



SEMESTER

Life and Natural Sciences Department School of Science, Technology, Engineering, and Mathematics

Program Name: Biology
Course Name: Anatomy and Physiology II – Lecture
Course Number: BIO212 **Section:** XXX
Meeting Day(s)
Time(s):
Credits: 4 (combined lecture and lab)
Contact Hours: 3
Text: *Human Anatomy and Physiology, 2nd Edition*, Amerman, Erin C., Pearson Education, 2019.
Instructor:
Office Location:
Office Hours:
Owens CC Email:**
Cell Phone:
Additional Contact: **Please use only Owens email for course communications

CATALOG DESCRIPTION: A continuation of Anatomy and Physiology I, this course discusses life functions necessary to power the human body such as hormone regulation, circulation, respiration, ingestion, digestion, absorption, metabolism, excretion, and the ability to reproduce. This course offers an integrated discussion of human development and genetics. This course may not be taken concurrently with BIO211. A student retaking the course must repeat both the lecture and the laboratory portion.

COREQUISITE: None

PREREQUISITE: Anatomy and Physiology I (BIO211) or equivalent

TEXTBOOKS and MATERIALS

- *Human Anatomy and Physiology, 2nd Edition*, Amerman, Erin C., Pearson Education, 2019.
- *Anatomy and Physiology 2 Laboratory Manual 3rd Edition*, Mika, Thomas, et. al., Van-Griner Publishing, 2023.

- Disposable gloves.

*Your **print book, e-book, or access code** required for class can be accessed through the Owens Community College e-Campus Bookstore by accessing the online link, called “Find Books” on the course schedule for each course section.*

Competency	Assessed
Think analytically, critically, and creatively	Homework Assignments/Question Sets/Lab Reports
Communicate effectively	Exams/Quizzes/Lab Reports

Inclusive Access (I.A.) Materials are included in the cost of the course to save students money through lower negotiated rates with publishers. Courses containing I.A. materials will have it noted on the online class schedule. If your course includes I.A. digital materials, you will receive an email with subject line, “Your inclusive Access Materials,” and it will include any codes or digital links.

The email will come to your Owens Community College email from the Owens e-Campus Bookstore on the first day of class, if not before. Be sure to check your spam (junk email) if you do not find it in your inbox. If the email is not in your inbox or spam folder, contact your instructor immediately. You may also see a folder at the top of your course labelled “Course Materials by eCampus.” This folder will contain any needed codes or links to needed materials.

If the I.A. materials also include a printed book or are in print form, the item will be shipped to your address of record automatically based on your enrollment in the course. Please note that some courses do not include printed materials in I.A and those materials would need to be purchased separately using the link on the course schedule. When you access the Find Books link you will see which items in a course are included in I.A.

GENERAL COURSE INFORMATION

Course Objectives

- Provides students in the Health Technologies at Owens Community College with a basis in life science.
- Describes the life functions that are necessary to control, regulate, and reproduce the human body.
- Prepares students to read and study science.
- Prepares students to utilize this knowledge in their other health technology courses.

Institutional General Education Competencies:

As a student at Owens Community College, you will take General Education courses as part of your degree program. While specific to the General Education courses, will be reinforced in many of your degree program major courses and may be measured in your capstone course(s) and others as identified.

Lecture Student Learning Objectives

Competency	Assessed
1. Compare and contrast the endocrine and nervous systems control over body functions	Quiz 1/Exam 1
2. Describe major structures and functions of the endocrine system	Quiz 1/Exam 1
3. Describe the major classes of hormones and know their functions	Quiz 1/Exam 1
4. Describe the relationship between the hypothalamus and the pituitary gland	Quiz 1/Exam 1
5. Explain the relationship between the nervous system and the adrenal gland	Quiz 1/Exam 1
6. Understand the effects of common hormones from endocrine organs and tissues	Quiz 1/Exam 1
7. Describe the hormonal control of fluid and metabolic homeostasis	Quiz 1/Exam 1
8. Explain the pathway of blood flow through the heart into pulmonary and systemic circuits	Quiz 1/Exam 1
9. Describe the parts of the cardiac conduction system and how the system functions	Quiz 1/Exam 1
10. Describe the cardiac cycle	Quiz 1/Exam 1
11. Compare and contrast the structures of arteries and veins	Quiz 1/Exam 1
12. Describe the factors that influence blood flow	Quiz 1/Exam 1
13. Explain how blood pressures vary in different parts of the systemic and pulmonary circuits	Quiz 1/Exam 1
14. Explain how oxygen and carbon dioxide are transported	Quiz 1/Exam 1
15. Describe functions and structures of the lymphatic system	Quiz 2/Exam 2
16. Compare and contrast blood vessels and lymphatic vessels	Quiz 2/Exam 2
17. Describe and identify lymphatic organs and tissue	Quiz 2/Exam 2
18. Describe innate and adaptive immunity	Quiz 2/Exam 2
19. Describe disorders of the immune system	Quiz 2/Exam 2

