

LaGuardia Community College, The City University of New York- Spring I Semester, 2014

**COURSE SYLLABUS- SCB 265, Fundamentals of Ecology**  
**Dr. Holly A. Porter Morgan**

**Lecture Discussion Meetings:** Tuesday, 9:15-11:30am and Thursday, 10:30-11:30am (Room E-502)

**Laboratory Meetings:** Thursday, 11:45am-3:15pm (Room E-329)

**Lecture Notes and other Materials:** On Blackboard

**Office:** M221D

**Office Hours:** Tuesday 2:00am-4:30pm and Thursday 3:30pm-4:30pm, or by appointment.

**Email:** [hollyportermorgan@gmail.com](mailto:hollyportermorgan@gmail.com)

**Course Materials:**

1. **Textbook:** *Elements of Ecology* 8th edition (2012) by Smith and Smith; Pearson Benjamin Cummings, San Francisco, CA. ISBN: 978-0321736079
2. **Laboratory Manual:** *Ecology on Campus* (2006) by Kingsolver, Pearson Benjamin Cummings Custom Publishing, Boston, MA. You must bring the lab manual to every lab session. ISBN: 978-0805382143
3. **Safety Goggles:** All students are required to bring safety goggles (available in the Bookstore) to every laboratory session. You will not be permitted to remain in the lab and perform experiments without them and will be marked absent.

**Course Description:**

This course is a comprehensive introduction to ecology. Students will be introduced to the types of questions asked by ecologists, the principal concepts and theories that guide ecological inquiry, and the methods that are used to answer ecological questions. Particular emphasis will be paid to population, community, and ecosystem level processes. Both terrestrial and aquatic systems will be considered. The practical component of the course will include laboratory exercises, as well as field trips.

**Grading**

The total grade is determined as follows:

5 Lecture Exams at 9% each	45%
Weekly Homework	15%
Lab Book/Lab Reports/Lab Homework	30%
Lab Final	<u>10%</u>
	100%

**Exams:**

Exams will be taken on the date they are listed on the lecture schedule. Any student who is more than more than 15 minutes late will **NOT** be able to take the exam and will receive a **zero** for that exam.

**Make-up Policy:**

There will be NO scheduled make-up exams. If a student has a valid excuse and must miss an exam, the professor must be informed BEFORE the exam. If the student brings a doctor's note or other written proof of why they missed the exam (accident report, etc.), a separate exam may be made available at a time and date determined by the professor. Otherwise, the student will receive a zero for that exam.

**Attendance Policy:**

Attendance at all laboratory and lecture sessions is essential for understanding and mastery of the course material. A student who is absent from more than one laboratory session seriously jeopardizes his/her grade for the course. If you choose to be absent or late, you choose the grade that result from this action. Do not ask the professor to repeat announcements or course materials if you are late. If you have an emergency or choose not to attend class, it is your responsibility to check the syllabus, to retrieve the associated materials from Blackboard, and to discuss what you missed with other students.

Note that not all of the information in the textbook can be presented during the allotted lecture time. However, you are responsible for all of the information in the assigned chapters, as well as any additional material presented by the professor during lectures. While they may not cover all the assigned material and may include material from sources other than the textbook, the lectures are intended to give an overview of the lecture topics and to cover material that may benefit from extra emphasis and discussion.

**Rules of Class Behavior:**

Students are required to communicate with the instructor and other students in proper professional English in speech and in writing at all times- no abbreviations, no text-message slang, no use of all lowercase or uppercase, a proper greeting is required (for example, you should write 'Dear Professor', not 'Hey Prof'). If you do not know how to write a proper email, see the following website for netiquette rules- [www.albion.com/netiquette/corerules.html](http://www.albion.com/netiquette/corerules.html). No emails without a subject line will be opened.

During lecture and laboratory, no texting or other cell phone use is allowed. All phones should be set to vibrate prior to the start of class and placed IN YOUR BAG. The outlets in the laboratory are not to be used for plugging in cell phones.

