BIOL 100 Syllabus – GENERAL BIOLOGY – Fall 2013

Course overview: General Biology (BIOL 100) is an introductory biology course for non-majors. It is a three-unit course consisting of lectures given twice a week. As a General Biology course, it is intended to give the students a basic view on the importance of Biology not only in Science but in everyday’s world. The course is intended to provide basic knowledge in Biology and students will gain both background and hopefully interest in the broad field of Life, Organisms, Evolution, Genetics, Ecology, and even Biotechnology, setting the foundation for a lasting knowledge on the basics of the biological world that surrounds us.

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Important
- If you need to contact me by E-mail, please write BIOL 100 in the subject line and mention ‘class issues’ or ‘personal issues’ on the title of your message
- Registration with Top Hat is mandatory (see below)

Class Hours: Tuesdays 03:30pm-06:10pm
Office Hours: W/TH 10:00am-11:00am
Classroom: ENS 280

Content/topics:
- Course Info / Introduction to General Biology / Science and Life
- The Diversity of life
- The Major Groups of Organisms
- The Building Blocks of Life
- The Cell In and Out
- Cell Communication
- Energy and Enzymes
- Photosynthesis
- Cellular Respiration
- What is DNA
- Cell Division
- The Central Dogma
- Control of Gene Expression
- Inheritance and Genetics
- DNA technology
- What is Evolution
- Evolution of Populations
- Adaptation and Speciation
- Population Growth
- Interactions between Organisms
- Ecosystems
- History of Life
**Student learning outcomes:**

- At the end of BIOL 100 students will:
- Gain basic understanding on the importance of Biology in everyday’s life
- Understand the definition of life and the living organism
- Learn about the complexity of the biological world
- Study the main biomolecules of Life
- Understand the importance of the central dogma of biology
- Compare the prokaryotic and eukaryotic cell
- Understand the basic principles of Genetics and inheritance
- Study Evolution and the origin of species
- Understand the basic principles of energy at the cellular level
- Understand how complex the globe is and how organisms influence the ecosystem

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**Special needs:** If you are in need of any disability accommodation, please contact the instructor at the beginning of the semester.

**Required pre-requisites:** This is a non-major course. There are no pre-requisites, but be advised, Biology for many is a very different language and might be overwhelming for some. Be prepared for a fascinating, but not necessarily easy course.

**Office hours:** Office hours are set for Wednesdays and Thursdays from 10:00am to 11:00am. If you absolutely can not make it to office hours, you can send me an e-mail to set an appointment.

**Emails:** You are free to contact me. For issues regarding material taught in class, please specify BIOL 100 ‘class issues’. For private / personal issues, please specify BIOL 100 ‘personal issues’. This will allow me to set up a not-necessarily-private meeting when class-related, and a private meeting for personal issues. In the former, students with ‘class’ related questions can receive input from each other’s questions. The latter will ensure that confidentiality is not compromised.

**Course material, announcements and updates:** Announcements and any supplementary material will be posted on Blackboard (https://blackboard.sdsu.edu/webapps/login). The lectures will be posted prior to class as a PDF file. It is the student’s responsibility to check Blackboard regularly for updates.

**Registration with Top Hat is mandatory:** This replaces the i>Clickers. With Top Hat, students use the phones and devices they already own to interact with the professor. Top Hat will be used for attendance purposes and for answering questions throughout the course. It is the responsibility of the student to register during the first week of classes if you did not register prior to the first day of classes. As subscriptions are for four months ($20) or five years ($38), you should not register too far before your course starts if you take the four-months option.

Please visit tinyurl.com/StudentStartGuide for the Student Quick Start Guide which outlines how you will register for a Top Hat account, as well as providing a brief overview to get you up
and running on the system. Once you have registered and entered in your subscription code, your course can be directly accessed via the following:

**Top Hat course name:** BIOL 100  
**Direct URL:** [https://app.tophat.com/e/197219](https://app.tophat.com/e/197219)  
**6-digit course code:** 197219

For more information go to [https://tophat.com/tour](https://tophat.com/tour)

**Textbook:** The lectures will be based mainly on the book ‘Discover Biology’ by Cain, Yoon and Singh-Cundy, Sixth Edition. This is the ‘Core Topics’ edition. Copies of the book are available at the bookstore. Both bound and unbound copies are available. There is also the possibility of purchasing electronic copies of each chapter for a low $ amount. Material not appearing in the books will be posted when needed.

**Classroom:** The assigned classroom for this course is at Exercise and Nutritional Sciences ENS 280. It is a ‘smart’ class.

**Attendance:** Attendance is mandatory. I do not intend to be a policeman. Nevertheless, attendance will be determined with the use of clickers. I remind you: attending the class is not only compulsory, but also good for you and the best way to incorporate the knowledge learned from the book. The instructor may add points at the end of the course for excellent attendance.

**Learning, or ‘how should I learn?’** Learning and the learning process is a very personal issue. However, it is a process that can be learned and improved with time. It is relevant for Biology or Computer Science, Theater or Dance or choosing the right restaurant. But some advice can be given. Read the material you are asked to read. Read before class rather than afterwards; you will enjoy the class more. Read in order to know, not to ‘finish your homework’. Read in order to open your mind. Read for yourself and not for the instructor. Be on time, be attentive, be organized, and ask questions. If you do it this way, your chances of getting an ‘A’ are greater and the class will be more enjoyable.

