



OWENS
COMMUNITY COLLEGE

SEMESTER

Life and Natural Sciences Department

School of Science, Technology, Engineering, and Mathematics

Program Name: Biology
Course Name: Anatomy and Physiology II – Laboratory
Course Number: BIO212 **Section:** BXX
Meeting Day(s) & Time(s):
Credits: 4 (combined lecture and lab)
Contact Hours: 3
Text: *Anatomy and Physiology 2, BIO212 Laboratory Manual, 3rd Edition*, Mika, Thomas, et. al., Van-Griner Publishing, 2023.
Instructor Name:
Office Location:
Office Hours:

Virtual Office Hours:

Owens CC Phone:

Owens CC Email:**

Additional Contact Information: 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.

COREQUISITES: None

PREREQUISITES: Anatomy and Physiology I (BIO211) or equivalent

TEXTBOOKS and MATERIALS:

- *Anatomy and Physiology 2, BIO212 Laboratory Manual, 3rd Edition*, Mika, Thomas, et. al., Van-Griner Publishing, 2023.

- *Human Anatomy and Physiology, 2nd Edition*, Amerman, Erin C., Pearson Education, 2019.
- *Mammalian Anatomy: The Cat, 2nd Edition*, Sebastiani, A. M., and D. W. Fishbeck. Morton Publishing Company, 2005 **OPTIONAL**
- Disposable gloves, colored pencils

*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.*

GENERAL 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.

Laboratory Objectives

This laboratory course is associated with the lecture portion of BIO 212. This course:

1. Consists of anatomical dissections and related exercises designed to reinforce concepts presented in lecture. To this end, students will acquire familiarity with standard anatomical dissection techniques and procedures.
2. Helps students identify, locate, and describe the parts of the human anatomy as well as understand the function of cells, tissues, organs, and organ systems that comprise the body and that are necessary to reproduce the human organism.
3. Gives students the skills to identify and describe the principles of chemistry that are involved in physiological processes that control the functioning of the human body.

Laboratory Student Learning Outcomes:

***Please refer to lecture syllabus for all learning outcomes and competencies**

COURSE RULES

Attendance

Attendance is taken at each laboratory session. If you are more than 30 minutes late for a laboratory you will not be permitted to attend that session. During the first 30 minutes your instructor covers the basic information necessary to successfully complete the laboratory, mandatory safety issues, precautions, and location of needed materials. After the session has begun, for safety purposes, your instructor needs to be working with all students, not covering the information for those students who are late. Therefore, if you are more than 30 minutes late, you will not be permitted to attend the laboratory and will be counted absent. You are encouraged to obtain missed information from other students in the laboratory.

You will not be permitted to submit laboratory assignments for sessions in which you have been counted absent.

To achieve success in this course, laboratory attendance is critically important. It is necessary to be present in order to get direct attention from the instructor on course material. Students cannot learn the laboratory material without this practical experience, and the practical experience will be a large portion of the laboratory exams. Student attendance in the laboratory is also vital for accreditation and registry exams for all the technologies.

- The student must be registered for the laboratory section that he/she is attending. Non-registered persons are not permitted in the laboratory.
- There are no make-up laboratory sessions.
- The student will not receive points for work from a missed laboratory session.

Safety

- **Eating, drinking and smoking are not permitted in the laboratory.**
- You must be registered for the laboratory section which you are attending. Non-registered persons are not permitted in the laboratory.
- Appropriate apparel is required in the laboratory at all times, including; cotton shirts, jeans, proper foot covering, proper shoes, etc.
- Loose clothing, shorts, sandals, open-toed shoes are not permitted.
- Full covering laboratory aprons are available as needed.
- More about apparel will be discussed at the first laboratory meeting.
- **Safety goggles MUST BE WORN while experiments are being conducted. The laboratory instructor will announce when goggles may be removed. The appropriate eyewear must be splash goggles, which are provided to each student. NO impact glasses are to be worn at any time.**

Student Responsibilities

- Read the laboratory assignment and appropriate lecture material prior to each laboratory session. It is recommended that a laboratory notebook be kept to record observations, experimental results, and instructor notes.
- Be on time and use the full laboratory period.
- Turn in all work as assigned, ask questions, and participate in each activity.
- **CLEAN UP:** Be certain that your area of the laboratory table is properly cleaned after use. Wash and return all glassware and other instruments to the proper areas. Check the sink to be sure that it is clear of all glassware and trash. Please make sure that all refrigerator doors are firmly closed in those rooms where refrigerators are present.

