PHYSICS 2101 - Physics for Science & Engineering I

Section A01

Section A01 of this course is a hybrid course (part online activities and part in-class activities)

Section	A01 MW 11:00 am - 12:15 pm EPIC G256
Instructor	Dr. Pedram Leilabady Office: 340 Grigg Hall Email: pleilaba@uncc.edu
Office Hrs.	MTWR: 9:30 – 10:30 AM in Grigg Hall 340

COURSE:

Description: This is the first course of the calculus-based introductory physics sequence. The course covers concepts of linear and circular motions, force, impulse-momentum, work-energy, rotational motion and oscillatory motion. This course is required for most science and engineering majors.

Objectives: To develop students' problem solving skills in a systematic manner, while providing a balance of quantitative reasoning and conceptual understanding.

Outcomes: Upon the completion of this course, students should be able to: 1) accurately identify all forces acting on an object and draw a free-body diagram; 2) state and apply appropriate laws of physics to solve mechanics problems; 3) use the preferred SI units in estimates and calculations involving mechanical quantities; 4) apply conservation of energy, work-kinetic energy, and impulse-momentum theorems to solve mechanics problems; and 5) multi-dimensional, rotational and oscillatory motion problems for both system of point-particles and rigid objects.

Structure: Students have the responsibility to study the concepts prior to each class. Class time is used to explain content and deal with misconceptions, subtleties, connections and applications.

All course material is available on Canvas. Please study the course syllabus and schedule also posted on Canvas carefully. Please proceed by reviewing the lecture notes, viewing any lecture videos and attempting the practice problems posted on Canvas per the schedule of topics/chapters listed in the course schedule.

Please note that the videos were produced a number of years ago when the text used for the course was different to the one used currently. Therefore, any specific reference to chapters/sections in the text, as well as problem numbers should be ignored.

Please note the schedule of Midterm Exams and the Final exam listed in the course schedule. Midterm Exams and the Final Exam will be administered on campus.

You should self-enroll on The Expert TA using course key in the syllabus, which you will find on Canvas. There are also more practice assignments for you to attempt on WebAssign. You should self-enroll on WebAssign using the class key, which you will also find on Canvas.

Self-Assessment: There will be practice problems posted weekly on the Expert TA. The practice problems are meant to act as means of self-assessment, and their scores will count as bonus points towards the final grade.

Learning: Study Groups

Attending **Supplementary Instructional Sessions (SIS)** is *highly recommended*.
For further information on SIS visit http://www.ucae.uncc.edu/ University Center for Academic Excellence (Fretwell), Phone: 704 687 2162.

SI Schedule for the semester: To be announced

Physics Department Resource Center is open every MTWRF at Burson 135A.

For individual free tutoring, visit http://www.ucae.uncc.edu/ University Center for Academic Excellence (Fretwell), Phone: 704 687 2162.

Math Skills

An operational knowledge of basic college algebra, trigonometry and calculus (differentiation and integration) skills are essential for your success in science and engineering courses. The following are good websites for self-assessing your understanding of these topics as requisite for your introductory physics courses.

http://www.krysstal.com/trigonometry.html
http://www.krysstal.com/algebra.html
http://www.wtamu.edu/academic/anns/mps/math/mathlab/col_algebra/

It is highly encouraged that you visit these online math tutorial sites to fortify your grasp of basic math skills. Please make use of the self-assessment tools and tutorials within the referenced sites.

A very helpful site for Math and Physics are:

http://www.khanacademy.org/
http://mathfortress.com

COURSE FORMAT

- **Online Lectures**

  Full lecture videos and notes, as well as practice problems and their solutions are posted on Canvas.

  The online lectures cover the corresponding sections of the text. It is important to study and understand the step by step solution of online examples in order to be able to successfully attempt the **Practice Problems** on Expert TA.

- **Midterm Exams**

  There will be 3 Midterm exams. Please note the dates, times and locations for Midterm exams in the Course Schedule posted on Canvas.

- **Final Exam**

  Final Exam is on Thursday, May 4, 2017, from 8:00 AM – 10:30 AM. Location TBD.
  ALL STUDENTS TAKE THE FINAL EXAM ON CAMPUS.

  Every student is obligated to take the Final Exam on the scheduled date and time as indicated above. NO EXCEPTIONS! Missing the final exam will result in a grade of F.
  The Final Exam is scheduled by the university, and its time and place can not **be changed.**

  IMPORTANT NOTE: ONLY BASIC SCIENTIFIC CALCULATORS ARE ALLOWED IN THE FINAL EXAM CALCULATORS WITH GRAPHING AND/OR MEMORY CAPABILITIES ARE NOT ALLOWED. CELL PHONES ARE NOT ALLOWED DURING THE FINAL EXAM. DO NOT BRING YOUR CELL PHONE TO THE EXAM ROOM.

GRADING:

Midterm 1	25%
Midterm 2	25%
Midterm 2	25%
Final Exam (Comprehensive, All sections)	25%
TOTAL	100%
Expert TA Practice Assignments (Bonus Points)	5%

Grades are assigned using a 10-point grading scale: A = 90.0-100.0, B = 80.0-89.9, etc.

TEXT:

Physics for Scientists and Engineers, D. M. Katz, Cengage Learning.

ISBN# **9781337039154**

Online Course Management Tools:

All students self-register on The Expert TA (http://theexpertta.com/#home)

Note: Registering in multiple sections, multiple times in a section or using a false name is considered violation of academic integrity. If you mistakenly register to a wrong section then it is your responsibility to get in touch with The Expert TA helpdesk to move your name to the correct section.

The Expert TA:

MAKE SURE YOU REGISTER IN THE CORRECT SECTION!

SECTION	COURSE CODE
A01	**UST35NC-46BC93-1D9**

Academic Integrity

Academic honesty and integrity are essential to the existence and growth of an academic community. Without maintenance of high standards of honesty, members of the instructional faculty are defrauded, students are unfairly treated, and society itself is poorly served. Maintaining the academic standards of honesty and integrity is ultimately the formal responsibility of the instructional faculty; and this responsibility is shared by all members of the academic community. UNC Charlotte strives to create an academic climate in which the dignity of all individuals is respected and maintained. Therefore, we celebrate diversity that includes, but is not limited to ability/disability, age, culture, ethnicity, gender, language, race, religion, sexual orientation, and socio-economic status.

Students have the responsibility to know and observe the requirements of The UNCC Code of Student Academic Integrity (Catalog p. 275). This code forbids cheating, fabrication or falsification of information, multiple submissions of academic work, plagiarism, abuse of academic materials, and complicity in academic dishonesty. Any special requirements or permission regarding academic integrity in this course will be stated by the instructor, and are binding on the students. Academic evaluations in this course include a judgment that the student's work is free from academic dishonesty of any type; and grades in this course therefore should be and will be adversely affected for academic dishonesty. Students who violate the code can be expelled from UNCC. The normal penalty for first offense is zero credit on the work involving dishonesty and further substantial reduction of the course grade. In almost all cases the course grade is reduced to F. Students are expected to report cases of academic dishonesty to the course instructor.