**BIOLOGY 200 – Concepts in Biology**

**INSTRUCTORS & OFFICE HOURS:**
Caroline Devan (cmd26@njit.edu), CKB 337, Wed 11:00 - 12:00 & Thurs 10:00 - 12:00, or by appointment
Andrew Mashintonio (amash03@gmail.com), CKB 337D, Tues 10:00-11:30 & Thurs 1:00-2:30, or by appointment
Maria Stanko (mstanko@njit.edu), CKB 340E, Mon 2:00-4:00pm, or by appointment

**STUDY SUPPORT OFFICE HOURS:**
Liz Cronin (ec83@njit.edu), CKB 331B
Wed 3:00-4:30 & Fri 12:00-1:30

**COURSE MEETINGS:**
Lecture-
Mon/Wed 11:30am-12:55pm GITC OR
Tue/Th  11:30am-12:55pm CKB 303 OR
Tue/Th  2:30pm-3:55pm CKB 303
Recitation – Various Th or Fri (by section)
For the correct times for your section, see:

**COURSE WEBSITES:**
moodle.njit.edu

**LOCATION:**
Central King Building or GITC
www.njit.edu/about/visit/njit-maps.php

**Course Description:**
This course will introduce students to the study of biology at the beginning of their course of study. Central ideas in the biological sciences will be highlighted, with an emphasis on the process of scientific discovery and investigation. The course will provide the basis for more advanced coursework and learning experiences in biological sciences as students delve into the curriculum of study. This is a required course for all NJIT and Rutgers-Newark Biology majors.

**Required Materials:**
An iClicker is also required for this course. You can purchase one from the NJIT or Rutgers campus bookstore. Any version of an iClicker brand device is acceptable.
This course has no textbook. Course readings and online resources will generally be provided via Moodle.
Please ensure you can access the Moodle as soon as possible!

**Grading Policy:**
Your grade for this course will be determined based on a number of components (the breakdown is on the right).

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture Participation</td>
<td>65</td>
</tr>
<tr>
<td>Assignments/Quizzes</td>
<td>120</td>
</tr>
<tr>
<td>Exams</td>
<td>80</td>
</tr>
<tr>
<td>Projects</td>
<td>80</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>380</strong></td>
</tr>
</tbody>
</table>

**Grading Scale**
- **A**  >90%
- **B+**  85-90%
- **B**  80-85%
- **C+**  75-80%
- **C**  70-75%
- **D**  60-70%
- **F**  <60%

**Attendance, Make-up, and Lateness Policy:**
Lectures and recitations are linked, and attendance at all course sessions is important to doing well in the course. Attendance at recitations is required. If you must miss recitation for a valid reason, please discuss making up the missed material with your recitation instructor as soon as possible.

**Late assignments will be deducted 10% of the points available for each 24 hours after the assignment was due.** This is true for ALL assignments.
**Schedule:** Dates listed by week; lectures will meet twice every week and recitation will meet every week, unless otherwise noted. Please note that this is the proposed schedule and is subject to change. A more detailed schedule will be continually updated via the course Moodle site.

