggling to succeed academically:

- Learning Commons: There are numerous academic resources offered by the Learning Commons including, Supported Learning Groups for a variety of courses, workshops related to time management, taking multiple choice exams, and general study skills. You can also set up individualized appointments with a learning specialist. <http://www.learningcommons.uoguelph.ca/>
- Science Commons: Located in the library, the Science Commons provides support for physics, mathematic/statistics, and chemistry. Details on their hours of operations can be found at: <http://www.lib.uoguelph.ca/get-assistance/studying/chemistry-physics-help> and <http://www.lib.uoguelph.ca/get-assistance/studying/math-stats-help>

8.3 Wellness

If you are struggling with personal or health issues:

- Counselling services offers individualized appointments to help students work through personal struggles that may be impacting their academic performance. <https://www.uoguelph.ca/counselling/>
- Student Health Services is located on campus and is available to provide medical attention. <https://www.uoguelph.ca/studenthealthservices/clinic>
- For support related to stress and anxiety, besides Health Services and Counselling Services, Kathy Somers runs training workshops and one-on-one sessions related to stress management and high performance situations. <http://www.uoguelph.ca/~ksomers/>

9 University Statements

9.1 Email Communication

As per university regulations, all students are required to check their e-mail account regularly: e-mail is the official route of communication between the University and its students.

9.2 When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons please advise the course instructor (or designated person, such as a

teaching assistant) in writing, with your name, id#, and e-mail contact. The grounds for Academic Consideration are detailed in the Undergraduate and Graduate Calendars.

Undergraduate Calendar - Academic Consideration and Appeals

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml>

Graduate Calendar - Grounds for Academic Consideration

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

9.3 Drop Date

Courses that are one semester long must be dropped by the end of the fortieth class day; two-semester courses must be dropped by the last day of the add period in the second semester. The regulations and procedures for course registration are available in the Undergraduate and Graduate Calendars.

Undergraduate Calendar - Dropping Courses

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml>

Graduate Calendar - Registration Changes

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/genreg-reg-regchg.shtml>

9.4 Copies of Out-of-class Assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

9.5 Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required; however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to book their exams at least 7 days in advance and not later than the 40th Class Day.

More information can be found on the SAS website

<https://www.uoguelph.ca/sas>

9.6 Academic Integrity

The University of Guelph is committed to upholding the highest standards of academic integrity, and it is the responsibility of all members of the University community-faculty, staff, and students-to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff, and students have the responsibility of supporting an environment that encourages academic integrity. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

Undergraduate Calendar - Academic Misconduct

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml>

Graduate Calendar - Academic Misconduct

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

9.7 Recording of Materials

Presentations that are made in relation to course work - including lectures - cannot be recorded or copied without the permission of the presenter, whether the instructor, a student, or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

9.8 Resources

The Academic Calendars are the source of information about the University of Guelph's procedures, policies, and regulations that apply to undergraduate, graduate, and diploma programs.

Academic Calendars

<https://www.uoguelph.ca/academics/calendars>
