



OWENS
COMMUNITY COLLEGE

SEMESTER

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

Program Name: Biology
Course Name: Anatomy and Physiology 1 – Laboratory
Course Number: BIO211 **Section:** BXX
Meeting Day(s) & Time(s):
Credits: 4 (combined lecture and lab)
Contact Hours: 3
Text: *Anatomy and Physiology Laboratory Manual 3rd Edition,*
Mika, Thomas, et. al., Van-Griner Publishing, 2023.
Instructor Name:
Office Location:
Office Hours:
Virtual Office Hours:
Owens CC Email:**
Phone:

Additional Contact: **Please use only Owens email for course communications

CATALOG DESCRIPTION: Focuses on an integrated approach to life science centering on the human body. Discusses life functions necessary to power the human body: to move, control, regulate. Structure and function of the cell are stressed with its relationship to other levels of organization within the body: tissues, organs and organ systems. Discusses biochemistry essential to life processes, the integumentary system provides the understanding for protection and homeostatic functions, the skeletal system provides the basis for an understanding of support of the body, the muscular system provides the basis for an understanding of movement, and the nervous system allows control and regulation of the body. A student retaking the course must repeat both the lecture and the laboratory portion.

COREQUISITES: None

PREREQUISITES: None

TEXTBOOKS and MATERIALS:

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

*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 power, support, and move the parts of 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 BIO211. This course:

- Consists of experiments that will reinforce lecture topics such as cells and tissues, DNA isolation, osmosis and diffusion, the skeletal system, muscular system and nervous systems including the parts of the brain, the CNS and PNS. Standard techniques and procedures are stressed.
- 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.
- 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.

- You must be registered for the laboratory section that you are attending. Non-registered persons are not permitted in the laboratory.
- There are no make-up laboratory sessions.
- You will not receive any points for any of the 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 could include the following types of questions: multiple-choice, fill-in the blank, matching, and short essay. It will be given at the beginning of Activity 5, covering material from Activities 1 through 4. Some of these questions will be of a practical format. Stations are not timed. Overall exam length will be determined by the instructor. The final point total will be in whole numbers only.

Exam 2 is worth 50 points. It is a **timed-station format** given at the beginning of Activity 8 covering material from Activities 5 through 7. The exam covers bones and structures of the appendicular and axial skeleton as well as questions from Activity 5 diffusion and osmosis. It will consist of 40 practical bone questions each worth one (1) point and 10 points from questions based on diffusion and osmosis. The 40 practical stations will NOT be multiple-choice, and NO word list or word bank will be given. Student will write out answers on a exam sheet provided by the instructor.

For the exam, bones will be marked (e.g., painted structure), and arranged around the room at 40 stations, one (1) bone at each station. The student will rotate from one station to the next, as directed by the instructor. The student will be given one (1) minute at each station to identify the marked structure(s) and write the name on an answer sheet. When time is called and the student has moved, student may not go back to that station.

An answer must be complete in order to be considered correct. A complete answer consists of both the name of the bone AND the name of the bone structure where appropriate. For example, a correct answer would be “lesser trochanter of the femur” or “trochlea of the humerus.”

Each question is worth one (1) point. There will be NO partial credit given for an incomplete answer. The answer must be given EXACTLY as it appears on the appendicular and axial bone lists in the laboratory manual. For example, “head of the femur” is the correct answer and not simply “head.”

Points will not be deducted for slightly misspelled words, provided that the answer is not in actuality the name of a different structure. For example, the “coracoid process” and the “coronoid process” cannot be interchanged. The item must be identified completely. There is no partial credit.

Do not alter the test bones in any manner.

Diffusion and osmosis questions may be in multiple-choice, fill-in the blank, practical, and short essay as determined by the instructor. A total of 10 points will be derived from this portion of the exam.

Exam 3 is worth 50 points. It has a **timed-station format** given at Activity 11. It will consist of practical stations covering the material over the cat and the human musculature covered in Activities 8 and 9. The exam will consist of human muscle illustrations or models, cat photographs or specimen muscles, and muscle tissue questions. Only whole number points will be awarded for each answer with 50 points maximum for the test. Each student will have 45 seconds per muscle to make the identification. The student may not return to a question after it has been answered. Identification of muscles will not be multiple

choice and will be practical in nature. **NO** word list will be provided. Due to the class size relative to the number of stations, students may be divided into two groups to take the exam. **Exam 4 is worth 50 points.** It consists of questions from the nervous system in Activities 10 through 12, including brain specimens and sense organs. Stations are not timed. Overall exam time will be determined by the instructor. Only whole number points will be awarded for each answer. There will be 2 sympathetic division diagrams which include a white/gray rami diagram, one (1) parasympathetic division diagram and one (1) of 3 spinal plexus diagrams (20 points). There will be 5 questions over the cat nerves and 5 questions over human nerves (10 points). There will be 10 questions over sheep brain specimens and human brain models/diagrams (10 points). There will be 10 questions over the sense organ activities, including the cow eye specimen, human eye model/diagrams and ear model/diagrams (10 points).

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 an exam must be missed. A student has one week from the date of the missed exam to make up Exams 1, 2 or 3. Exam 4 must be made up within two days, as it is given at the end of the semester.

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

- Take an essay exam by the date and time as assigned by the instructor.
All make-up exams will be in an essay format. The number of questions will be determined by the instructor for a maximum of 50 points. Partial credit will be given on essay questions.
- Not take the exam and receive 0 points.

REPORTS

Activities 2, 3, and 5 will require a written report. Points will be awarded for the report with a maximum of 10 possible points for each. After points are awarded for a laboratory report, the grade is final. There is no provision for resubmission for additional points. Generally, a 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 the main concepts in Activities 1, 4, 6, 7, 8, 9, 10-11 and 12 with a maximum of 10 points possible for each.

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

All assignments are due at the beginning of the laboratory period following the session 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 (100 points possible).
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 Cells, Microscopy, Terminology, Organ Systems – *Question Set (10 points)*
- 2 Biologically Important Molecules – *Laboratory Report (10 points)*
- 3 DNA Isolation and Electrophoresis – *Laboratory Report (10 points)*
- 4 Tissues, Cell Cycle and Mitosis – *Question Set (10 points)*
- 5 **EXAM 1 (50 points)**, Diffusion and Osmosis – *Laboratory Report (10 points)*
- 6 Appendicular Skeleton – *Question Set (10 points)*
- 7 Axial Skeleton – *Question Set (10 points)*
- 8 **EXAM 2 (50 points)**, Muscles, superficial – *Question Set (10 points)*
- 9 Muscles, deep – *Question Set (10 points)*
- 10 Muscle Review, Central Nervous System – Brain
- 11 **EXAM 3 (50 points-muscles only)**, Plexuses, Cat Nerves, Autonomic Nervous System Pathways –
Question Set combined from Activity 10 and Activity 11 (10 points)
- 12 Sense Organs – *Question Set (10 points)*
- 13 **EXAM 4 (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, 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.”