



FORDHAM UNIVERSITY

THE JESUIT UNIVERSITY OF NEW YORK

## ECOLOGY

**BISC 2561 – Department of Biological Sciences**

**Fordham University, Fall 2014**

**2:30–3:45 pm Tuesday & Friday; Larkin Hall 170**

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<b>Instructors:</b>	Prof. Jason Munshi-South, Biological Sciences & Calder Center Prof. Sergios-Orestis Kolokotronis, Biological Sciences
<b>Office:</b>	Larkin Hall, Room 400 (JMS) & Room 330 (SOK)
<b>Online Contacts:</b>	<a href="mailto:jmunshisouth@fordham.edu">jmunshisouth@fordham.edu</a> ; <i>Twitter</i> : @urbanevol; <a href="http://nycevolution.org">http://nycevolution.org</a> <a href="mailto:skolokotronis@fordham.edu">skolokotronis@fordham.edu</a> ; <i>Twitter</i> : @sokolokot; <a href="http://kolokolab.org">http://kolokolab.org</a>
<b>Phone:</b>	JMS: 718-817-0534, SOK: 817-817-3672
<b>Office Hours:</b>	JMS: MW 2:30-4:00 PM; SOK: T 4-5pm, W 2-4pm

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**Required Textbook:** *The Economy of Nature*, 6<sup>th</sup> edition. Robert E. Ricklefs, 2008. W.H. Freeman and Co., New York (ISBN: 0-7167-8697-4; ISBN-13: 978-0-716-78697-9). <http://goo.gl/i5XtFo>

**Course focus:** The principles, practice and application of the science of ecology. Topics will include adaptation and evolution, ecological genetics, population dynamics, species interactions, nutrient cycling, conservation ecology and the ecological impacts of climate change.

**Course objectives:**

- 1) Understand what ecology is, how it is studied and how it relates to our lives and our future.
- 2) Gain an overview of ecological principles.
- 3) Learn how to view the natural world from an ecological perspective.
- 4) Understand humans as part of nature and our impact on ecosystems.

**Course philosophy:** This course is intended for upper-division biology majors and as such will be academically rigorous and intellectually challenging. Every student has an individual responsibility to engage with the material. If you have any problems or questions at all at any time during the course, please talk to me or to one of the TA's. We are here to help you learn, and we want you to succeed!

**Grading:** The objective of the exams will be to determine each student's comprehension and mastery of the material. The exams will be a combination of short answer and essay questions which will involve not only fact recall but also problem-solving, scientific reasoning, and critical thinking about ecology and ecological issues. It is thus strongly advised that students continually develop a deeper understanding of the subject not only by attending lectures and reading the textbook but also by asking questions in class and office hours, utilizing study materials available on the course web page (<http://fordham.blackboard.com>), and studying both independently and in groups throughout the course and well before each exam.

There will be **two midterm exams each worth 25%** of the grade and **one final exam worth 30%** of the grade. The final exam is comprehensive and will cover all material in the course. There will also be **1 short paper and 1 assignment each worth 10%** of the final grade (details will follow later). There will not be graded homework, quizzes or extra credit. There will not be make-up exams except in the case of extremely extenuating circumstances and then only with proper documentation and pending approval by a dean. The course grade is straight-scale rather than curved. For the course



grade, A: 93-100; A-: 90-92; B+: 87-89; B: 83-86; B-: 80-82; C+: 77-79; C: 73-76; C-: 70-72; D: 60-69; F: below 60. Effort and participation are considered in borderline cases.

**Grading Summary**

<u>Assignment</u>	<u>% of Total Points</u>
Midterm Exam 1	25%
Midterm Exam 2	25%
Short paper	10%
Short assignment	10%
Final Exam	30%
Total	100%

**Sustainable Class Activities:**

- asking questions before, during, or after class
- offering constructive feedback on the class, positive or negative
- inquiring about research experiences and other opportunities in environmental science

**Unsustainable Class Activities:**

- arriving late or leaving early
- distracting or bothering other classmates during the lecture
- texting, IM'ing, e-mailing, etc.
- cheating / plagiarism (will be met with swift and harsh punishment)

**Code of Conduct:** We value Fordham's Code of Conduct (<http://tinyurl.com/bxdztyb>) for the integrity it fosters. All exams and assignments in this class are to be completed in accordance with said Code.