GRADING

The evaluation in this course consists of the following:

EXAMS

Students are expected to be present after exams 1, 2, and 3 to continue the laboratory session.

Exam 1 is worth 50 points. It will be over Activities 1, 2, and 3 material and be given at the start of Activity 4. It may include a variety of question formats such as multiple choice, fill-in-the-blank, matching, and short essay. It will include **one** human circulatory pathway, given at random out of 11 possible pathways, (worth 25 points). Bring a pencil and red and blue pencils (not pens) and an eraser for coloring in arteries and veins on the circulatory pathway diagram. Some of the questions will be of a practical format including 10 organs/blood vessels, fill-in-the-blank identification questions, (worth 10 points) on preserved cats. Practical stations will not be timed. There will be questions over the endocrine system, lymphatic system, blood cells and blood typing etc. (worth 15 points) which could include multiple-choice, fill-in-the-blank, matching, or short essay questions. Scores will be in whole points only; no fractions of a point will be assigned. The total time allowed for the exam will be determined by the instructor.

The following are examples of errors on the circulatory pathway and point deductions for such errors:

- 1 Omitting indication of **LEFT VENTRICLE** or **RIGHT ATRIUM**
Omitting indication of **ARTERIES/ARTERIOLES** or **VEINS/VENULES** in kidney
- 2 Indicating **INFERIOR** instead of **SUPERIOR** or *vice versa*
Indicating **VEIN** instead of an **ARTERY** or *vice versa*
Omitting indication of a **VEIN** or an **ARTERY**
Indicating **THORACIC AORTA** as an **ARTERY** (i.e., **THORACIC ARTERY**)
Indicating **ABDOMINAL AORTA** as an **ARTERY** (i.e. **ABDOMINAL ARTERY**)
Indicating **AFFERENT** or **EFFERENT ARTERIOLE** (in kidney) as an **ARTERY**
Omitting indication of **RIGHT** or **LEFT COMMON CAROTID ARTERY**
- 3 Indicating a wrong vessel, organ or chamber in a pathway
Omitting a vessel or organ in a pathway
Adding a vessel or organ not in a pathway
Indicating **CAPILLARIES OF THE LIVER** in pathways 7 through 11
- 4 Missing route to or back from an organ

Exam 2 is worth 50 points. It will be over Activities 4, 5, and 6 material and will be given at the start of Activity 7. It will cover heart, respiratory system and vital signs material as detailed by your instructor. It may include a variety of question formats such as multiple choice, fill-in-the-blank, matching, and short essay. It may include practical type questions at stations that will not be timed (for example, heart anatomy using preserved hearts). Scores will be in whole points only; no fractions of a point will be assigned. The total time allowed for the exam will be determined by the instructor.

Exam 3 is worth 50 points. It will be over Activities 7 and 8 material and will be given at the start of Activity 9. It will cover digestion and urinary system material and may include a variety of question formats such as multiple choice, fill-in-the-blank, matching, and short essay. It may include practical type questions at stations that will not be timed (for example, kidney anatomy using preserved kidneys). Scores will be in whole points only; no fractions

of a point will be assigned. The total time allowed for the exam will be determined by your instructor.

Exam 4 is worth 50 points. It consists of questions from the reproductive and heredity in Activity 9 through Activity 12. Stations are not timed. Overall exam length will be determined by the instructor. The exam format includes multiple-choice, matching, essay, fill-in, and practical identification questions (including specimens, microscope slides, models) covering material in Activity 9 through Activity 12.

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.

Contact the instructor **immediately** if a laboratory exam must be missed. A student has one week from the date of the missed exam to make up exams 1, 2 and 3. Exam 4 must be made up within two days, as it is given at the semester end.

