**Biology 105**

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

**Section A09C**

**Fall 2016**

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**Office hours:** MWF 11:30-12:30;all other times by appointment.

**Course Description/Objectives**

Biology 105 is the introductory course for all Biology courses on this campus, and also serves as a general education (USP) 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 chemistry/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. 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 **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 biochemistry, which is important knowledge for any informed person (since it tells you how your cells work)! 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 lab reports in certain 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*:** 10:20 a.m.-11:20 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 that I specifically reference. I post pdf outlines for each lecture that contain some of the information from my powerpoints; in order to get all of the information, you have to attend lecture.

***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 (worth 2 points each). I write all exam questions based on the material I present in lecture.

***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. They are not only disruptive to your fellow students, but sitting and texting during lecture is very disrespectful of me as an instructor.

***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. During this time, I have come up with what I think are some pretty solid ideas on how to study and 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. Take good notes.

4. Re-write your notes from each lecture.

5. Form a study group.

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

7. Get a free tutor by going to CAR.

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

9. Ask your lab instructor questions.

10. Explain the material to family and friends.

11. Use active learning techniques-just reading and re-reading your notes will not do it.

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

***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.

***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 710 points possible for the semester (500 points from lecture exams, 10 points from the writing assignments, 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 710, which will give me a percentage. This percentage will be converted into a letter grade using the scale below:

***Grading Scale:***

93-100% = A (660-710)

90-92% = A- (639-659)

87-89% = B+ (618-638)

83-86% = B (589-617)

80-82%=B- (568-588)

77-79% = C+ (547-567)

73-76% = C (518-546)

70-72%=C- (497-517)

67-69%=D+ (476-496)

63-66% = D (447-475)

60-62%=D- (426-446)

<60% = F (<425)

***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, lecture outlines, 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)**: 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: A01L: Dr. Bea Holton; A02L: Ms. Sonja Jeter; A03L and A06L; Dr. Robert Wise; A04L: Mr. Brad Spanbauer; A05L: Dr. Lisa Dorn and A07L: Dr. Courtney Kurtz.

**Laboratory meeting times:** Labs will meet every week at the assigned times in Halsey 201.

**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 Fall 2016 Section A09C

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Lecture #** | **Date** | **Lecture Topic** | **Text Reading** | **Lab Topic** |
| 1 | Sept. 7 | Syllabus, Course Overview, Intro to Study of Biology | 1 | No labs |
| \* | Sept. 9 | Assessment Exam | \* |  |
|  |  |  |  |  |
| 2 | Sept. 12 | Basic Chemistry: Elements, Atoms, and Bonds | 2.1-2.8 | Exercise 1 |
| 3 | Sept. 14 | Water, Chemical Reactions | 2.9-2.14 |  |
| 4 | Sept. 16 | Molecules | 3.1-3.7 |  |
|  |  |  |  |  |
| 5 | Sept. 19 | Molecules | 3.8-3.16 | Exercise 2 |
| 6 | Sept. 21 | Introduction to Cells | 4.1-4.4 |  |
| 7 | Sept. 23 | Organelles | 4.5-4.12 |  |
|  |  |  |  |  |
| 8 | Sept. 26 | Organelles/Exam 1 Review | 4.13-4.20 | Exercise 3 |
| \* | Sept. 28 | **Lecture Exam I (lectures 1-8; chapters 1-4)** | \* |  |
| 9 | Sept. 30 | Membrane structure and membrane proteins | 5.1-5.9 |  |
|  |  |  |  |  |
| 10 | Oct. 3 | Osmosis, Osmoregulation | 5.10-5.13 | Exercise 4 |
| 11 | Oct. 5 | Transport, Energy, Enzymes |  |  |
| 12 | Oct. 7 | Cell Respiration I | 6.3-6.6 |  |
|  |  |  |  |  |
| 13 | Oct. 10 | Cellular Respiration II | 6.7-6.10 | 6.9-6.6.16 |
| 14 | Oct. 12 | Cell Respiration III; Intro to Photosynthesis | 6.11-6.16; 7.1-7.3 |  |
| 15 | Oct. 14 | Photosynthesis II | 7.4-7.7.8 |  |
|  |  |  |  |  |
| 16 | Oct. 17 | Photosynthesis III | 7.9-7.13 | Exercise 6 |
| \* | Oct. 19 | Review for exam 2 | \* |  |
| \* | Oct. 21 | **Lecture Exam II (lectures 9-16; chapters 5-7)** | \* |  |
|  |  |  |  |  |
| 17 | Oct. 24 | Intro to cell division, cell cycle | 8.1-8.8 | Exercise 7 and 8.1 |
| 18 | Oct. 26 | Mitosis, Cancer | 8.10-8.8.17 |  |
| 19 | Oct. 28 | Meiosis; Chromosome Structure | 8.18-8.23 |  |
|  |  |  |  |  |
| 20 | Oct. 31 | Mendelian Genetics I | 9.1-9.7 | Exercises 8.2, 9.1 |
| 21 | Nov. 2 | Mendelian Genetics II | 9.8-9.15 |  |
| 22 | Nov. 4 | Mendelian Genetics III; Review for Exam III | 9.16-9.23 |  |
|  |  |  |  |  |
| \* | Nov. 7 | **Lecture Exam III (17-22 chapters 8 and 9)** | \* | Exercises 8.3, 9.2 |
| 23 | Nov. 9 | DNA I: History and Replication | 10.1-10.5 |  |
| 24 | Nov. 11 | DNA II: Transcription | 10.6-10.9 |  |
| 25 | Nov. 14 | DNA III: Translation | 10.10-10.16 | Exercises 8.4, 9.3 |
| 26 | Nov. 16 | DNA IV: Genetics and Viruses and Biotechnology | 10.17-10.23 |  |
| 27 | Nov. 18 | Gene regulation I | 11.1-11.4 |  |
|  |  |  |  |  |
| 28 | Nov. 21 | Gene regulation II | 11.5-11.10 |  |
| \* | Nov. 23-25 | Thanksgiving Break | \* |  |
|  |  |  |  |  |
| 29 | Nov. 28 | Cloning, Stem cells, and cancer: review for Exam IV | 11.12-11.18 | Exercises 8.5, 19.4 |
| \* | Nov. 30 | **Lecture Exam IV (Lectures 23-29)** | \* |  |
| 30 | Dec. 2 | Evolution I: History and Darwin | \* |  |
|  |  |  |  |  |
| 31 | Dec. 5 | Evolution II: Variation and natural selection | 13.1-13.10 | Exercise 10 |
| 32 | Dec. 7 | Evolution III: Speciation | 13.11-13.18 |  |
| 33 | Dec. 9 | Evolution IV: Macroevolution | 14.1-14.13; 15.1-15.5 |  |
|  |  |  |  |  |
| \* | Dec. 12 | Assessment Exam | \* | No Labs |
| \* | Dec. 14 | Review for Exam V | \* |  |
| \* | Dec. 16 | **Lecture Exam V (Lectures 29-32)** | \* |  |