

Course Syllabus
BIO 336 Essentials of Pathophysiology
Department of Natural Sciences
Oregon Institute of Technology

“Don’t practice (study) until you get it right. Practice (study) until you can’t get it wrong”
- author unknown

Essentials of Pathophysiology

BIO 336

CRN 10249

Welcome to BIO 336! I’m looking forward to having an exciting and productive quarter with you!

Instructor: Dr. Molly O’Shaughnessy

Email: molly.oshaughnessy@oit.edu

Office Hours: available by appointment

Office Location: near Cleveland, Ohio

Instructor Phone: 330-241-3090

Class Location: online only

Class Day/Time: please see
course schedule

Lab: none

Credit Hours: 3

Dr. O’Shaughnessy is on Eastern Standard Time

Offered Online: Fall, Winter, Spring, and Summer quarters for the 2020 – 2021 academic year

My availability: I read the class messages in the course at least once, usually twice a day, and once or more per weekend. This is the best way to contact me. I check my OIT email less often. I am often away from my phone, and usually do not pick up calls from numbers that I do not recognize.

Texts and Supplementary Materials

- Recommended text (not required) *Understanding Pathophysiology*, by Sue E. Huether & Kathryn L. McCance, 6th edition or later, Elsevier; ISBN 978-0-323-35409-7
- A human anatomy and physiology college textbook of your choice.
- Optional: *Study Guide and Workbook for Understanding Pathophysiology*, by Parkinson, fifth edition, Elsevier
- There are many anatomy, physiology, and pathophysiology study aids available at the bookstore and online. Think about your personal learning style and buy accordingly.

Technology Requirements

- Computer with webcam and stable internet connection.
- Chromebooks do not work with the Proctoring software.

Catalog Course Description

- Study of the dynamic aspects of disease process with emphasis on abnormal physiology. Detailed discussion of cellular alterations, normal immunology, neoplasia, inflammation, and alterations of the respiratory and skeletal systems, and Diabetes Mellitus. Systems interactions are discussed regularly throughout the course.

Prerequisites & Corequisites

BIO 200 Medical Terminology

BIO 233 Human Anatomy & Physiology III

Both with a grade of "C" or better

Course Overview

Pathophysiology is an important, foundational study upon which the further study and practice of medicine depends. First, you need to know how the body works under normal circumstances (i.e. Human Anatomy & Physiology). Then, pathophysiology teaches how that anatomy and physiology changes under different abnormal/disease conditions. Diagnosing, treating, prognosing, and preventing a disorder all depend on an understanding of the underlying pathophysiology.

Teaching Methodology

This course was developed pre-covid 19 as the online counterpart of the BIO 336 class that I developed and taught live on the Klamath Falls OIT campus for many years. To ensure that my online students received the same quality of experience as my live class students, my lectures were all videotaped during live classes or of me lecturing to an empty classroom. There still may be a few lectures that are audio only, where I voiced-over my PowerPoint slides.

The PowerPoint presentations are included in each module so that you can print them out and take additional notes while watching the videos. It is important to note that you could be tested on anything discussed in lecture, whether it is written in the PowerPoints or not. I have provided them only as an aid for notetaking. Studying only the PowerPoints would most likely result in a lower grade, and some items could be taken out of context. It is important that you listen and understand the concepts that are being discussed in the videos.

Online students actually have an advantage over live students, as they can stop the tape and have me repeat myself, or review parts of the tapes before exams.

Student Learning Outcomes

Upon completion of this course, the student should be able to...

1. Understand the concept of disease as an alteration of homeostasis and the general adaptative response
2. Describe the types of cellular adaptation, injury, and necrosis at the microscopic level
3. Discuss the general topic of neoplasia, including cell transformation; the role of oncogenes; the difference between benign and malignant tumors *in vivo* and *in*

- vitro*; gradations of malignancy; grading systems of tumors; clinical experiences common to many types of cancer patients, including paraneoplastic syndromes
4. Understand fundamental concepts of normal immunology, including the structure and function of the immunoglobulins; concepts of antigenic drift; to be able to compare and contrast first and second immunologic exposures
 5. Identify the hydrostatic and oncotic balances which drive hemodynamics; to understand the mechanisms of the six types of edema formation; explain the pathogenesis of the inflammatory response; and the physiology of wound healing
 6. Understand the alterations of normal physiology that lead to various non-specific signs and symptoms of illness associated with disorders of the cardiovascular, respiratory, and skeletal systems
 7. Characterize, describe, and understand some of the most common diseases and disorders of the respiratory, cardiovascular, and skeletal systems; be able to group disorders as sub-categories of basic etiological types
 8. Understand the basis behind diagnostic strategies to distinguish between similar disorders
 9. Appreciate the possible outcomes and common complications for the natural course of various diseases and disorders, including systems interactions, as well as how different characteristics of the patient will influence the outcome of a disease process
 10. Understand the rationale behind treatment options and how these interventions impact and change the pathophysiological mechanisms that are occurring to bring the body back into homeostasis

