**Biology 105**

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

**Section D09C**

**Fall 2017**

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**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 about current political issues such as genetically modified organisms and stem cell research.

**Biology 105 as a University Studies Program 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.

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*:** 11:30 a.m.-12:30 p.m. MWF in Halsey Science 106.

***Lecture Text:*** Taylor et al. Campbell Biology: Concepts and Connections, Ninth Edition (custom), Pearson Custom Publishing, San Francisco, CA.

***Lecture Format:*** Lectures will be presented via Powerpoint. I will frequently refer to the figures, so you should make note of any figures that I specifically reference in your notes and review them in your textbook either during or after class. I post 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 and take notes.

***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 (i.e. I do not ask questions about random facts from the textbook). If you are going to miss and exam, you need to contact me before the exam. If I consider it to be an excused absence, (technically the only excused absences are for university approved events), I will allow you to make up the exam. If it is not an excused absence, see below.

***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.***

***Lecture Quizzes:*** There will be eleven random multiple-choice quizzes over the course of the semester. Each will be worth 10 points. I will drop the lowest quiz score for the semester. There are no make ups for lecture quizzes; if you miss a quiz it will be the low score I end up dropping.

***Homework:*** I will be asking you to complete 10 homework assignments in Mastering Biology (worth 10 points each), which came bundled with our textbook if you purchased a new book. If you did not, you will need to purchase access to Mastering Biology from the publisher. Our textbook representative will be vising us on Friday, September 8th to walk you through how to register for the site and the many benefits of using this software.

***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. If I see cell phones out, I may stop lecturing and will not continue until you put them away. I have been teaching for 18 years, and trust me, you cannot multi-task effectively enough to listen to lecture and text at the same time. Doing so will cause you to miss a key point I am making during lecture, which may cost you points on an exam or quiz.

***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.

***Attendance policy:*** I do not have an attendance policy in lecture. There are 200 students in the course, so taking attendance is difficult. I can tell you that if you do not attend on a regular basis, you will not do well in the course, as you won’t have complete notes, plus you may miss the random lecture quizzes. I have had students drop by half a letter grade simply because they missed too many quizzes, so my advice is to not skip class.

***How to be successful in Biology 105:*** Over the past 18 years, I have taught this course over 25 times. During this time, I have come up with what are some 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. Go to SI sessions

4. Take good notes.

5. Re-write your notes after each lecture.

6. Form a study group.

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.

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

13. Use the questions in and at the end of each chapter to test your knowledge of the material.

**SUPPLEMENTAL INSTRUCTION (SI)**

You are fortunate to have a peer instructor (SI leader) for this section of Biology 105. Your SI leader for this semester is Mr. Jacob Landgraf (landgj09@uwosh.edu). He took this class with me two years ago, and served as my SI leader last semester. He is an excellent SI leader and not only knows the material, but he understands how I teach the material and what areas/concepts that I emphasize. We have tons of data that support the effectiveness of SI, so I highly encourage you to take advantage of this program. Jacob will be offering SI sessions on Tuesdays and Thursdays from 7-8:30 in Clow L101.

***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), 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, or visit their website, uwosh.edu/wcenter.

***Grading:***

***Course grade****:* There are a total of 900 points possible for the semester (500 points from lecture exams, 100 points from the ten random lecture quizzes, 100 points for homework 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 900, which will give me a percentage. This percentage will be converted into a letter grade using the scale below:

***Grading Scale:***

93-100% = A (837-900)

90-92% = A- (810-836)

87-89% = B+ (783-809)

83-86% = B (747-782)

80-82%=B- (720-746)

77-79% = C+ (693-719)

73-76% = C (657-692)

70-72%=C- (630-656)

67-69%=D+ (603-629)

63-66% = D (567-602)

60-62%=D- (540-566)

<60% = F (0-539)

***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: Mr. Matt Nelson (D22, D23, and D25L); Dr. Katrina Olsen (D24 and D27L), and Mr. Andrew Bosma (D28L).

