



Figure 1: Owens Logo.

**Course Syllabus
SEMESTER
School of Nursing and Health Professions
Department of Sonography**

<i>Course Name:</i>	Intro to Basic Physics for Sonographers
<i>Course & Section Number:</i>	MIT 106-XXX
<i>Meeting Day(s) & Time(s):</i>	ON-LINE
<i>Credits:</i>	2
<i>Contact Hours:</i>	2
<i>Instructor's Name:</i>	
<i>Office Hours & Location:</i>	
<i>OCC Phone:</i>	
<i>OCC Email:**</i>	
<i>Additional Contact Information:</i>	

****Please use only Owens email for course communications.**

Catalog description: Introduction of general physics concepts and related mathematics. Concepts covered will include motion, mechanics, energy, properties of matter, thermodynamics, basic electricity, light and sound properties and their relationship to diagnostic medical sonography.

Prerequisite: None

Corequisites: None

Course Materials:

CK-12 Basic Physics: online textbook and resources

Blackboard

Microsoft Word 2010 and Microsoft PowerPoint 2010 (or viewers)

Scientific Calculator

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

What You Will Learn in the Course

Course Objectives:

This course will:

1. Provide students with the basic physics principles used in their study of sonography.
2. Review basic mathematics to solve problems in physics involving formulas and conversions.
3. Describe laws of motion and energy that will correlate with ultrasound.
4. Examine optic reactions and sound wave concepts

Student Learning Outcomes:

Students will:

Outcome	Where Assessed
1. Demonstrate knowledge of basic physics terminology and application of the metric system for unit conversions	Tests, Lab Activities, Discussions, Assignments
2. Define motion, including velocity and acceleration, and identify Newton’s Laws of Motion	Tests, Lab Activities, Discussions, Assignments
3. Describe optic reactions, including reflection and refraction.	Tests, Lab Activities, Discussions, Assignments
4. Explain basic concepts of heat and energy transfer.	Tests, Lab Activities, Discussions, Assignments
5. Identify wave concepts, such as types and interferences	Tests, Lab Activities, Discussions, Assignments
6. Apply concepts of sound waves, including propagation, intensity, and frequency in relation to ultrasound.	Tests, Lab Activities, Discussions, Assignments

Outcome	Where Assessed
7. Demonstrate knowledge of the Doppler effect and how it is applied to basic ultrasound	Tests, Lab Activities, Discussions, Assignments

Technology, Lab, and File Requirements:

Microsoft Office 365

<https://www.owens.edu/office365/>

Respondus

<https://download.respondus.com/lockdown/download.php?id=139313370>

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 123) 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.

Student Responsibilities & Instructor Expectations

Student Responsibilities:

- You are expected to attend weekly classes and arrive on time. If you are going to be absent, please email your instructor before class begins. Afterward, review the assignment calendar to see what was missed and reach out if you have questions.
- You are expected to fully engage with the course material and consistently put forth your best effort in lecture and lab.
- If you are unable to complete an assignment on time, contact your instructor as soon as possible to discuss your options.
- Email is the preferred method of communication outside of office hours. Please include clear and specific details in your message so your instructors can respond efficiently.
- You are encouraged to ask questions or request clarification. Unless we hear otherwise, we will assume you understand the material. Each class builds on previous concepts, so staying current is important.
- Show respect for your instructors, classmates, and the learning environment.
- You are expected to follow all guidelines and procedures outlined in the Sonography Department Procedure Manual.
- For technical issues related to Blackboard, contact the Owens Help Desk.

Instructor Expectations:

- The instructor will be respectful of your time and begin and end class on time. If any changes to class times occur, you will be notified by email.
- Your instructor's goal is to review and return assignments that require student corrections within three days of submission. Assignments that do not require corrections or resubmission may take longer to be fully graded. If it has been more than three days and you are waiting on feedback for an assignment you believe may need revision, please email your instructor.
- Your instructor checks their email several times a day, but also has responsibilities outside of teaching this course. They will do their best to respond to your email with 24 hours on weekdays and within 72 hours on the weekends.
- Office hours are available outside of class time to support you with any questions or concerns related to the course. Please don't hesitate to make use of this time.
- Your instructor welcomes and encourages questions.
- Teaching is a two-way process, and your instructor hopes to learn from your insights, questions, and feedback throughout the course.

How Grades are Determined and Major Assignments

Grading Procedure:

Grades will be calculated on the following scale.

93% and Above	A
85% to 92%	B
76% to 84%	C
60% to 75%	D
59% or Below	F

If the percentage earned is less than 76% for the course, the student will earn a grade of “**D or F**” for the course and be removed from the program.

