**Biology 105**

**Biological Concepts: Unity (4 cr.)**

**Section B09C**

**Spring 2017**

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**Office hours**

Office hours will be 10:20-11:20 MWF or by appointment.

**Course Description/Objectives**

Biology 105 is the introductory/prerequisites course for most Biology courses on this campus, serving as a University Studies course for many and the first step towards the Medical Technology, Nursing, Kinesiology, or pre-health programs for others. I assume you are entering this course with no real background in Biology. The main focus of the course is to examine the characteristics shared by all living organisms (hence “Unity” in the title). This boils down to the bulk of the course being an introductory cell biology course. We begin by studying basic biochemistry, then cells and cell structure, cell respiration, photosynthesis, cell division (mitosis and meiosis), Mendelian genetics, biotechnology/cell technology, and finally evolution. Throughout the course I will be tying the material to real-life examples about how Biology relates to your everyday life (and it really, really does). I hope you leave the course with a better understanding of basic biology that enables you to make informed decisions about your life and current political issues such as genetically modified organisms and stem cell research.

**Biology 105 as a University Studies Course**

**University Studies**, UW Oshkosh’s newly created **General Education Program,** is divided into three major areas under the heading of “Explore”, which refers to how we are asking you to explore the world around you from different viewpoints. The three areas are “**Nature**.” “**Culture**,” and “**Society**.” Biology 105 is an Explore “Nature” course. Where did this come from? University Studies was built upon a framework of what are called **“Essential Learning Outcomes. (ELOs)”** ELO’s are a combination of **knowledge and skills** we feel you need in order to succeed, no matter what your future profession might be. This is under the bigger umbrella of what is called a “Liberal Arts” education. A **Liberal Arts** education is designed to be a combination of knowledge and skills and competencies designed to turn you into a well-rounded individual and prepare you to be a global citizen. **Explore Nature** courses are all connected to the ELO “**knowledge of the physical and natural world.”** In Biology 105, you will gain knowledge about basic cell biology and chemistry, which is important knowledge for any educated person. Not only will Biology 105 increase your knowledge of the natural world, it will also focus on two “skills” ELO’s, namely **critical and creative thinking** (via lab exercises and lecture material), and **communication skills**, via written reports in lab exercises.

As a university, one of the things we have to do is assess your knowledge and skills in your university studies courses. For this course, what I will have you do is complete a D2L Quiz that contains 10 questions. You must provide a written answer to one of the questions. The quiz will be open for a specified time period during the semester (dates to be determined). The quiz will assess your writing and critical thinking skills. You will receive 10 points for completing the quiz, regardless of your answers to the questions.

My goal for you in this class is to leave with a better understanding of the world around us, plus some additional skills in the areas of critical thinking and writing. If you find yourself having trouble in the course, please look below for the resources available to help you succeed.

**lecture information**

***Lecture Schedule*:** 1:50 a.m.-2:50 p.m. MWF in Halsey Science 106.

***Lecture Text:*** Reece et al.: Biology: Concepts and Connections, Eight Edition, Pearson Cummings Custom Publishing, San Francisco, CA.

***Lecture Format:*** Lectures will be presented via Powerpoint. I will frequently refer to the figures, so you should bring your text to class and make note of any figures from the text that I specifically reference. I post outlines for each lecture on D2L in handout format as pdf’s; they contain some but not all of the information from my Powerpoints, which means you do need to come to class in order to have complete notes. I would highly suggest printing the outlines and bringing them to lecture in order to facilitate note taking.

***Lecture exams***: We will have five lecture exams on the scheduled dates (please see the lecture/lab schedule). Each exam will be worth 100 points and consist of 50 multiple-choice questions. I write all exam questions based on the material I present in lecture.

***Quizzes:*** I will be giving 10 random quizzes, during lecture, over the course of the semester. They will be on paper, in-class quizzes. Make-ups will only be given for absence due to university sanctioned events. All other types of absence will be considered unexcused. What I will do is drop your lowest quiz grade, so if you miss one quiz, it will not affect your grade. I will warn you that missing multiple quizzes, i.e. from skipping class, can impact your final grade.