20. Distinguish between upper and lower respiratory tracts	Quiz 2/Exam 2
21. Describe the major functions of the respiratory system	Quiz 2/Exam 2
22. Understand the basic laws of gasses	Quiz 2/Exam 2
23. Explain basic homeostatic mechanisms throughout the body systems	Quiz 2/Exam 2
24. Describe the major functions and structures of the digestive system	Quiz 3/Exam 3
25. Explain the stimulation associated with motility of the stomach	Quiz 3/Exam 3
26. Understand the role of bacteria in the large intestine	Quiz 3/Exam 3
27. Explain the defecation reflex	Quiz 3/Exam 3
28. Explain the role of the pancreas, liver and gallbladder in the digestive system	Quiz 3/Exam 3
29. Define basic terminology associated with metabolism and nutrition	Quiz 3/Exam 3
30. Compare and contrast endergonic and exergonic reactions	Quiz 3/Exam 3
31. Describe phosphorylation	Quiz 3/Exam 3
32. Understand the process of cellular respiration	Quiz 3/Exam 3
33. Describe both anabolic and catabolic pathways	Quiz 3/Exam 3
34. List and describe the organs of the urinary system	Quiz 3/Exam 3
35. Describe the major functions of the organs of the urinary system	Quiz 3/Exam 3
36. Describe the microanatomy of the kidney	Quiz 3/Exam 3
37. Understand micturition and the formation of concentrated and dilute urine	Quiz 3/Exam 3
38. Explain buffer systems	Quiz 4/Exam 4
39. Compare and contrast basic structures and functions of male and female reproductive systems	Quiz 4/Exam 4
40. Explain meiosis and contrast the process to mitosis	Quiz 4/Exam 4
41. Describe gametogenesis for male and female	Quiz 4/Exam 4

42. Understand the process of spermatogenesis and oogenesis	Quiz 4/Exam 4
43. Describe the uterine cycle	Quiz 4/Exam 4
44. Describe the process of fertilization through parturition	Quiz 4/Exam 4
45. Understand basic genetic concepts	Quiz 4/Exam 4
46. Describe both embryonic and fetal periods	Quiz 4/Exam 4

Laboratory Student Learning Outcomes

Competency	Assessed
Identify Endocrine Structures and their hormones	Lab exam 1
Understand the relationship between hypothalamus and pituitary gland	Lab exam 1
Identify both gross and microscopic anatomy of the heart	Lab exam 1
Understand basic patterns of an ECG	Lab exam 1
Define and calculate cardiac output	Lab exam 1
Calculate MABP	Lab exam 1
Identify different types of blood using the ABO blood typing system	Lab exam 2
Identify granulocytes and agranulocytes and their functions	Lab exam 2
Trace peripheral circulation from heart to target organs	Lab exam 2
Learn basic methods for obtaining vital signs (PERRLA)	Lab exam 3
Identify gross and microscopic structures of respiratory system	Lab exam 3
Explain how digestive enzymes operate	Lab exam 3
Identify gross and microscopic structures of urinary system	Lab exam 3
Understand the concepts of meiosis	Lab exam 4
Know and explain the major stages of development from fertilization through birth	Lab exam 4
Understand the Terminology, concepts, issues of genetics	Lab exam 4
Use a Punnett square to predict genotypes and phenotypes	Lab exam 4

Course Rules

- Attendance at lecture is very important, because most of the exam material will come from the lecture notes.
- Required readings from the texts will be assigned to support the lectures and laboratories.
- Notes of both lectures and the readings should be kept in some form of a notebook.
- Laboratory rules and attendance: This information will be listed in a separate laboratory syllabus and presented by the laboratory instructor. Any questions should be directed to the laboratory instructor.
- **IMPORTANT:** Any exam or quiz will be declared invalid if the student does not attend the proper course section assigned at registration, unless the student has received prior permission from the instructor.