The final grade for the course will be computed using the following weights.

Evaluation Measure	Value	Student Learning Outcome Assessed
Tests x2	40%	1-7
Lab Activities	20%	1-7
Discussions	15%	1-7
Assignments	25%	1-7
Total	100%	

****Please note that ½ point will be deducted from all homework, tests, and assignments for each spelling error. Using abbreviations will also result in a ½ point deduction. ***

Tests:

Two online tests will be given and comprise 40% of the total course grade. All tests will be multiple choice, true/false and problem solving in nature. All tests will be due by the date at 11:59 pm given on the syllabus calendar. All tests will be available on Blackboard three (3) days prior to the due date. All tests will be done with Respondus. Students will need to use the computer camera to allow recording during the test. Each test has a set time limit pertaining to how many questions there are and the type of questions. Any student who is unable to take the exam as scheduled must notify the course instructor at least 30 minutes prior to the due date in order to receive full credit. If no notification is received prior to missing the test a ten (10) point deduction will be taken from the score of the make-up test. The makeup test will be taken within three (3) days of the original test due date, or the score will be reduced by an additional ten (10) points. If the exam is not taken by the last regularly scheduled day of the course, then a 0 will be assigned. Students are responsible for reaching out to the instructor.

Lab Activities:

Lab activities will be 20% of the grade. Labs will consist of an assignment that may include watching videos and answering questions (multiple choice, fill-in, and essay) on Blackboard. Photos and answers to any written lab portions may need to be uploaded into Blackboard. Labs are due on the date designated on the Syllabus by 11:59 pm that day. Late assignments will be accepted at half credit up to 24 hours past the due date. Beyond 24 hours after the due date, they will not be accepted. Student is responsible for reaching out to the instructor. Use only JPEG file format.

Discussions:

Discussions will be 15% of the grade. There will be seven (7) in all. Each discussion assignment will be posted on the Discussion Board in Blackboard. Students will be required to participate in the discussion to receive credit. Due dates to each discussion will be listed on the calendar in the Syllabus, and due by 11:59 pm that day. Late assignments will be accepted at half credit up to 24 hours past the due date. Beyond 24 hours after the due date, they will not be accepted, unless prior approval is given by the instructor. Students are responsible for reaching out to the instructor.

Assignments:

Assignments will be 25% of the grade. There will be six (6) assignments. Assignments for each chapter will be due on the date at 11:59 pm designated on the calendar given in the Syllabus. Late assignments will be accepted at half credit up to 24 hours past the due date. Beyond 24 hours after the due date, they will not be accepted, unless prior approval is given by the instructor. Students are responsible for reaching out to the instructor. Students will have the opportunity to attempt the homework two (2) times. The last graded attempt before the due date will be the final assignment grade.

Lecture Assignment Calendar

Week	SLO	Topic	Reading/ Homework
One DATE CLASS CODE:	1	Chapter 1 Introduction to Physics and Math Tools	cK12 Reading: Introduction to Physics and Math Tools Sections Ch 1 Assignment Discussion Questions Practice test using Respondus All due by DATE at TIME
Two DATE	2	Chapter 2 Objects in Motion (Motion in One-Dimension)	cK12 Reading: Objects in Motion Sections Ch 2 Assignment and Lab 1 Discussion Questions All due by DATE at TIME
Three DATE	2	Chapter 3 Forces	K12 Reading: Forces Sections Ch 3 Assignment and Lab 2 Discussion Questions due by DATE at TIME
Four DATE	1,2	Test 1	Test 1 due DATE at TIME
Five DATE	3,4	Chapter 4 Introduction to Energy	cK12 Reading: Introduction to Energy Sections Ch 4 Assignment and Lab 3 Discussion Questions due by DATE at TIME
Six DATE	3,5	Chapter 5 Waves	cK12 Reading: Waves Sections Ch 5 and 5B Assignments Discussion Questions due by DATE at TIME

Seven DATE	6,7	Chapter 6 Sound	cK12 Reading: Sound Sections Ch 6 and 6B Assignments and Lab 4 Discussion Questions due by DATE at TIME
Eight DATE	3-7	Test 2	Test 2 due DATE at TIME Final Discussion due DATE at TIME

Disclaimer: The instructor reserves the right to amend this syllabus as deemed necessary and will communicate such amendment to the students in the course. Please note that while unlikely, there is a possibility courses might need to change the delivery method due to external issues like public health concerns, weather issues, etc. If this happens, the college will communicate any changes via email and/or other communication methods.