

**BIOD66: Causes and Consequences of Diversity
Fall 2013**

Course information

Lecture times:

Mondays 9-12am

Location:

HW408

Textbook:

None, readings will be provided.

However, 'Biological Diversity' by Magurran and McGill (2011) and any introduction to R book

Exams:

Final: TBA

Project:

Presentation and paper

Professor:

Marc Cadotte

Office: Science Wing 542

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:

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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 Blackboard by noon the day before the lecture. You should familiarize yourself with Blackboard and its contents, as 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

Participation (10): All students are expected to participate in discussions and ask questions, and post questions or answers on discussion board.

Small R project (15): All students will analyse diversity measures on a set of communities (Due Oct 11).

Big presentation (20): All students will present (15 min) their final paper during one of the last two classes.

Paper (25): All students will complete a final paper (Due Nov. 22nd, see lecture 1 for details).

Final exam (30): The 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.

Date	Lecture	Topic	Readings
09-Sep		<u>1</u> • What do we mean by diversity? • Measuring diversity • Thinking about causes	• Magurran & McGill Chps 5 & 6
16-Sep		<u>2</u> • R	R-tutorial
23-Sep		<u>3</u> • Measuring diversity, data matrices	• VEGAN
30-Sep		<u>4</u> • Niche vs neutral • Species differences • Meta-communities	• Chesson 2000 • Leibold et al. 2004
07-Oct		<u>5</u> • Interface of ecology and evolution • Phylogenetic community patterns	• Cavender-Bares 2009 • book chapter
14-Oct	READING	WEEK	
21-Oct		<u>6</u> • Functional diversity	• McGill et al. 2005 • Cadotte et al. 2011 -appendix
28-Oct		<u>7</u> • Biotic homogenization/ Anthropogenic changes • Biological Invasions	• Lin et al. 2011 • Olden et al. 2004 • Brym et al. 2011 • MacDougall et al. 2009
04-Nov		<u>8</u> • Biodiversity & Ecosystem function • FD and PD on ecosystem function	• Loreau & Hector 2001 • Cardinale et al. 2006 • Cadotte 2013
11-Nov		<u>9</u> • Urban Ecology & maintaining function in a urbanized world	• Urban reader
18-Nov		<u>10</u> • NO CLASS -work on projects	
25-Nov		<u>11</u> • Final pres	
02-Dec		<u>12</u> • Final pres	

*underscored lecture numbers indicate sessions where we'll do R programming in class.