

WELCOME TO THE 2021 PANDEMIC EDITION OF  
**THE BIODIVERSITY AND WATERSHED MANAGEMENT COURSE**

Instructors: *Dr. Shoshanah Jacobs and Dr. Dawn Bazely*

To apply, please fill out this survey by April 22, 2021

[https://uoguelph.eu.qualtrics.com/jfe/form/SV\\_8d28cav4qjPpscC](https://uoguelph.eu.qualtrics.com/jfe/form/SV_8d28cav4qjPpscC)



The pandemic has been challenging for field courses too:

With the cancellation of in-person summer Ontario University Program in Field Biology field courses in 2020 and now again in 2021 in response to the COVID19 pandemic, we have partnered with the Department of Biology at York University to offer a virtual and remote field course for students at Guelph.

This alternative option that complies with current Toronto and York University Pandemic Public Health policy, and Wellington-Dufferin Public Health: a SIX-week remotely taught, virtual version of the Biodiversity and Watershed Management offered by York University and taught by Dr. Dawn Bazely.

But that doesn't mean that we can't experience a field course:

This REMOTELY-OFFERED field course will run Mondays and Wednesday for **7 weeks** beginning on May 10, 2021. Classes and Labs will begin in week 2. The first week will be for orientation and setting up your equipment.

Classes: MW 10:30 am –12 noon (guest speakers, presentations, student talks)

Laboratories: MW 2:30 – 5 pm (this is when you will do your field work at home, in your indoor Biome and your local outdoor ecosystems within the outside boundaries of your home.

There WILL be a group field work project in which students will do coordinated individual work from home. This is due September 15, 2021.

#### Flexibility and adaptability is key:

All field courses require participants to be flexible and adaptable. Plans can change due to weather, class progress, changes in schedules of guests. Our commitment to you is to keep you updated on the plans. We ask for your cooperation, great ideas, and enthusiasm in return.

#### Goals of the Remote Course

To provide York and Guelph University students in Biology, and the Environmental Science program with a substitute field course that provides hands-on learning experiences, group work experience, and a curriculum content that overlaps as much as is feasibly possible with an IRL (in-real-life) field course. Field courses are different from regular semester courses in that they provide a greater opportunity to build camaraderie and team skills. They also teach field identification skills, and field work protocols.

#### Solution to the Cancellation of all in-person courses, including field courses

This course will provide hands-on experience in the form of at-home ecology projects that can be done with locally sourced materials, from recycled paper and kitchen dishes, to the plants and animals in back gardens and parking lots of apartment buildings, while safely maintaining appropriate Social Distance. The Department of Integrative Biology will provide a kit of essential equipment at their cost, that students will keep.

We will have eight guest speakers, including some that you would meet during the in-person course. As with that course, you will learn about their career paths in Environmental Science and Ecology.

Draft Course Outline BIOL\*4410 – Fall 2021

Field Ecology – **Section 02** – Biodiversity and Watershed Management

Course running 10 May-September 15<sup>th</sup> (see details)

Courselink and Zoom will replace IRL (in real-life) teaching and learning while field and laboratory work will be done at home using equipment in kits mailed to students (these kits are super fun!). A clean table top or desk is all the space you'll need. Other required materials can be found (for free) in most homes.

**PLEASE start collecting some empty pop bottles and empty glass jars.**

Please see if you can borrow some binoculars though they are not essential.

Group research projects will be done online, in a closely guided process.

Classes: 2 x 1.5 hours per week BEGINNING IN WEEK 2, 17 May 2021, Monday and Wednesday 10:30 am -12 noon.

Laboratories: 2 x 3 hours per week beginning 17 May 2021, Monday and Wednesday 2:30 pm - 5 pm.

There will be 12 classes and 12 labs. The last week of scheduled classes will be June 21, 2021.

Topics covered: Watersheds and Urban Ecosystems; Soil Ecology; Seed and Pollen Ecology; Indoor Biomes; Maps in Ecology; Virtual Field Trips and Augmented Reality; Animal Behaviour; Team Science; Citizen Science; Science Communication.

*Week 1:* May 10-15: Introductions, equipment set up, and assignments of research papers for student Pecha Kucha talks.

Make your Winogradsky columns.

Make and learn to use your Foldscope:

Details:

Monday, May 10<sup>th</sup>: Asynchronous: *Anthropocene: the Human Epoch* (available in UofG library online collections)

Wednesday, May 12<sup>th</sup>:

- Class 10.30-12.00: Synchronous (zoom): Intros to the course, virtual field courses vs F2F field courses

- Lab 2.20-5.00 pm: Synchronous (zoom): Set up your own watershed model. Let's do it together!

Troubleshooting etc...

*Under construction:*

*Week 2:* Guest speakers on Microbiology and the Indoor Biome and Soil Ecology. Learn about and make model watersheds: lectures and labs.

*Week 3:* Urban Ecology Lectures and Guest Speaker on Maps and creating Virtual Field Trips with Augmented Reality.

*Week 4:* Sharpen your online research skills with Guest Speakers and Observing Urban Wildlife and Bird Identification with co-founder of this course, Dr. Scott Tarof (to be confirmed), Ecological Consultant, past Biology Course Director and Faculty of Science Teaching Award Winner.

*Week 5:* Design your group Field Project with Guest Speaker (on statistics), Professor Nigel Waltho (to be confirmed), Carleton University

*Week 6:* Design a better science poster with Dr. Fallon Tanentzap (to be confirmed), Plant Sciences, Cambridge University, UK and Group Project Pitches

Students will collaborate on group research projects that you develop during the course, particularly in June. Your individual project write up will be due at the end of July 2020. Prof. Bazely and your TA will have student office hours every day for one hour during July for you to consult with us.

*Grade Breakdown:*

25% - Talk in Pecha Kucha Format – Every student will be assigned a paper to present.

Due: May 31, 2021

10% - In-courselink quiz about identification of flora and fauna around week 4.

Due: Week 4, TBD

15% - Science At Home, Virtual Field Course notebook. For 5% of your 15% please submit a 150 word paragraph about your favourite observation page to the Urban Field Naturalist Project in Australia. You may see it published on their website about how people are observing urban nature during the pandemic:

<http://urbanfieldnaturalist.org/>

Please see other field notebooks at: <https://siarchives.si.edu/about/field-book-project>

Due: September 15, 2021

50% - Group Virtual Field Work project (I have lots of ideas on how to do this, though each group will come up with your own research question). Breakdown of 50%:

10% - group pitch about your research project,

Due: TBD

40% - Write-up of group research project in the form of an individual poster from each student and some ancillary notes in the form of a short lab. report format write up. We will explore options for poster design. Here's a video about how to make a better poster: <https://youtu.be/1RwJbhkCA58>

Due: September 15, 2021