

<b>Course Title:</b>	<b>Biodiversity in the Biosphere Reserve</b>	
<b>Instructor(s):</b>	Liette Vasseur, Brock University, <a href="mailto:lvasseur@brocku.ca">lvasseur@brocku.ca</a>	
<b>Dates:</b>	August 14-25 (students must arrive on August 13). 2 weeks = 12 days in the field minimum	
<b>Location:</b>	Brock University (students can stay in residences) and Niagara region	
<b>Cost:</b>	<p>\$350 for supplies and transportation during the course of the course to various field sites. It is important to note that accommodation and travel to Brock is extra and on own student’s responsibility. Since the course includes working in team and in evenings and starting early in some mornings, it is strongly recommended to stay in residences on campus. The cost of campus accommodation is <b>not</b> included and will be available soon for the two-week period. Students should budget approximately \$45/day for food if using the campus food services. A notification to students approved for the course will be sent in advance for accommodation and parking passes. Transit system is available but with limitation at Brock.</p>	
<b>Prerequisites:</b>	General ecology (strongly recommended: statistics course)	
<b>Enrolment:</b>	20 (8 reserved for Brock)	
<b>Course Description (brief):</b>	<p>Introduction of the concepts of Biosphere Reserves and the importance to protect biodiversity. This course deals with the issues and techniques of ecosystem survey and long-term monitoring of changes due to human activities and environmental factors (natural and anthropogenic). It examines natural versus urban ecosystems based on integrative studies from the biological, geological, geographical, management, social, and economic perspectives. The course will introduce students to sampling design and techniques, treatment of data incorporated in fieldwork, labs, lecture-discussion, and integration of various concepts through team projects and report preparation. Monitoring techniques will include rapid environmental assessment, field practices and installation of permanent biodiversity plots, tree mapping in plots, soil sampling and analyses, insect, salamander, and bird surveys; and surveys of aquatic ecosystems. The course includes the re-evaluation of another series of permanent biodiversity plots well as a team project. Note that the field work is mainly in an escarpment and therefore physically demanding (Niagara Escarpment Biosphere Reserve).</p>	
<b>Evaluation:</b>	<p>Field Journal (individual) 30%</p> <p>Monitoring interpretation homework (individual) 15%</p> <p>Presentation (team) 10%</p> <p>First week report (team) 10%</p> <p>Participation (it’s teamwork) 10%</p> <p>(evaluation completed by professor, TA and team peers using a specific evaluation form)</p> <p>Final report (team) 25%</p> <p>(to be submitted two weeks after the field course)</p>	

## An Average Day – What to Expect

(a) Daily timeline	The average workday will start at 8 am in the lab and continuing field work until about 6 pm. It is expected that teams work on data entry and journals at night (strongly recommended to not wait to later days) from 7:00-10pm. Some monitoringThis means that students CANNOT be working part time jobs during the field course, and this includes the weekend.
(b) Work habitat & Physical exertion	This course is physically demanding as a large part of the work will be in the escarpment, in forested areas and along shorelines, and we will walk a lot in shrubby areas. Strong supportive hiking boots, rain boots and if students have hip waders, they can bring them. We will be in the field every day, rain or shine. Note that conditions are requiring that students come prepared with boots, long sleeves, and long pants as there are wasps, poison ivy (and a lot of it), etc. if rainy, the field will be muddy. There are no bathrooms in these woods and the temperatures can be quite hot in August. This means students should bring lots of water as water breaks may be needed on a regular basis (I usually also bring a water tank for people running out of water).
(c) Common activities	Lots of walking between sites (some being muddier than others, some others rockier), on the shoreline, it also means need for tall boots or waders. Bring also binoculars. There will be long days sitting or walking in the forests. <ul style="list-style-type: none"> <li>• Associate risks include: poison ivy, ticks, mosquitoes, wasps (bring your kit if allergic), sunburns or cold (depending on weather conditions) so bring appropriate clothes, hat, raincoat, and sunblock. Footwear should include very good walking shoes, especially when in the escarpment.</li> </ul>
(d) Weather, dehydration, & biting insects	Weather conditions likely to be encountered are a min temperature of 14oC and max of 27oC. Sun can be quite strong (so careful about dehydration and sunburn). Often, we have high winds and showers in August. <ul style="list-style-type: none"> <li>• Insects to be expected mosquitoes, tick, bees/wasps. Long sleeves and long pants are need and bring insect repellent.</li> </ul>
(e) Toxic/poisonous, wildlife/ plants	The natural hazards will include climbing the escarpment (almost daily), ticks & Lyme disease (depends on the year and often not many to none), stinging bees/wasps (especially ground ones and they can be anywhere), poison ivy (we have a lot of this). Make sure to bring insect repellent, after bite lotion and calamine lotion.
(f) Sleeping, washroom & laundry facilities	Sleeping accommodations are on your own. It is strongly recommended to arrange with the Brock residence. Washroom facilities are located on campus and can only be reached when not in the field.
(g) Meal plans & food allergies	Make sure that you bring enough food to last the full day, i.e. breaks and lunches. As it is physically demanding prepare more than not enough.
(h) Non-academic responsibilities	As some activities such as soil analysis and identification using microscopes are in lab which need to be clean all the time. It will be the responsibility of the students to maintain the good functioning of the field equipment and books and ensure that they are back clean and functioning at the end of each day.
(i) Degree of isolation	Students will be working in teams and should not be isolated. They will be able to recharge computers, cameras, etc. at night when back to their accommodation or during their work in the lab. Cellphones working however note that when close to the US border, better to turn off the roaming as often the American signals come before the Canadian ones. There is security on campus for immediate assistance or medical issues. for students with allergies, it is important to notify the instructor and at least one person in her/his team.
(j) Alcohol & drugs	No alcohol permitted during the field work. The Brock policy is “Smoking or vaping marijuana anywhere on campus will remain prohibited at Brock University”
(k) Vaccinations/ Insurances	Vaccinations are not really needed however most should already have their tetanus shot. Insurances from your university as a student.
(l) Social Situations	The field course is mainly based on teamwork and therefore it is required that students work together in a culturally respectful way. If conflicts arise, it is the responsibility of the team to find solutions. No team will be dissolved and start working individually as this is not possible due to the amount of work and data (as well as safety).
(m) Final comments	The course has been very helpful for students in the past and they enjoyed it. Great time to make friends and learn how what you learned in class can be used in practice.