Any exam not taken during the regularly scheduled laboratory period will be essay format. This includes if the student arrives after the exam is over. Each exam can only be taken once. A student who misses a laboratory exam may choose one of the following options:

- Take a make-up exam by the date and time assigned by the instructor. **All make-up exams will be an essay format.**
- Not take the exam and receive 0 points.

REPORT

Activity 7 will require a written report. Points will be awarded for the report with a maximum of 10 possible points for each. When points are awarded for the laboratory report, the grade is final. There is no provision for resubmission for additional points. Generally, the laboratory report will be structured in the following format:

Introduction/Procedure

The Introduction will consist of a brief paragraph outlining the main principles and concepts to be investigated or demonstrated in the laboratory activity.

Results

The Results section requires data reporting in a variety of different forms including diagrams, charts, tables, graphs, etc.

Discussion

The Discussion section requires an expanded explanation of the main principles and concepts of the Activity.

Conclusion

In the Conclusion formulate a brief summary of the entire laboratory activity. Do not restate comments from previous sections of the report. A useful format is to identify a few points that were learned, and expand on these points.

QUESTION SETS

There are a series of questions covering concepts in Activities 1- 6, 8-12. There is a maximum of 10 points possible for each question set.

When points are awarded for a question set, the grade is final. There is no resubmission provision for additional points.

Question sets and the laboratory report are due at the beginning of the laboratory period following the activity in which the assignment is given. Late assignments will receive a 20% deduction from total points possible. Any assignment over 1 week late will receive a zero (0%) grade. No assignments will be accepted at the Toledo Campus Life and Natural Sciences Department office

- There are NO make-up laboratory sessions.
- You cannot receive points for any work from a missed laboratory session.
- Scores will be awarded in whole number points only.
- All work must be each student's own effort.
- No photocopied reproductions will be accepted.

GRADING SUMMARY

200 points	Exams 1, 2, 3 and 4 are worth 50 points each
100 points	(11) Laboratory Reports or Question Sets at 10 points each
	The SINGLE lowest laboratory report OR question set score will be dropped from the final laboratory point total.
300 points	TOTAL

There is absolutely NO provision for any EXTRA CREDIT to be given beyond the designated points for exams, laboratory reports, and question sets.

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

Laboratory sections do not award letter grades, only point totals. The laboratory points earned are totaled and forwarded to your lecture instructor. This point total is added to the lecture point total. The final grade for the course is determined from points earned in both lecture and laboratory. See your lecture syllabus for the course grading summary and letter grade scale.

ACTIVITIES

- 1 Endocrine System – *Question Set (10 points)*
- 2 Blood, Blood Vessels, Organ Review – *Question Set (10 points)*
- 3 Peripheral Circulation, Lymphatic System – *Question Set (10 points)*
- 4 **Exam 1- Endocrine System, Blood, Blood Vessels, Peripheral Blood Vessels, Lymphatic System (50 points)**

Cardiovascular: Heart, Conduction System – *Question Set (10 points)*
- 5 Respiratory System – *Question Set (10 points)*
- 6 Vital Signs – *Question Set (10 points)*
- 7 **Exam 2 – Heart, Conduction System, Respiratory System, Vital Signs (50 points)**

Digestive System, Nutrition and Enzymes – *Lab Report (10 points)*
- 8 Urinary System – *Question Set (10 points)*
- 9 **Exam 3 – Digestion System, Nutrition, enzymes, Urinary System (50 points)**
Reproductive System – Meiosis, Gametogenesis – *Question Set (10 points)*
- 10 Reproductive System – Comparative Embryology and Development – *Question Set (10 points)*
- 11 Heredity – Classical Genetics
- 12 Heredity – Karyotyping, Trait Analysis – *Question Set combined from Activity 11 and Activity 12 (10 points)*
- 13 **Exam 4 – Reproductive System, Heredity (50 points)**

Policy for Acquisition and Care of Animals and Preserved Specimens

The Owens Community College Science Department recognizes that one of the major goals of life science education is to instill respect and appreciation for all living organisms and their environment. We believe you have a right to expect and we assure you that all preserved animals and specimens used are legally and properly obtained as required by applicable government regulations. All animals were euthanized humanely, under the guidance of consulting veterinarians.

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, paraphraser, 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.”