***Make-up exam****:* If you miss a lecture exam (for an unexcused absence), I will offer a make-up exam during the last week of the semester. The exam will be comprehensive in nature and will be given at the Testing Center in Polk. Your grade on the make-up exam will replace the zero you received for the missed exam. You must get permission from me in advance to take the make-up exam. The make-up exam cannot be taken to replace a low grade on one of the five lecture exams.

***Cell Phones***: All cell phones must be turned off and put away during lecture and laboratory time. If you must leave it on in case of an EMERGENCY call (i.e. life or death), set it to vibrate. Let me be very clear: I do not want to see cell phones during lecture. I can see you texting and thus not paying attention to what I am lecturing about, and this is very insulting to me. I reserve the right to stop lecturing until all cell phones are stowed. If I do so, you are still responsible for the material I would have been covering, as we cannot afford any down time due to the amount of material I need to cover.

***Other electronic devices***: Items such as iPods, iPhones, MP3 players and so forth cannot be used during lectures and especially during exams, so turn them off and stow them at the beginning of class.

***E-mail policy:*** Part of being a student and on the way to being a professional is learning how to communicate like a professional. Along those lines, any e-mail sent to me must be addressed to either Dr. Kostman or T-Bone, and must be written in complete sentences, use proper grammar, and not contain any text speak. I reserve the right to not respond to e-mails that do not meet these criteria. If I do not respond, go back and check the message you sent.

***How to be successful in Biology 105:*** Over the past 17 years, I have taught this course well over 20 times (maybe closer to 30 now). During this time, I have come up with what I think are some pretty solid ideas on how to study and how to be successful in the course. This is advice that I give students when they come to my office after the first exam with questions on how they can improve their performance. Not all of these items will work for every person, but some of them will work for you. For each college class you take, you will need to figure out a different way of studying and preparing for the class. Use this advice, in combination with the resources I have listed below, as needed, to ensure your success in this course.

1. COME TO CLASS.

2. COME TO CLASS.

3. GO TO SI. You have access to a very, very good SI peer mentor.

4. Take good notes.

5. Re-write your notes from each lecture. Studies have shown that re-typing notes does not really

work.

6. Form a study group (perhaps with people in your lab section).

7. Answer the questions on the study guides I post.

8. Get a free tutor by going to CAR.

9. Ask me questions, in person, during office hours, after class, or by e-mail.

10. Ask your lab instructor questions.

11. Explain the material to family and friends. Teaching someone the concepts will help move the

information into your long-term memory.

12. Use active learning techniques-just reading and re-reading your notes will not suffice.

13. Use the questions in the chapters to test your knowledge of the material.

14. Meet with me if you are having trouble with the material, especially once you have feedback

from the first exam. Do not wait until week 13 to approach me about how to improve your

grade.

15. Go to the Reading and Study Skills Center, where they can help you with specific study

techniques.

16. Keep up with the material. You cannot wait until the night before the exam to start studying.

***EARLY ALERT***

In order to provide you with early feedback on your performance in Biology 105, Biology 105 will be taking part in the university’s Early Alert program. Early Alert reports indicate if you have an academic performance or attendance issue that needs to be addressed. Should you receive an early alert, you will be provided with a list of available resources and suggestions (some of which are listed below) that can be utilized to improve your performance in the course. At the top of the list is making an appointment to talk to me about how to improve your performance, which you are always welcome to do regardless of early alert.

**SI (Supplemental Instruction)**

You have access to a very, very good SI leader this semester, Mr. Jacob Langraf. He will be announcing the days, times, and locations for SI sessions during the first week of class.

***CAR (Center for Academic Resources*)**

The Center for Academic Resources (CAR) provides free tutoring for students in most undergraduate classes on campus. CAR is located in the Student Success Center, Suite 102. Check the Tutoring List page on CAR’s website ([www.uwosh.edu/car](http://www.uwosh.edu/car)) for a list of tutors. Please contact CAR or visit their website for more information.