<table>
<thead>
<tr>
<th>Week of</th>
<th>Lecture Topic</th>
<th>Recitation</th>
<th>Assignments Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/31</td>
<td><strong>Mon - No Lecture</strong>&lt;br&gt;Intro: Learning Styles, Class purpose, Goals</td>
<td>Discussion on Intelligence</td>
<td>HW1 - Syllabus (5pts)</td>
</tr>
<tr>
<td>9/7</td>
<td>Graphing/Numbers &amp; Figures Science Writing</td>
<td>Interpreting graphs</td>
<td>PreQuiz on Moodle&lt;br&gt;Finish graph for recitation this week</td>
</tr>
<tr>
<td>9/14</td>
<td>Ethics&lt;br&gt;What Is Biology?</td>
<td>Ethics case studies</td>
<td></td>
</tr>
<tr>
<td>9/21</td>
<td>Evolution/Natural Selection Adaptation/Fitness</td>
<td>Selection: dogs and peacock:Quiz on Moodle</td>
<td>HW2 Ethics response (10pts)</td>
</tr>
<tr>
<td>9/28</td>
<td>What is flu?&lt;br&gt;DNA Discovery/Structure</td>
<td>White-nose syndrome</td>
<td>HW3 Selection assignment (10pts)&lt;br&gt;Project 1, Part 1</td>
</tr>
<tr>
<td>10/5</td>
<td>DNA&lt;br&gt;Transcription/Translation</td>
<td>Decoding the flu</td>
<td>HW4 Bird flu (10 pts)&lt;br&gt;Project 1, Part 2</td>
</tr>
<tr>
<td>10/12</td>
<td>Mutations&lt;br&gt;Phylogenetic Trees</td>
<td>Molecular phylogenetics</td>
<td>Project 1, Part 3</td>
</tr>
<tr>
<td>10/19</td>
<td>Exam 1&lt;br&gt;What is DFTD?</td>
<td>Discuss Exam 1 DFTD</td>
<td></td>
</tr>
<tr>
<td>10/26</td>
<td>DNA Replication Cell Division</td>
<td>Copying DNA</td>
<td>HW5 Graphing population changes (10pts)&lt;br&gt;Project 1, Part 4</td>
</tr>
<tr>
<td>11/2</td>
<td>Cancer&lt;br&gt;Population Genetics</td>
<td>Cancer exercise</td>
<td>Quiz on Moodle&lt;br&gt;Project 2, Part 1</td>
</tr>
<tr>
<td>11/9</td>
<td>Meiosis&lt;br&gt;Inheritance</td>
<td>Pedigree worksheet</td>
<td>Project 2, Part 2</td>
</tr>
<tr>
<td>11/16</td>
<td>Interactions / Competition&lt;br&gt;Predation / Trophic Cascades</td>
<td>Tasmanian food web</td>
<td>HW6 Pedigrees (10 pts)</td>
</tr>
<tr>
<td>11/23</td>
<td>Community diversity&lt;br&gt;&lt;br&gt;<strong>Wed/Th - No Lecture</strong></td>
<td>NO Recitations</td>
<td></td>
</tr>
<tr>
<td>11/30</td>
<td>Life History Strategies</td>
<td>Tasmanian devil life history</td>
<td>Project 2, Part 3&lt;br&gt;Quiz on Moodle</td>
</tr>
<tr>
<td>12/7</td>
<td>Other examples: Ebola</td>
<td>NO Recitations</td>
<td>HW7 – Ebola readings questions (10 pts)&lt;br&gt;PostQuiz on Moodle</td>
</tr>
<tr>
<td>12/15-21</td>
<td>Exam 2 - During Final Exam Week</td>
<td>NO Recitations</td>
<td>Project 2, Part 4</td>
</tr>
</tbody>
</table>
Academic Dishonesty:
The course has a zero tolerance policy for academic dishonesty, including plagiarism and cheating. Instances of dishonesty will be punished by a zero on the assignment, and consultation with the office of the Dean of Students to determine if further action is required. If you have any questions about what constitutes plagiarism or cheating, please ask or refer to the academic integrity code: http://www.njit.edu/academics/integrity.php

Learning Outcomes:

1. Learning How to Learn
   • Students will develop personal learning strategies based on recognition of their own learning processes.
   • Students will identify their learning style and develop a learning plan that is aligned with that style.
   • Students will reflect on the note taking and study process and self-monitor their habits throughout the semester.
   • Students will develop a plan for their continued learning beyond this course.

2. Application
   • Students will develop hypotheses to explain observed phenomena.
   • Students will design a basic experiment to test a hypothesis, taking into account the ethical and methodological considerations for proper experimental design.
   • Students will read and evaluate data critically:
     • identify and describe patterns in raw data.
     • interpret statistical analysis of others’ results.
     • draw conclusions based on graphical presentation of data.
   • Students will communicate scientific information effectively:
     • present source material without plagiarizing.
     • convey information in written and graphical form.
     • target delivery appropriately to audience.

3. Integration
   • Students will synthesize ideas from multiple areas in order develop complex concepts.

4. Human Dimension
   • Students will feel confident in their ability to apply knowledge to solve problems.
   • Students will cooperate with their peers to solve problems as part of a team.
   • Students will take responsibility for their learning process and academic success.

5. Caring/Valuing
   • Students will get excited about the value of course material within their personal and professional lives.
   • Students will commit to being a good learner in this course and beyond.

Individual class sessions will have more specific content outcomes, based on what is being discussed that week and how it relates to the larger goals of the course. Look for those to be posted to Moodle and contained in the lecture slides for that topic.