



Lincoln University

Sci 10 – Physical Science

COURSE SYLLABUS SPRING 2020

Instructor: Professor Len Filane
Lecture Schedule: Wd: 12.30 – 3.15 pm
Credits: 3 units / 45 lecture hours
Level: Introductory (I)
Office Hours: Wd. 3.15-4.15 pm, teacher's lounge, main bldg., 4th fl.
e-mail: lfilane@lincolnuca.edu
Textbooks: PHYSICS, v. 1 by James Walker, 4th Ed.

Last Revision: Jan. 16, 2020

DISCLAIMER

This syllabus may be changed or updated according to the instructor's discretion.

CATALOG DESCRIPTION

The study of matter and energy, principles and practical applications in Physics, Chemistry, Mechanics, Electronics, Geosciences and Astronomy.

COURSE LEARNING OUTCOMES¹

- A). Students demonstrate their ability to explain simple natural phenomena around us using the language of Physics.
- B). Students demonstrate their ability to solve exercises and simple problems in General Physics using physical symbols and formulas, and with the help of the basic mathematical concepts.
- C). Students demonstrate their understanding of the physical concepts learned in class.

	COURSE OUTCOME	PROGRAM LO	INSTITUTIONAL LO	ASSESSMENT ACTIVITIES
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¹ Detailed description of learning outcomes and information about the assessment procedure are available at the [Center for Teaching and Learning](http://ctl.lincolnuca.edu) website (ctl.lincolnuca.edu).

1	Students are expected to demonstrate the knowledge of the basic concepts and techniques of physics and the skills in solving physics problems.	PLO 1	ILOs 1a, 2a,3a	HW, Class assignments, class participation, tests.
2	Students are expected to develop logic, application and interpretation of the most fundamental physics concepts. The class does not require previous knowledge of physics but requires the knowledge of college algebra, common sense and practical logic.	PLO 2	ILO 1a and 6a	HW, Class assignments, class participation, tests.
3	Confidently communicate using physics symbols and terminology.	PLO 3		HW, Class assignments, class participation, tests.
4	Be able to choose an appropriate physics analysis for the type of data they plan to analyze, select an appropriate model, conduct and interpret the analysis, and write down the results.	PLO 4	ILO1a, 2a, 5a	HW, Class assignments, class participation, tests.

INSTRUCTIONAL METHOD

Fifteen (15) Lectures covering all the topics listed in the Course Description.

Weekly three (3) hours Lecture, including demonstrations of the solutions for problems by the instructor, solving problems in class independently and in groups, class discussions, “student teaching”, at-the-board students’ demonstrations of the solutions, frequent discussions of the homework.

Students are strongly encouraged to use additional resources, such as the Internet, the library, etc.

Assignments require students to actively use resources of the library. Detailed guide to the resources of the library, as well as the description of Lincoln University approach to information literacy, are available at the Center for Teaching and Learning website (ctl.lincolnuca.edu).

LECTURE CONTENT

- Introduction
- Kinematics
- Vectors
- Newton’s Laws
- Work and Energy
- Linear Momentum
- Gravity
- Oscillations
- Waves and Sound
- Temperature and Heat
- The Laws of Thermodynamics
- Electricity and Magnetism
- Special Topics

ACADEMIC HONESTY & INTEGRITY HONOR CODE

The faculty, administration, and staff reinforce academic honesty and principles of academic honor. Independent learning is vital to the requirements of honesty and integrity in the performance of academic assignments, both in the classroom and outside. Students should avoid academic dishonesty in all of its forms, including plagiarism, cheating, and other forms of academic misconduct. The University reserves the right to determine what constitutes a violation of academic honesty and integrity.