***Reading and Study Skills Center***

The Reading and Study Skills Center is located in Nursing Education 201 ([readingstudy@uwosh.edu](mailto:readingstudy@uwosh.edu)), the center is a resources for improving reading comprehension, test performance, and other study skills. Each course you take will require a different set of study habits and skills, and they can help you! For more information, visit their website, uwosh.edu/readingstudycenter.

***Writing Center***

Conveniently located within CAR, the center is a resource for help for writers in all disciplines. Drop in, or e-mail them at [wcenter@uwosh.edu](mailto:wcenter@uwosh.edu), or visit their website, uwosh.edu/wcenter.

***Grading:***

***Course grade****:* There are a total of 800 points possible for the semester (500 points from lecture exams, 10 points from the writing assignment, 90 points from quizzes, and 200 points from lab (as assigned by your lab instructor). I will calculate your grade by dividing the total number of points you earn over the semester by 800, which will give me a percentage. This percentage will be converted into a letter grade using the scale below:

***Grading Scale:***

93-100% = A (744-800)

90-92% = A- (720-743)

87-89% = B+ (696-719)

83-86% = B (664-695)

80-82%=B- (640-663)

77-79% = C+ (616-639)

73-76% = C (584-615)

70-72%=C- (560-583)

67-69%=D+ (536-559)

63-66% = D (504-535)

60-62%=D- (480-503)

<60% = F (<479)

***Accessing Grades and Class Information***

I have set up this course on the D2L site and will post all grades there. In addition, I will also post messages to the class, sample exams, and review sheets. If you have any questions or problems using the site please see me.

**Statement on Academic Dishonesty**

Students are referred to the University of Wisconsin Oshkosh Student Discipline Code as detailed in specific provisions of Chapter 14 of the State of Wisconsin Administrative Code. Any student(s) found in violation of any aspect of the above Code (as defined in sections UWS 14.02 and 14.03) will receive a sanction as detailed in UWS 14.05 and 14.06. Examples of violations include: looking at another student’s exam or answer sheet and copying the answers during an exam, talking or whispering to another student during an exam, receiving text messages during an exam on an electronic device, or listening to answers or information recorded on an electronic via earphones during an exam. Sanctions range from a grade of zero for the assignment in question to an oral reprimand to expulsion from the University of Wisconsin Oshkosh. Students have the right to request a hearing and to appeal sanctions (as defined in UWS 14.08-14.10).

**Laboratory Information**

**Laboratory Instructor(s)**: Note that labs WILL MEET the first week of class. Each laboratory instructor will provide their contact information and office hours in their lab syllabus, which they will post on the D2L site for your lab section. Your lab instructors will be: B09L: Dr. Toivo Kallas, B10L, B11L, B13L: Dr. Robert Wise; B12 and B14L: Dr. Bea Holton.

**Laboratory Text**: **BIO 105: Concepts in Biology: Unity: *Laboratory Manual****.* **Bring it** (along with lecture text) to every laboratory meeting.

**Laboratory Grade:** You will have 200 points assigned by your lab instructor for work done in lab, and this may be in the form of lab reports, quizzes, or other assignments as given by your lab instructor. Please see your lab syllabus, as posted or distributed by your lab instructor, for details on how your 200 lab points will be assigned.