Devices

Phones and other electronic communicating devices must be in silent mode during class.

Unauthorized use of a phone, e-watch or tablet is not permitted during an exam. Use of these devices could result in forfeiture of exam points. Phones cannot be substituted for calculators.

GRADING PROCEDURE

EVALUATIONS

1. **Lecture Quizzes:** Four announced 25-point quizzes will be given. Quizzes may include multiple-choice, matching, short answer, identification, or fill-in-the-blank questions, with no more than 70% multiple-choice. Quizzes will be timed.
2. **Laboratory Grade:** See laboratory syllabus for this information.
3. **Homework Assignments:** Weekly chapter homework assignments will be assigned, with varying point values, utilizing **Pearson's Mastering A&P** or other instructor-specified activities.
4. **Lecture Exams:** Four 100-point exams will be administered, each with at least 40 questions. Exams will have a mix of question types, like multiple choice, matching, short answer/essay, identification, and more. But, no more than 70% of the questions on each exam will be multiple choice. The topics discussed in lecture and lab are really important. You could be tested on them on both your lecture and lab exams.
5. **Make-Up Exams and Quizzes Policy:** Students may be permitted to take makeup examinations or quizzes at the discretion of the instructor. Contact your instructor immediately if you miss a lecture, lab, quiz or exam. **Makeup exams must be taken within one week of the scheduled exam and will be essay format.**

There are NO open book or open note exams.

During exams, unauthorized use of a phone, tablet, e-watch or any other electronic device is prohibited. Use of these devices during an exam, could result in forfeiture of exam points.

For any technical issues contact the Owens IT help desk at helpdesk@owens.edu or Pearson student support at <https://mlm.pearson.com/northamerica/masteringaandp/>

GRADING

Grading for BIO212 is based on a total point accumulation system. Allocation of points for the lecture exams, lecture quizzes, and the laboratory portion of the course as well as the conversion of total points to a letter grade will be as follows:

1. Lecture Quizzes: 4 x 25 points each = 100 points
 2. Lecture Exams: 4 x 100 points each = 400 points
 3. Lecture Homework = 75 points
 4. Laboratory Exams: 4 x 50 points each = 200 points
 5. Lab Reports / Question Sets: 10 x 10 points each (Lowest Dropped) = 100 points
- Total = 875 points

If there are partial points awarded for any assignment the final total points for the class will be rounded up or down to the nearest whole number. For instance, a total of 800.5 points will be rounded UP to 801 points. A total of 800.4 points will be rounded DOWN to 800 points. There will be NO EXCEPTIONS to this policy.

Letter grades are assigned according to the following scale:

875 to 788 points	A	611 to 525 points	D
787 to 700 points	B	524 and below	F
699 to 612 points	C		

To pass the entire course, a student must have no fewer than 180 points (60%) in the laboratory portion of the course.

There is no provision for extra credit.

Your letter grade is determined by which bracket your point total fits into. Even if your point total is 699, one point from a B grade, you will receive a C grade. As stated earlier in this syllabus, there is no extra credit in this course. The points you earn determine your letter grade. Do not ask for any extra points at the end of this course. You will not receive it. You cannot negotiate your points at the end of the course because you do not accept your grade or you are close to a higher grade. It is your responsibility to gain every point possible in both lecture and in laboratory to obtain the highest letter grade possible. Exceptions to the course rules and guidelines will not be made for anyone for any reason.

WEB SECTIONS ONLY

Using LockDown Browser for Online Exams

This course requires the use of LockDown Browser and video monitor for online exams. Watch the video (*link below*) to get a basic understanding of LockDown Browser and the

webcam feature. To get started on your computer, watch the instructional video and then download and install LockDown Browser from the link.

- <http://www.respondus.com/products/lockdown-browser/student-movie.shtml>

To get started on your computer, download and install LockDown Browser from this link.