**Taking notes:** Notes could be posted online. But they will not. By attending the class, by taking your own notes, you will discover that you will be more focused. But do not try to ‘copy-paste’ the lecture. It is unnecessary. And a waste of your time! Pictures, diagrams, tables, and so on, will generally be found in books or literature. Taking notes means just that, ‘taking notes’. Abbreviate when possible. Here are some abbreviations that you can adopt and might find useful:

- = equals, the same as
- ≠ not equal to, different
- ≈ approximately equal to
- ↑ increased
- ↓ decreased
- < less than
- > greater than
- Δ change
- w/ with
- w/o without
- [ ] concentration
- E energy
- AA amino acid
- NA nucleic acid
- bp base pair
- Kb kilobase
- enz enzyme
- mut mutagenesis
- prot protein
- S substrate
- P product
- ss single-stranded
- ds double-stranded
- phage
- trx transcription
- trn translation
Exams: ‘Exam’ is the most frightening word for all students. Frightening is not the purpose though. Exams help you recapitulate the concepts and ideas taught during the course. They oblige you in pursuing a good strategy for learning, adopting serious homework strategies, and keeping in touch with the material. Try eliminating the negative connotation of the word and it will become easier. There will be four exams during the course, three midterms throughout the course, and one final exam, as posted in the lecture schedule. The dates for the exams for the Fall of 2013 are:

- **1st Midterm**: Sept 24 2013 @ENS280, 3:30pm
- **2nd Midterm**: Nov 05 2013 @ENS280, 3:30pm
- **3rd Midterm**: Dec 03 2013 @ENS280, 3:30pm
- **Final**: Dec 17 2013 @ENS280, 4:00pm-6:00pm

The General Biology course is assigned a total of 300 points. Each of the exams is assigned 100 points. You can drop one of your midterm exams, but not the final exam, under any circumstance. I strongly recommend attending all the midterm exams. Dropping an exam means choosing to drop the midterm exam with the lowest score. If for any reason you were not able to attend one of your midterm exams, the unattended midterm will be your ‘dropped’ exam, and you will not be able to drop any of the remaining exams. Only medical, extreme personal reasons and religious observance will be accepted as valuable excuses. Exams will be promptly checked and graded. They will be composed of multiple choice questions. In case you feel that you were wrongly graded, please contact the instructor within the first week following the exam, not later.

Cell phones, books, notes, calculators or any other ‘smart’ device will be absolutely restricted during exams. You will not have to calculate complicated equations anyhow, so do not worry about that! Make sure not to drink excessively before the exam as you will not be able to leave the classroom for a trip to the bathroom (sorry).

Course grades: As mentioned above, the course will be assigned a total of 300 points resulting from the combination of three 100-point exams. At the end of the course they will be averaged to obtain the final grade. The grade scale will be as following:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>90-100%</td>
</tr>
<tr>
<td>A-</td>
<td>90-93.9%</td>
</tr>
<tr>
<td>B</td>
<td>84-87.9%</td>
</tr>
<tr>
<td>B-</td>
<td>80-83.9%</td>
</tr>
<tr>
<td>C</td>
<td>74-77.9%</td>
</tr>
<tr>
<td>C-</td>
<td>70-73.9%</td>
</tr>
<tr>
<td>D</td>
<td>64-67.9%</td>
</tr>
<tr>
<td>D-</td>
<td>60-63.9%</td>
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<tr>
<td>D+</td>
<td>68-69%</td>
</tr>
<tr>
<td>C+</td>
<td>78-79%</td>
</tr>
<tr>
<td>B+</td>
<td>88-89%</td>
</tr>
<tr>
<td>F</td>
<td>Less than 59.9%</td>
</tr>
</tbody>
</table>

(Please note that both A+ and A will be actually graded as ‘A’ at the end of the course).

Behavior in class: As they say, treat your neighbor as you would like to be treated in return. The same concept applies in class too. Respect your classmates and your instructors, and your classmates and instructors will respect you in return. Be on time, arrive at least five minutes before class, and do not plan on leaving before the end of the class. Cell phones and other ‘disturbing’ technology will be forbidden during classes. If you need your cell phone for emergencies, please keep it on ‘vibration mode’.
**Dishonesty:** Dishonesty is self-explanatory. You know what it is and the instructor should not have to explain. Cheating on an exam is dishonest. You know it, so simply avoid it. If you are found cheating (and the instructor always finds out) you will get automatically an ‘F’. It will be a tremendous pity. Remember! Do not throw away three beautiful months of study for a stupid moment of self-destruction. If you understood the syllabus of this course, you know that you will not need to cheat, because you simply will not want to. Remember, you do not cheat the instructor, you cheat yourself. So again, avoid it!

**Feedback:** The instructor would love to hear any comments regarding the class, whether positive or negative. Please, do not be afraid to send your constructive criticism any time you wish during the course. Comments will, by no means, influence your grade. This feedback has nothing to do with the official and anonymous student evaluation that you will be asked to complete after the last class of the course. Most importantly, remember, the instructor can learn too!