**Cheating:**

The College's regulations regarding cheating will be strictly enforced. Review the definition of plagiarism and remember that if you use another person's words or ideas, you must cited them in your work. You can find more information here: <http://wpacouncil.org/files/wpa-plagiarism-statement.pdf>

Be aware of the consequence for plagiarizing and other forms of cheating. The CUNY policy on academic integrity is available at the following address:

<http://library.laguardia.edu/files/pdf/academicintegritypolicy.pdf>

**Contacting your Professor:**

The best method for contracting your professor is via email at [hollyportermorgan@gmail.com](mailto:hollyportermorgan@gmail.com). Emails will be answered within 24 hours. Weekend emails will be responded to by Monday afternoon of the following week. You are also welcome to attend the office hours, listed at the beginning of the syllabus.

**Schedule:** Lecture - Tuesday, 9:15-11:30am and Thursday, 10:30-11:30am (Room E-502)  
Laboratory - Thursday, 11:45am-3:15pm (Room E-329)

S&S = Smith and Smith, Element of Ecology textbook

Ki= Kingsolver, Ecology on Campus, lab manual

<u>Date/Week</u>	<u>Activities</u>
<p><b>Week 1: Tuesday</b> March 4</p>	<p><b><u>Lecture Topics:</u></b> Introduction to Ecology; Climate  <b><u>Read Before Class:</u></b> Ch. 1, 2 in S&amp;S</p>
<p><b>Week 1: Thursday</b> March 6</p>	<p><b><u>Lecture Topics:</u></b> The Aquatic Environment  <b><u>Read Before Class:</u></b> Ch.3 in S&amp;S</p> <p><b><u>Laboratory Topics:</u></b> Discuss lab book requirements.  Water quality sampling in a tidal estuary.  Sampling of water for dissolved oxygen, pH,  temperature, and turbidity.</p> <p><b><u>Before Lab To Read:</u></b> pp. 361-368 (Ch. 16, Ki) and pp. 383-388 (Ch.17, Ki)</p> <p><b><u>In Lab To Complete:</u></b> Field trip</p>
<p><b>Week 2: Tuesday</b> March 11</p>	<p><b><u>Lecture Topics:</u></b> The Terrestrial Environment; Ecological Genetics  <b><u>Read Before Class:</u></b> Ch. 4, 5 in S&amp;S</p>
<p><b>Week 2: Thursday</b> March 13</p>	<p><b><u>Lecture Topics:</u></b> Plant Adaptations to the Environment  <b><u>Read Before Class:</u></b> Ch.6 in S&amp;S</p> <p><b><u>Laboratory Topics:</u></b> Properties of soils; Dissolved oxygen and temperature</p> <p><b><u>Before Lab To Read:</u></b> pp. 337-352 (Ch.15, Ki); pp. 361-372 (Ch.16, Ki)</p> <p><b><u>In Lab To Complete:</u></b> pp. 347-352, Method A, Procedures 1-2 (Ch.15, Ki)  pp. 369-372, Method A (Ch.16, Ki)  Questions 1 and 2, pp. 352 (Ch.15, Ki)  Questions 1, 2, and 5, pp. 372 (Ch.16, Ki)</p>

**LECTURE EXAM 1: (Ch. 1, 2, 3, 4, 5, 6)****Week 3: Tuesday**

March 18

**Lecture Topics:** Animal Adaptations to the environment**Read Before Class:** Ch.7 in S&S**Lecture Topics:** Properties of Populations**Read Before Class:** Ch.8 in S&S**Laboratory Topics:** Finish field capacity of soil exercise; Describing populations: Seed weight in legumes; Allometric relationships: modeling size and shape relations**Before Lab To Read:** pp. 1-20 (Ch.1, Ki); pp. 23-30 (Ch.2, Ki)**In Lab To Complete:** Finish pp. 350-351, Method A, Procedure 2 (Ch.15, Ki)

pp. 10-20 , Method A, (Ch.1, Ki)

pp. 28-30. Method A, Procedure 1 (Ch.2, Ki)

Questions 3 and 4, pp. 352 (Ch.15, Ki)

Questions 1, 2, and 3, pp. 20 (Ch.1, Ki)

Questions 1, 2, 3, and 4, pp. 30 (Ch.2, Ki)