**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 2017 Section D09C

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Lecture #** | **Date** | **Lecture Topic** | **Text Reading** | **Lab Topic** |
| 1 | Sept. 6 | Syllabus, Course Overview, Intro to Study of Biology | 1 | No labs |
| 2 | Sept. 8 | Finish Intro Lecture; Basic Chemistry: Elements, Atoms, and Bonds | 2.1-2.8 |  |
|  |  |  |  |  |
| \* | Sept. 11 | Assessment Exam | \* | Laboratory 1 |
| 3 | Sept. 13 | Water, Chemical Reactions | 2.9-2.14 |  |
| 4 | Sept. 15 | Molecules  | 3.1-3.7 |  |
|  |  |  |  |  |
| 5 | Sept. 18 | Molecules | 3.8-3.16 | Laboratory 2 |
| 6 | Sept. 20 | Introduction to Cells **(Homework Due)** | 4.1-4.4 |  |
| 7 | Sept. 22 | Organelles | 4.5-4.12 |  |
|  |  |  |  |  |
| 8 | Sept. 25 | Organelles/Exam 1 Review (Homework Due) | 4.13-4.20  | Laboratory 3 |
| \* | Sept. 27 | **Lecture Exam I (lectures 1-8; chapters 1-4)**  | \* |  |
| 9 | Sept. 29 | Membrane structure and membrane proteins | 5.1-5.9 |  |
|  |  |  |  |  |
| 10 | Oct. 2 | Osmosis, Osmoregulation | 5.10-5.13 | Laboratory 4 |
| 11 | Oct. 4 | Transport, Energy, Enzymes |  |  |
| 12 | Oct. 6 | Cell Respiration I **(Homework Due)** | 6.3-6.6 |  |
|  |  |  |  |  |
| 13 | Oct. 9 | Cellular Respiration II | 6.7-6.10 6.9-6.6.16 | Laboratory 5 |
| 14 | Oct. 11 | Cell Respiration III; Intro to Photosynthesis | 6.11-6.16; 7.1-7.3 |  |
| 15 | Oct. 13 | Photosynthesis II **(Homework Due)** | 7.4-7.7.8 |  |
|  |  |  |  |  |
| 16 | Oct. 16 | Photosynthesis III | 7.9-7.13 | Laboratory 6 |
| \* | Oct. 18 | Review for exam 2 **(Homework Due)** | \* |  |
| \* | Oct. 20 | **Lecture Exam II (lectures 9-16; chapters 5-7)** | \* |  |
|  |  |  |  |  |
| 17 | Oct. 23 | Intro to cell division, cell cycle | 8.1-8.8 | Laboratory 7 and 8.1 |
| 18 | Oct. 25 | Mitosis, Cancer | 8.10-8.8.17 |   |
| 19 | Oct. 27 | Meiosis; Chromosome Structure **(Homework Due)** | 8.18-8.23 |  |
|  |  |  |  |  |
| 20 | Oct. 30 | Mendelian Genetics I | 9.1-9.7 | Laboratory 8.2, 9.1 |
| 21 | Nov. 1 | Mendelian Genetics II | 9.8-9.15 |  |
| 22 | Nov. 3 | Mendelian Genetics III; Review for Exam III **(Homework Due)** | 9.16-9.23 |  |
|  |  |  |  |  |
| \* | Nov. 6 | **Lecture Exam III (17-22 chapters 8 and 9)** | \* | Laboratory 8.3, 9.2 |
| 23 | Nov. 8 | DNA I: History and Replication | 10.1-10.5 |  |
| 24 | Nov. 10 | DNA II: Transcription | 10.6-10.9 |  |
|  |  |  |  |  |
| 25 | Nov. 13 | DNA III: Translation | 10.10-10.16 | Laboratory 8.4, 9.3 |
| 26 | Nov. 15 | DNA IV: Genetics and Viruses and Biotechnology **(Homework Due)** | 10.17-10.23 |  |
| 27 | Nov. 17 | Gene regulation I | 11.1-11.4 |  |
|  |  |  |  |  |
| 28 | Nov. 20 | Gene regulation II | 11.5-11.10 | No Labs |
| \* | Nov. 22-24 | Thanksgiving Break | \* |  |
|  |  |  |  |  |
| 29 | Nov. 27 | Cloning, Stem cells, and cancer: review for Exam IV **(Homework Due**) | 11.12-11.18 | Laboratory 8.5, 9.4 |
| \* | Nov. 29 | **Lecture Exam IV (Lectures 23-29, Chapters 10 and 11)** | \* |  |
| 30 | Dec. 1 | Evolution I: History and Darwin | \* |  |
|  |  |  |  |  |
| 31 | Dec. 4 | Evolution II: Variation and natural selection | 13.1-13.10 | Laboratory 10 |
| 32 | Dec. 6 | Evolution III: Speciation  | 13.11-13.18 |  |
| 33 | Dec. 8 | Evolution IV: Macroevolution | 14.1-14.13; 15.1-15.5 |  |
|  |  |  |  |  |
| \* | Dec. 11 | Review for Exam V **(Homework Due)** | \* | No Labs |
| \* | Dec. 13 | **Lecture Exam V (Lectures 30-33, Chapters 13-15)** | \* |  |
| \* | Dec. 15 | **Lecture Exam V (Lectures 30-33, Chapters 13-15)** | \* |  |