Please note:

Even though I am not part of the Radiology or Respiratory Care faculty, BIO 336 is considered as a core class in these programs. Therefore, receiving a D or F in this class will put you out of sequence for those majors.

I developed this course in close consultation with the radiology and respiratory faculty. If you notice any discrepancy between what I am teaching you, and what they have taught you, please bring it to my attention immediately. Thank you!

Course Schedule:

Week	Day	Topic	SLO	Assessment
1	Mon.	Homeostasis, Stress & Disease	SLO 1	Ex #1 Q #1-2
	Wed.	Altered Cells	SLO 2	
	Fri.	Altered Cells	SLO 2	
2	Mon.	Necrosis	SLO 2	Ex #1 Q #6-7, 10-21 F Q #1, 2, 18
	Wed.	Neoplasia	SLO 3	
	Fri.	Neoplasia	SLO 3	Ex #1 Q#22 – 52 F Q #4, 22
3	Mon.	Neoplasia	SLO 3	
	Wed.	Neoplasia	SLO 3	

	Fri.	Neoplasia	SLO 3	
4	Mon.			
	Wed.	Normal Immunology	SLO 4	Ex #2 Q #1 – 15 F Q #5 - 7, 19 - 21
	Fri.	Normal Immunology	SLO 4	
5	Mon.	Inflammation	SLO 5	Ex #2 Q #16 – 39 F Q #8, 10, 11, 16, 17
	Wed.	Inflammation	SLO 5	
	Fri.	Wound Healing	SLO 5	
6	Mon.	Wound Healing	SLO 5	Ex #2 Q #40 – 47 F Q #13 - 15
	Wed.	Diabetes mellitus	SLO 7	
	Fri.	Diabetes mellitus	SLO 7	
7	Mon.			
	Wed.	Congenital heart disease & Congestive Heart Failure	SLO 6 & 7	Ex #3 Q #2 - 14
	Fri.	Respiratory	SLO 6 & 7	Ex #3 Q #15 - 30
8	Mon.	Respiratory	SLO 6 & 7	
	Wed.	Respiratory	SLO 6 & 7	
	Fri.	Respiratory	SLO 6 & 7	
9	Mon.	Respiratory	SLO 6 & 7	
	Wed.	Respiratory	SLO 6 & 7	
	Fri.			
10	Mon.	Skeletal	SLO 6 & 7	Ex #3 Q #1, 31 – 43 F Q #3, 23
	Wed.	Skeletal	SLO 6 & 7	
	Fri.	Skeletal	SLO 6 & 7	
			SLO 8	Ex #3 Q #18, 42
			SLO 9	Ex #3 Q #11, 21
			SLO 10	Ex #3 Q #16, 34

Grading

Please also see the University Registrar's web page on OIT's website.

Attendance:

You are expected to view all of the videos in the course in a timely manner. This will require a minimum of three hours per week. Because of the accelerated speed of college courses, there is little time to catch up if you get behind. Additional study time of two to three hours per lecture is highly recommended.

Exams:

Your grade will be determined by your performance on three exams, a syllabus quiz, and one accumulative final exam. All of these assessments will carry equal weight.

Abbreviations are not acceptable on exams; please write out all acronyms.

Exams are expected to be taken at their scheduled times!! You do not have to take them on the exact day mentioned in the syllabus. You have a fairly large window (one week) of availability for each exam, so this shouldn't be a problem if you plan ahead. You are totally responsible for any difficulties that rise due to late scheduling! Last minute scheduling will incur additional out of pocket fees, and a poorer selection of available times (3 am for example). Scheduling during the first part of the availability period will give you some "wiggle room" in case something unexpected comes up.

Late Policy: 12.5 penalty points will be deducted from your score on your first exam that is submitted late. A second offense will carry a penalty point deduction of 25 points. I have a "three strikes" policy, meaning that a third late submission will not be accepted and will receive a score of zero.