- <http://www.respondus.com/lockdown/download.php?id=139313370>

To take an online test, start LockDown Browser and navigate to the exam. (*You won't be able to access the exam with a standard web browser.*) For additional details on using LockDown Browser, review the quick start guides from Owens and Respondus in Course Content.

Helpful Hints

When taking an online exam, follow these guidelines:

- Ensure you're in a location where you won't be interrupted
- Turn off all mobile devices, phones, etc.
- Clear your desk of all external materials — books, papers, other computers, or devices
- Remain at your desk or workstation for the duration of the test
- LockDown Browser will prevent you from accessing other websites or applications; you will be unable to exit the test until all questions are completed and submitted

BIO212 LECTURE READING LIST/COURSE CALENDAR

Human Anatomy and Physiology, 2nd edition, Amerman, Erin C., Pearson Education, 2019

Week	Date	Topics	Reading Assignments	E-Text Chapter Sections
1	Date	Endocrine System	584-625	16.1-16.7
2	Date	Cardiovascular: the heart and the blood vessels	630-665	17.1-17.5
3	Date	Cardiovascular: the blood vessels	670-695	18.1-18.5
4	Date	Cardiovascular: the blood	723-748	19.1-19.6
5	Date	Lymphatic system	754-797	20.1-20.7
6	Date	Respiratory system	802-838	21.1-21.5
7	Date	Digestive system	851-895	22.1-22.7
8	Date	Digestive system	“	“
9	Date	Metabolism	902-932	23.1-23.6
10	Date	Urinary system	947-989	24.1-24.9
11	Date	Fluids and electrolytes	993-1016	25.1-25.4
12	Date	Reproductive system: overview, meiosis, male reproductive system	1022-1038	26.1-26.3
13	Date	Reproductive system: female reproductive cycles, pregnancy	1039-1055	26.4-26.5
14	Date	Human development: embryology, parturition, lactation	1066-1092	27.1-27.6
15	Date	Human development: heredity	1093-1094	27.7
16	Date	Final Exam Week-Last day of semester Dec 11		

Quiz/Exam Schedule

Date-may be subject to change	Lecture Quiz / Exam	Points Possible
Date	Quiz 1	25
Date	Exam 1	100
Date	Quiz 2	25
Date	Exam 2	100
Date	Quiz 3	25
Date	Exam 3	100
Date	Quiz 4	25
Date	Exam 4	100

IMPORTANT

Under some circumstances, dropping a course may negatively affect your ability to receive financial aid in future semesters. Consult your academic advisor with questions.

Academic Calendar

Date	Semester begins
Date	Last day of classes
Date	Exam week
Date	Commencement

Academic Support

Disability Services Resource Center: If you have a disability or acquire one, you may be entitled to receive reasonable accommodations intended to assure you an equal opportunity to participate in and benefit from the program. To receive more information or to register for accommodations, please contact the Disability Resource Center at 567-661-7007, email disability@owens.edu, visit <https://www.owens.edu/disability/>, or stop by College Hall 124.

Tutoring Services: Owens Community College offers academic tutoring and assistance in a variety of subjects including: accounting, computing, economics, mathematics, science, and writing. For more information go to: <https://www.owens.edu/successcenters/>.

Counseling Services: Counseling Services provides assistance to students experiencing personal, educational, interpersonal/relationship, family, social, or psychological difficulties. If you feel you may benefit from this service, please contact them at counselingservices@owens.edu. More information is at <https://www.owens.edu/counseling/>.

Campus and Community Connections: The Center for Campus and Community Connections (College Hall 151) is a walk-in office created to provide retention support through resource stability initiatives and community connections. Go here for more information:

<https://www.owens.edu/connection/> or contact connections@owens.edu

Owens Library: The Owens Library offers two locations (Toledo and Findlay) as well as online resources. For more information visit <https://www.owens.edu/library/>.

Students can find more information on campus resources, student support, student life, and security at this [link](#).

General Information

Student Code of Conduct: All students are expected to follow Owens Community College's [Student Code of Conduct](#), which includes academic honesty, encompassing plagiarism. See the [Board Policy](#) for more information.

Anti-Discrimination and Harassment & Title IX/Sexual Misconduct: All students, faculty, and staff are expected to follow Owens Community College's [Anti-Discrimination and Harassment Policy](#) and the College's [Title IX Policy](#)/Sexual Misconduct Procedures and Guidelines. The College strictly prohibits and will not tolerate harassment, discrimination, intimidation, or hostile/offensive working or learning environments.