**Week 3: Thursday**

March 20

**Week 4: Tuesday**

March 25

**Lecture Topics:** Population Growth**Read Before Class:** Ch.9 in S&S**Lecture Topics:** Life History Patterns**Read Before Class:** Ch. 10 in S&S**Laboratory Topics:** Population growth: population growth in yeast**Before Lab To Read:** pp. 65-79 and pp. 83-89 (Ch.4., Ki)**In Lab To Complete:** pp. 75, Method A (Ch.4, Ki)  
pp. 83-88, Method C (Ch.4, Ki)

Questions 1, 2, 3, and 4, pp. 79 (Ch.4, Ki)

Questions 1, 2, 3, and 4, pp. 89 (Ch.4, Ki)

**Week 4: Thursday**

March 27

<p><b>Week 5: Tuesday</b> April 1</p>	<p><b><u>Lecture Topics:</u></b> Intraspecific Population Regulation; Metapopulations <b><u>Read Before Class:</u></b> Ch. 11, 12 in S&amp;S</p>
<p><b>Week 5: Thursday</b> April 3</p>	<p><b><u>Lecture Topics:</u></b> Metapopulations continued <b><u>Read Before Class:</u></b> Ch. 12 in S&amp;S</p> <p><b><u>Laboratory Topics:</u></b> Demography and Life History: Cemetery Demographics</p> <p><b><u>Before Lab To Read:</u></b> pp. 91-122 (Ch.5, Ki)</p> <p><b><u>In Lab To Complete:</u></b> pp. 111-122. Method B (Ch.5, Ki) Questions 2 and 4, pp. 122 (Ch.5, Ki)</p>
<p><b>Week 6: Tuesday</b> April 8</p>	<p><b><u>LECTURE EXAM 2: (Ch. 7, 8, 9, 10, 11, 12)</u></b></p> <p><b><u>Lecture Topics:</u></b> Species Interactions, Interspecific Competition <b><u>Read Before Class:</u></b> Ch. 13, 14 in S&amp;S</p>
<p><b>Week 6: Thursday</b> April 10</p>	<p><b><u>Lecture Topics:</u></b> Interspecific Competition continued <b><u>Read Before Class:</u></b> Ch.14 in S&amp;S</p> <p><b><u>Laboratory Topics:</u></b> Competition</p> <p><b><u>Before Lab To Read:</u></b> pp. 219-235 (Ch.10, Ki)</p> <p><b><u>In Lab To Complete:</u></b> pp. 241. Method C. (Ch.10, Ki) Questions 1, 2, 3, and 4, pp. 241 (Ch.10, Ki)</p>
<p><b>Week 7: Thursday</b> April 24</p>	<p><b><u>SPRING BREAK - April 15-April 2</u></b>      <b><u>No Classes</u></b></p> <p><b><u>Lecture Topics:</u></b> Predation <b><u>Read Before Class:</u></b> Ch.15 in S&amp;S</p> <p><b><u>Laboratory Topics:</u></b> Predators and Prey</p> <p><b><u>Before Lab To Read:</u></b> pp. 243-257 and pp. 267-271 (Ch.11, Ki)</p> <p><b><u>In Lab To Complete:</u></b> pp. 267-271. Method C. (Ch.11, Ki) Questions 1, 2, 3, and 5, pp. 271 (Ch.11, Ki)</p>