**Computer Use Policy:** Students are welcome to use laptop computers to take notes during class. To minimize the inconvenience to others in the room, please adhere to the following guidelines when using a computer in class:

1. You should arrive with your laptop battery fully charged. Please do not plug a power cord into one of the wall outlets because the cord will stretch across one of the aisles that students use to enter and exit the room, creating a tripping hazard.
2. Turn your computer on before you enter the classroom. Turn the speakers off.
3. Laptops can be used only for the purpose of taking notes during class. Unrelated Internet browsing, work unrelated to this class, social networking, E-mailing, and Instant Messaging are not permitted.
4. Be respectful and avoid distracting classmates who choose not to use laptops. Laptop users, please take a seat in the right side of the classroom.

Students who do not follow these guidelines will lose their computer use privileges for the balance of the semester. There is no mobile phone use allowed in the classroom; this includes smartphones. No photography or recording is allowed, unless you have the instructor's permission.



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**Notes on Grading:**

- Your grades are earned by your knowledge as measured by performance on exams, labs, and other assignments. Grades are not assigned by negotiation or haggling with the professor, solely by how hard you worked in class, or by your “need” for a specific grade to graduate, apply to medical school, etc.
- Grades are not an indication of your value as a person or whether or not we like you.
- There is no such thing as “extra credit” in this course.
- Life will go on even if you did not earn the grade you anticipated at the beginning of this course.
- There is no curve in this course. We may slightly bump up grades of students if they are near the border of two grades (e.g. C and C+), if they attended class regularly and participated, although any such change is entirely at our discretion.



**Course Schedule (Note: *Subject to Change*)**

Date	Instructor	Topic	Chapters
F 9/5	JMS	Course overview. What is Ecology & why does it matter?	1
T 9/9	JMS	Ecological Medicine	Paper
F 9/12	JMS	Urban Ecology / Human-caused change & Evolution	Paper
T 9/16	JMS	Adaptations to the physical environment	2,3
F 9/19	JMS	Behavioral Ecology & Life History	6
T 9/23	JMS	Evolution I Behavioral Ecology & Life History Evolution II <b>First Paper Due</b>	7
F 9/26	JMS	Sexual selection	8
T 9/30	JMS	Kin selection	9
F 10/3	JMS	Catch-up	-
T 10/7	JMS	<b>MIDTERM I</b>	-
F 10/10	JMS	Population Genetics	
T 10/14	JMS	Population structure	10
F 10/17	JMS	Population dynamics & population modeling I	11
T 10/21	JMS	Population dynamics & population modeling II	12
F 10/24	SOK	Predator-prey interactions I	14
T 10/28	SOK	Predator-prey interactions II	15
F 10/31	SOK	Competition	16
T 11/4	SOK	Mutualism & coevolution	17
F 11/7	SOK	<b>MIDTERM II</b>	-
T 11/11	SOK	Community structure	18
F 11/14	SOK	Community dynamics & succession	19
T 11/18	SOK	Biodiversity & biogeography <b>Writing Assignment DUE</b>	20
F 11/21	SOK	Energy in ecosystems	22
T 11/25	SOK	Nutrient cycling	23
F 11/28	-	<b>NO CLASS – THANKSGIVING BREAK</b>	-
T 12/2	SOK	Nutrient regeneration	24
F 12/5	SOK	Special topics in ecology; overview & synthesis	-
T 12/9	SOK	Catch up	-
12/15-22	SOK	<b>Final Exams</b>	All

\*If you believe that you have a disability that may interfere with your ability to participate in the activities, coursework, or assessment of the object of this course, you may be entitled to accommodations. Please schedule a meeting to speak with someone at the Office of Disability Services (Rose Hill, O'Hare Hall, Lower Level, x0655; Lincoln Center, Lowenstein 207, x6282; [www.fordham.edu/dss](http://www.fordham.edu/dss) & [disabilityservices@fordham.edu](mailto:disabilityservices@fordham.edu)).