95% Policy: I want to encourage you to do the very best that you possibly can, not "What is the least I have to do to get an A?" To put my money where my mouth is, if you have a 95% or better average on the first two exams, I will excuse you from taking the accumulative final. You will still need to take exam #3, and your A is not guaranteed, should you do poorly on exam #3. I hope that you will rise to this challenge!

Total Points for Course:

455 total points in course:	
syllabus quiz	5 points
1 st lecture exam	125 points
2 nd lecture exam	125 points
3 rd lecture exam	125 points
Accumulative Final	75 points
<hr/>	
Total	455 points

Grading Scale:

- above 90% = A
- above 80%, but below 90% = B
- above 70%, but below 80% = C
- above 60%, but below 70% = D
- below 60% = F

Borderline Grades:

Please note that I do not "round-up" borderline grades. In case of borderline grades, I will always look at the percentage grade received on the accumulative final, or the grade received on the last exam taken, and will use that percentage to determine the grade received for the entire course.

Proctoring

For security reasons, all exams in this course must be proctored (supervised). This is accomplished through the web cam on your computer. Also, the proctoring software does not work on chrome books. If your computer does not have a webcam, or if you have a chrome book, you will need to make arrangements to use a computer that does.

OIT has contracted with ProctorU to supply this service. No other universities or testing centers are allowed. OIT has negotiated a fee structure with ProctorU that is significantly lower than their standard per exam fees. This fee is now covered as part of your online tuition at Oregon Tech, so that it can be covered by financial aid. If you drop the course within the deadline period of the Cashier's timetable, then the fee will be reimbursed.

There are three important points for you to remember:

1. You will still need to create an account with ProctorU, but your fees will be waived. You can set up this account by going to proctoru.com and then clicking on the 'sign up' button in the upper right-hand corner of the page.
2. You **MUST** plan ahead!! Schedule ALL of your exam-taking appointments at the beginning of the quarter or at least one week ahead of time. This service is used by universities across the country, so there is competition for "good times". If you delay, there may only be time slots like 2 am or 4 am left to choose from.
3. If you fail to schedule at least 72 hours prior to taking your exam, and utilize the 'Take It Now' option, you will be charged an additional fee (approximately \$10 per exam). This fee is NOT covered in your online fees and must be paid out of your pocket.

Notice of Nondiscrimination

Oregon Institute of Technology does not discriminate on the basis of race, color, ethnicity, national origin, gender, disability, age, religion, marital status, sexual orientation or gender identity in its programs and activities.

This Syllabus is a contract for this class

Students are responsible not only for the syllabus content for each course in which they are enrolled, but also for the general expectations and behaviors expected of all OIT students. Please refer to the current copy of the OIT Student Handbook found at <https://www.oit.edu/docs/default-source/Student-Affairs-/student-handbook/student-conduct-code.pdf> to review these guidelines.

Academic Integrity Policy

Students are expected to demonstrate their knowledge with honesty and integrity. Oregon Tech considers academic dishonesty to be an unacceptable practice. The complete Oregon Tech Student Academic Integrity Policy is available on the Oregon Tech web site: <https://www.oit.edu/campus-life/student-affairs/student-resources/student-academic-integrity>.

Americans and Disabilities Act (ADA / Section 504)

Students with a documented or suspected disability who require assistance or academic accommodations should contact the office of Disability Services to discuss eligibility. Contact the Disability Services office at the campus closest to you: Klamath Falls (541) 851-5227 or Portland-Metro (503) 821-1305. More information can be found at <http://www.oit.edu/academics/ssc/disability-services>.

Family Education Rights and Privacy Act (FERPA)

All records related to this course are confidential and will not be shared with anyone, including parents, spouses, etc. without a privacy release form signed by you. More information can be found at <https://www.oit.edu/registrar>.

Title IX Information

Oregon Tech faculty and staff are committed to creating and maintaining a safe and equitable learning environment for the Oregon Tech community. Pursuant to U.S. Department of Education requirements, all Oregon Tech faculty and staff (other than designated confidential staff) must report any information they become aware of regarding gender-based bias, sexual harassment, sexual assault, sexual misconduct, relationship violence, or stalking involving a student to the University Title IX Coordinator. For more information please see <https://www.oit.edu/title-ix>. You can contact OIT's Title IX Coordinators' Office at 541-885-1108 or TitleIX@oit.edu.

Safety and Health Services for Students

Information on safety and health services available to students on campus can be found by contacting student health services at 541-885-1800. Some of these services may or may not be available to online students.

Additional information on Academic and University Policies can be found on OIT's main website.