<p><b>Week 8: Tuesday</b> April 29</p>	<p><b><u>Lecture Topics:</u></b> Parasitism and Mutualism; Community Structure <b><u>Read Before Class:</u></b> Ch.16, 17 in S&amp;S</p>
<p><b>Week 8: Thursday</b> May 1</p>	<p><b><u>Lecture Topics:</u></b> Community Structure continued <b><u>Read Before Class:</u></b> Ch.17 in S&amp;S</p> <p><b><u>Laboratory Topics: Field trip:</u></b> Terrestrial Communities</p> <p><b><u>Before Lab To Read:</u></b> pp. 177-183 (Ch.8, Ki)</p> <p><b><u>In Lab To Complete:</u></b> Field trip</p>
<p><b>Week 9: Tuesday</b> May 5</p>	<p><b><u>LECTURE EXAM 3: (Ch. 13, 14, 15, 16, 17)</u></b></p> <p><b><u>Lecture Topics:</u></b> Factors Influencing the Structure of Communities; Community Dynamics: Succession</p> <p><b><u>Read Before Class:</u></b> Ch. 18, 19 in S&amp;S</p>
<p><b>Week 9: Thursday</b> May 8</p>	<p><b><u>Lecture Topics:</u></b> Community Dynamics: Succession continued</p> <p><b><u>Read Before Class:</u></b> Ch.19 in S&amp;S</p> <p><b><u>Laboratory Topics:</u></b> Estimating Population Size; Spatial Pattern</p> <p><b><u>Before Lab To Read:</u></b> pp. 52-57 and 63 (Ch.5, Ki); pp.159-164 (Ch.7, Ki)</p> <p><b><u>In Lab To Complete:</u></b> pp. 56. Method A. (Ch.5, Ki); Spatial Patterns Handout Questions 1, 2, 3, 4, and 5, pp. 57 (Ch.5, Ki); Spatial Patterns Handout</p>
<p><b>Week 10: Tuesday</b> May 13</p>	<p><b><u>Lecture Topics:</u></b> Landscape Ecology</p> <p><b><u>Read Before Class:</u></b> Ch. 20 in S&amp;S</p>

<p><b>Week 10: Thursday</b> May 15</p>	<p><b><u>Lecture Topics:</u></b> Ecosystem Energetics  <b><u>Read Before Class:</u></b> Ch. 21 in S&amp;S</p> <p><b><u>Laboratory Topics:</u></b> The Community Concept</p> <p><b><u>Before Lab To Read:</u></b> 199-204 (Ch 9, Ki)</p> <p><b><u>In Lab To Complete:</u></b> Field trip</p>
<p><b>Week 11: Tuesday</b> May 20</p>	<p><b><u>LECTURE EXAM 4: (Ch. 18, 19, 20, 21)</u></b></p> <p><b><u>Lecture Topics:</u></b> Decomposition; Biogeochemical Cycles</p> <p><b><u>Read Before Class:</u></b> Ch. 22, 23 in S&amp;S</p>
<p><b>Week 11: Thursday</b> May 22</p>	<p><b><u>Lecture Topics:</u></b> Biogeochemical Cycles continued</p> <p><b><u>Read Before Class:</u></b> Ch.23 in S&amp;S</p> <p><b><u>Laboratory Topics:</u></b> Biodiversity: measuring invertebrate biodiversity</p> <p><b><u>Before Lab To Read:</u></b> pp. 299-308 and pp. 310-317 (Ch.13, Ki)</p> <p><b><u>In Lab To Complete:</u></b> pp. 310 or 312, Method B. or C. (Ch.13, Ki)  Questions 2, 3, and 4, pp. 316 (Ch.5, Ki); Handout on Measuring Biodiversity</p>
<p><b>Week 12: Tuesday</b> May 27</p>	<p><b><u>Lecture Topics:</u></b> Terrestrial Ecosystems; Aquatic Ecosystems  <b><u>Read Before Class:</u></b> Ch. 24, 25 in S&amp;S</p> <p>Terrestrial Ecosystems; Aquatic Ecosystems Ch. 24, 25 in S&amp;S</p>
<p><b>Week 12: Thursday</b> May 29</p>	<p><b><u>Lecture Topics:</u></b> Coastal and Wetland Ecosystems</p> <p><b><u>Read Before Class:</u></b> Ch. 26 in S&amp;S</p> <p><b><u>Before Lab To Read:</u></b> pp. 273-280 (Ch. 12)</p> <p><b><u>Laboratory Topics:</u></b> Mutualism video; Review for Lab Final</p>

<b>Week 13: Tuesday</b> June 3	<b><u>Lecture Topics:</u></b> Large-Scale Patterns of Biological Diversity <b><u>Read Before Class:</u></b> Ch. 27 in S&S
<b>Finals Week: Tuesday</b> June 10	<b><u>LECTURE EXAM 5:</u></b> (Ch. 22, 23, 24, 25, 26, 27)
<b>Finals Week: Thursday</b> June 12	<b><u>LAB FINAL:</u></b>

\* Laboratory attendance is mandatory. \*\* Read the entire laboratory exercise prior to entering laboratory.