Religious Accommodations: A student seeking an accommodation for an absence permitted under Ohio's Testing Your Faith Act must provide the instructor with a written email notice with the specific dates for an absence, and must do so not later than fourteen (14) days after the first day of instruction. Alternative accommodations are not retroactive, and no academic penalty will be imposed for an absence under the policy*. The request for an alternative accommodation will be kept confidential. Students with questions about a religious accommodation under Ohio's Testing your Faith Act may contact the College's Office of Academic Affairs: provost@owens.edu. The policy may be found on the Owens website: [3358:11-2-63 Accommodation](#) for a Student Absence for the Observance of Religious Beliefs and Practices Policy.

Document Collection: Throughout the semester, your instructors may ask for a variety of assignments including tests and/or quizzes for student learning of institutional general education competencies or program assessment. Please save all your class materials until the end of the semester.

Classroom Admittance: OCC classes shall only be attended by the officially registered OCC students or perspective students, instructor of record, guest lecturer, or substitute. Visitors are not permitted to be in the classroom and should not be invited to attend or participate in the class. See [FERPA](#) regulations for more information.

Use of AI Tools: This course permits you to use artificial intelligence (AI) tools, such as chatbots, text generators, paraphrasers, summarizers, or solvers, to get guidance on assignments,

as long as you do so in an ethical and responsible manner. Essentially, you can think of these tools as ways to help you learn but not to entirely create work for assignments like discussion board posts, essays, presentation slides, and so on. AI is more like your tutor or TA, not a replacement for your independent thinking.

This means that you must:

- Not use AI tools to replace your own thinking or analysis or to avoid engaging with the course content.
- Cite or explain any AI tools you use. Provide the name of the AI tool, the date of access, the URL of the interface, and the specific prompt or query you used to generate the output.
- Be transparent and honest about how you used the AI tool and how it contributed to your assignment. Explain what you learned from the AI tool, how you verified its accuracy and reliability, how you integrated its output with your own work, and how you acknowledged its limitations and biases.

You are accountable for any mistakes or errors made by the AI tool. Always check and edit the output before submitting your work. If you discover any inaccuracies or inconsistencies in the output after submission, notify the instructor immediately and correct them as soon as possible. Using AI tools in an unethical or irresponsible manner, such as copying or paraphrasing the output without citation or transparency, using the output as your own work without verification or integration, or using the output to misrepresent your knowledge or skills, is considered a form of academic dishonesty and will result in a zero grade for the assignment and possible disciplinary action. If you have any questions about what constitutes ethical and responsible use of AI tools, please consult with the instructor **before** submitting your work.

NOTE: Some instructors will also list specific acceptable and unacceptable uses or include a statement like “All written assignments, projects, and exams must be completed independently.”

The instructor reserves the right to amend this syllabus as necessary and will communicate amendments to students in the course. It is the responsibility of the student to regularly check emails and announcements for changes.

BIO212 GRADE CALCULATION WORKSHEET

Lecture Quizzes

Quiz 1 (25 points)	_____
Quiz 2 (25 points)	_____
Quiz 3 (25 points)	_____
Quiz 4 (25 points)	_____

Total Quizzes (100 points): _____

Lecture Exams

Exam 1 (100 points)	_____
Exam 2 (100 points)	_____
Exam 3 (100 points)	_____
Final Exam (100 points)	_____

Total Exams (400 points): _____

Lecture Homework

Total (75 points): _____

LECTURE SUBTOTAL (575 points) _____

Laboratory Exams

Exam 1 (50 points) _____

Exam 2 (50 points) _____

Exam 3 (50 points) _____

Exam 4 (50 points) _____

Total Exams (200 points): _____

Lab Reports/Question Sets Total (100 points): _____

LABORATORY SUBTOTAL (300 points) _____

COURSE TOTAL (875 points) _____

Letter grades are assigned according to the following scale:

875 to 788 points	A	611 to 525 points	D
787 to 700 points	B	524 and below	F
699 to 612 points	C		

There is NO provision for extra points.

To pass the entire course, a student must have no fewer than 180 points (60%) in the laboratory portion of the course.