# Lecture and Laboratory Schedule-Biology 105 Spring 2017 Section B09C

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Lecture #** | **Date** | **Lecture Topic** | **Text Reading** | **Lab Topic** |
| 1 | Jan. 30 | Syllabus, Course Overview, Intro to Study of Biology | 1 | Lab 1 |
| \* | Feb. 1 | Assessment Exam | \* |  |
| 2 | Feb. 3 | Basic Chemistry: Elements, Atoms, and Bonds | 2.1-2.8 |  |
|  |  |  |  |  |
| 3 | Feb. 6 | Water, Chemical Reactions | 2.9-2.14 | Lab 2 |
| 4 | Feb. 8 | Molecules | 3.1-3.7 |  |
| 5 | Feb. 10 | Molecules | 3.8-3.16 |  |
|  |  |  |  |  |
| 6 | Feb. 13 | Introduction to Cells | 4.1-4.4 | Lab 3 |
| 7 | Feb. 15 | Organelles | 4.5-4.12 |  |
| 8 | Feb. 17 | Organelles/Exam 1 Review | 4.13-4.20 |  |
|  |  |  |  |  |
| \* | Feb. 20 | **Lecture Exam I (lectures 1-8; chapters 1-4)** | \* | Lab 4 |
| 9 | Feb. 22 | Membrane structure and membrane transport | 5.1-5.9 |  |
| 10 | Feb. 24 | Energy and Enzymes | 5.10-5.13 |  |
|  |  |  |  |  |
| 11 | Feb. 27 | Cell Respiration I | 6.3-6.8 | Lab 5 |
| 12 | March 1 | Cell Respiration II | 6.9-6.12 |  |
| 13 | March 3 | Cellular Respiration III | 6.13-6.16 |  |
|  |  |  |  |  |
| 14 | March 6 | Photosynthesis I | 7.1-7.5 | Lab 6 |
| 15 | March 8 | Photosynthesis II | 7.6.-7.9 |  |
| 16 | March 10 | Photosynthesis III | 7.10-7.13 |  |
|  |  |  |  |  |
| 17 | March 13 | Intro to cell division, review for Exam II | 8.1-8.4 | Lab 7 |
| \* | March 15 | **Lecture Exam II (lectures 9-16; chapters 5-7)** | \* |  |
| 18 | March 17 | Cell Cycle, Mitosis, Cancer | 8.5-8.8.8 |  |
|  |  |  |  |  |
| \* | March 20-24 | Spring Break | \* |  |
|  |  |  |  |  |
| 19 | March 27 | Meiosis | 8.10-8.8.17 | Lab 8; 9.1 |
| 20 | March 29 | Chromosome Structure | 8.18-8.23 |  |
| 21 | March 31 | Mendelian Genetics I | 9.1-9.7 |  |
|  |  |  |  |  |
| 22 | April 3 | Mendelian Genetics II | 9.8-9.15 | Lab 9.2, 10.1 |
| 23 | April 5 | Mendelian Genetics III | 9.16-9.23 |  |
| \* | April 7 | Review for Exam III | \* |  |
|  |  |  |  |  |
| \* | April 10 | **Lecture Exam III (17-23 chapters 8 and 9)** | \* | Lab 9.3, 10.2 |
| 24 | April 12 | DNA I: History and Replication | 10.1-10.5 |  |
| 25 | April 14 | DNA II: Transcription | 10.6-10.9 |  |
|  |  |  |  |  |
| 26 | April 17 | DNA III: Translation | 10.10-10.16 | Lab 9.4, 10.3 |
| 27 | April 19 | DNA IV: Genetics and Viruses | 10.17-10.23 |  |
| 28 | April 21 | Gene regulation I | 11.1-11.4 |  |
|  |  |  |  |  |
| 29 | April 24 | Gene regulation II | 11.5-11.10 | Lab 9.5, 10.4 |
| 30 | April 26 | Cloning, Stem cells, and cancer | 11.12-11.18 |  |
| \* | April 28 | Review for Exam 4 | \* |  |
|  |  |  |  |  |
| \* | May 1 | **Lecture Exam IV (Lectures 23-28)** | \* | Lab 11 |
| 31 | May 3 | Evolution I: History and Darwin | 13.1-13.10 |  |
| 32 | May 5 | Evolution II: Variation and natural selection | 13.11-13.18 |  |
|  |  |  |  |  |
| 33 | May 8 | Evolution III: Speciation and Evolutionary History | 14.1-14.13; | No Labs |
| 34 | May 10 | Evolutionary IV Big Picture Evolution/Exam Review | 15.1-15.5 |  |
| \* | May 12 | **Lecture Exam V (Lectures 31-34)** | \* |  |