BIOD66: Causes and Consequences of Diversity
Fall 2018

Course information

Lecture times:
Thursdays 9-12am

Location:
BV 361

Textbook:
None

Exams:
Midterm & Final

Projects:
Final paper
Blog post

Professor:
Marc Cadotte

Office: SY362

Office hours: By appointment or with TA

Email: mcadotte@utsc.utoronto.ca (please put BIOD66 in the subject line)

Phone: 416-208-5105

Teaching Assistants:
Sara Campbell; sarae.campbell@mail.utoronto.ca

Course description

This course will combine lecture and projects to explore the evolutionary and ecological processes that generate patterns of biological diversity as well as how species interactions and ecosystem function are affected by diversity. Of key interest will be how invasions, climate change, and habitat destruction affects diversity and function.

Course Resources

Course Website and Online Lectures: Lecture notes (PDF copies of the Powerpoint slides) will be posted on Quercus by noon the day before the lecture. You should familiarize yourself with Quercus and its contents, and check it regularly.

How to Get Help with the Course. First, check this syllabus; you will find the answer to almost all procedural questions here. If you have a question that cannot be answered by this syllabus, check the course website, which will be consistently updated with answers to many conceptual and procedural questions. If this does not answer your question, then decide if the question is conceptual or procedural. Conceptual questions are best answered by the TA or the professor's office hours. If you have other questions, feel free to email either TA or the professor.
The professor will return your email in a reasonably timely fashion Monday through Friday.

Course Requirements/Marking

*Midterm exam* (15): Short answer and multiple-choice exam will cover concepts from first half of course.

*Blog post* (10): All students will prepare a blog post on a topic about human impacts on ecosystems (Due date TBD).

*Blog presentation* (10): All students will give a short in-class presentation on their blog post.

*Participation* (20): All students will be expected to submit questions before each class and discuss readings in class.

*Paper* (20): All students will complete a final paper (Due last day of class).

*Final exam* (25): The long and short-answer exam will cover all material from the course.

Accessibility

Everyone is a welcome member of this class, and we strive to provide an equal playing field for students with diverse learning styles and needs. Please contact the AccessAbility office as soon as possible if you need any form of accommodation. They will provide confidential services that include flexible, personalized solutions for test-taking, note-taking, and the like. The AccessAbility office is located in SW302 and can be emailed at: ability@utsc.utoronto.ca

Academic Integrity

The learning environment is built on mutual trust, and we will assume that all students operate with honesty and integrity. However, in the rare cases of substantial evidence that the University of Toronto's Code of Behaviour on Academic Matters (Section B; http://www.governingcouncil.utoronto.ca/policies/behaveac.htm) has been compromised, then I will enact the procedures outlined in the Code of Behaviour on Academic Matters. First, I will invite you to discuss the possible offence through an email invitation. If our discussion leads me to believe that you have not compromised the code, then the matter will be dropped. If either you fail to respond to two requests for this discussion or new evidence comes to light, then a formal investigation will be initiated.
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<thead>
<tr>
<th>Week</th>
<th>Lecture</th>
<th>Topic</th>
<th>Readings</th>
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<tbody>
<tr>
<td>SEP. 6</td>
<td>1</td>
<td>Intro to causes and consequences of diversity. Anthropocene and biodiversity and assembly mechanisms.</td>
<td>Sala et al. 2000</td>
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<td>SEP. 13</td>
<td>2</td>
<td>The major stressors today and their effects on biodiversity via assembly - land use change, fragmentation.</td>
<td>Helmus et al. 2014; Frishkoff et al. 2014</td>
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<td>SEP. 20</td>
<td>3</td>
<td>Biodiversity and ecosystem function/services.</td>
<td>Tilman et al. 2014; Srivastava &amp; Vellend 2005</td>
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<tr>
<td>OCT. 4</td>
<td>NA</td>
<td>Test and work on blog post/paper</td>
<td>Lectures 1-4</td>
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<td>OCT. 11</td>
<td>NA</td>
<td>Reading week</td>
<td>Reading week</td>
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<tr>
<td>OCT. 18</td>
<td>5</td>
<td>Urban ecology</td>
<td>Lepczyk et al. 2017; Dunn &amp; Heneghan 2011</td>
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<td>OCT. 25</td>
<td>6</td>
<td>Climate change and assisted migration</td>
<td>McLachlan et al. 2007; Bellard et al. 2012</td>
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<td>NOV. 1</td>
<td>7</td>
<td>Agro-ecological systems: good or bad for biodiversity?</td>
<td>Landis 2017; Kremen et al. 2002</td>
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<td>NOV. 8</td>
<td>NA</td>
<td>Blog post presentation/work on final paper</td>
<td>None</td>
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<td>NOV. 15</td>
<td>9</td>
<td>Invasive species: problems, benefits, future?</td>
<td>Simberloff 2011; Davis 2011; Good NYTimes; Ricciardi &amp; Ryan 2018</td>
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<td>NOV. 22</td>
<td>10</td>
<td>Restoration - baselines; objectives; use locally adapted genotypes?</td>
<td>Thorpe &amp; Stanley 2011; Kettenring et al. 2014; Breed et al. 2013</td>
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<td>NOV. 29</td>
<td>11</td>
<td>Emerging technologies. Crispr, gene drives, and genetic tools to manipulate species</td>
<td>Reardon 2016; Webber 2015; Esvelt 2014</td>
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Readings