ASSESSMENT

TWO-FOUR CLASS QUIZZES

HOMEWORK

CLASS WORK/CLASS PARTICIPATION

MIDTERM EXAM

FINAL EXAM

CALCULATION OF FINAL GRADES:

Homework:	7%
Quizzes :	20%
Midterm Exam:	23%
Final Exam :	35%
Class Participation:	15%

GRADING SCALE: (Should follow Department and/or College Template)

Grade	A	B	C	D	F
GPA Points	4.0	3.0	2.0	1.0	0
%	90-100	80-89	70-79	60-69	less than 60

Re-taking or making up of the quizzes and exams will not be offered.

CLASS WORK (class participation):

Your goal should be to demonstrate the grasp of the concepts, ability to solve problems and critical thinking skills in analyzing them. You should strive to ask relevant questions, volunteer relevant answers, as well as volunteer to solve problems on the board, and actively participate in class discussions.

If you were tardy or missed a class you did not participate in class work. It may be reflected in your grade for class work.

Class time is for learning only. Please, refrain from discussing any issue that is not directly related to the process of learning and concept understanding.

Issues related to grades for tests or teaching methodology should be raised only outside of class time.

Class work is graded on a scale of 0-10.

HOMEWORK

Written HW is graded on a scale 0-10. Since its impossible for me to exactly predict the rate of covering the material, I will give homework every class, as we move forward. I will collect homework on selected days only. Bring your current homework to every class. Your homework must be in a ring-binder, stapled, be neat and legible. Avoid submitting "dog ears"! If you write chaotically I would not be able to follow your work, hence I will not be able to grade it. HW that does not meet the above outlined requirements will be rejected and awarded zero points.

Show your work in detail. If you do not show all the work, I will reduce your homework credit. Just showing the answer will not be accepted for any credit.

All homework is to be done by the enrolled student and must be your own work. Any attempt to copy or re-use homework or share the same work between the students will result in zero credit.

No late homework will be accepted. I will not accept any HW after my announcement of the end of the collection process. If you know that you will be absent in class, please email your scanned

homework to me prior to the beginning of the current class. If you have a question or an issue regarding your HW, then the best way to resolve it is after class hours. Do not copy the solutions from the instructor's solution manual or online. If you do it you will be guilty of plagiarism which is a violation of student conduct code, and may result in you being disciplined, suspended from class or expelled from the school.

UNIVERSITY ATTENDANCE POLICY:

Lincoln University uses the class method of teaching, which assumes that each student has something to contribute and something to gain by attending class. It further assumes that there is much more instruction absorbed in the classroom than can be tested on examinations. Therefore, students are expected to attend all regularly scheduled class meetings and should exhibit good faith in this regard.

INSTRUCTOR'S ATTENDANCE POLICY:

Attendance is mandatory. I frown on tardiness. If you are frequently late to class, please review your schedule and make the necessary adjustments. Late arrivals are disruptive to class, they adversely affect the performance of all, myself including.

If you are late to a quiz or exam you will not be allowed to take it.

UNIVERSITY ACADEMIC INTEGRITY STATEMENT:

Students are responsible for proper conduct and integrity in all of their scholastic work. They must follow a professor's instructions when completing tests, homework, class work and laboratory reports, and must ask for clarification if the instructions are not clear.

CLASS SCHEDULE

WEEK 1 Motion in one dimension. Distance, displacement, velocity, speed, acceleration	WEEK 9 Rotational kinematics and dynamics
WEEK 2 Vectors, motion in two dimensions	WEEK 10 Oscillations
WEEK 3 First, Second, Third Newton's Laws.	WEEK 11 Waves and Sound
WEEK 4 Friction, springs.	WEEK 12 Temperature and heat. Thermodynamics
WEEK 5 Work, kinetic energy.	WEEK 13 Theory of Relativity. Time Dilation
WEEK 6	WEEK 14

Potential energy, conservation of energy	Theory of Relativity. Mass and distance, linear dimensions.
WEEK 7 The Newton's Law of Universal Gravitation Gravitational potential energy	WEEK 15 Review
WEEK 8 Linear Momentum. Momentum conservation. MIDTERM EXAM	