

PHYSICS 2102 - Physics for Science & Engineering II**Section A01****This course is a hybrid course (part online activities and part in-class activities)**

Section	A01 TR 11:00 am - 12:15 pm Class location 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

Online Lectures Link <http://clas-pages.uncc.edu/phys2102/>**COURSE:****Description:**

This is the second course of the calculus-based introductory physics sequence. The course covers concepts of electric charges and forces, electric field and potential, electric circuits, magnetic field and electromagnetic induction, and electromagnetic field and waves.. 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) evaluate electrostatic forces in a system of multiple point charges or continuous charge distributions; 2) evaluate electric field due to a system of multiple point charges or continuous charge distributions; 3) calculate electric flux and apply Gauss' law; 4) calculate conductivity, charge and current densities in conductors; 5) apply Kirchhoff's and Ohm's laws in circuit analysis; 6) evaluate capacitance for various geometries; 6) apply Ampere's and Biot-Savart laws to evaluate magnetic forces and magnetic field due to a system of moving charges and current paths; 7) calculate magnetic flux and apply Faraday's and Lenz's laws to current loops; 8) conduct steady-state and transient circuit analysis involving combinations of inductors, capacitors and resistors; and 9) solve problems involving motion of charged particles in electric and magnetic fields.

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. Students are required to complete weekly online quizzes after working on the practice problems posted on ExpertTA through the week. All students except online section will meet in G256 EPIC. Problem solving strategies will be reinforced during the recitation sections at locations to be announced later.

Self Assessment

There will be practice problems, weekly quizzes and Topical Tests on Expert TA. The practice problems are meant to act as means of self-assessment, and their scores will not affect the final grade.

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 prerequisite 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.

Helpful sites to supplement your learning for Math and Physics are:

<http://www.khanacademy.org/>

<http://mathfortress.com>

COURSE FORMAT

Online Lectures and Quizzes:

- Full lecture videos are posted on the following link:

<http://clas-pages.uncc.edu/phys2102/>

- 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 solve the **Weekly Quiz** and **Topical Test** questions and the **Practice Problems** on Expert TA.
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- **Online Weekly Quizzes (submitted on Expert TA)**
- There will be at least **10 online quizzes**. Study the corresponding sections in the book, review the recommended solved examples in your textbook, and view online lecture notes and videos posted before answering each quiz. You have only two submissions in each question to discourage guesswork.

There is no due date for Practice Problems on Expert TA.

Online Practice Problems:

All practice problems will be posted on **Expert TA**. None of them will have due date, all of these assignments are for your studying as supplements and their credit will not effect your overall grade. In order to take the advantage of these assignments you need to study them in an organized manner as the semester proceeds. If you don't study them on time as the semester proceeds, trying to solve them at the end of the semester will not help your learning.

Online Weekly Quizzes and Topical Tests:

There will be a weekly quiz administered on Expert TA for all sections which will be given **every Friday between 5:00 am and 11:30 pm.**

There will be 3 Topical Tests throughout the semester and they will also be given **on posted Fridays between 5:00 am and 11:30 pm.** These tests will be administered on Expert TA.

Students can take these exams during the time intervals posted above, the exam duration will be posted on the exam.

Online weekly quizzes and topical tests will have due dates and their credit will count toward your overall course grade as explained below in the GRADING section.

There will be NO extension of deadline or make up on any Weekly Quiz or Topical Test.

Final Exam:

Final Exam is on Saturday, May 7, 2016, from 8:00 AM – 11:00 AM.

ALL STUDENTS TAKE THE FINAL EXAM ON CAMPUS, (Including Internet Section students). The Final Exam will be administered on Expert TA. The exam locations will be announced later.

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:

Practice Problems (Expert TA)	(Resource only)	0%
Online Weekly Quizzes (Expert TA)		20%
Topical Tests (Expert TA)		20%
Final Exam (Comprehensive, All sections administered in class on ExpertTA)		<u>60%</u>
TOTAL		100%

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

LEARNING RESOURCES:

Working as part of a study group is one of the most effective learning tools available to students.

Attend a section of an SI sessions (Problem Solving Sessions) at least once a week.

Please take advantage of help available at the Physics Resource Center, located in Burson 135A.

For **individual tutoring**, go to the Department of Physics office (Burson 100) or to the University Center for Academic Excellence (Fretwell, Phone: 704 687 2162).(<http://www.ucae.uncc.edu/>)

TEXT:

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

ISBN: 9781305775282

Online Course Management Tools:

All students need to self-register to The Expert TA. Please click on the link below and follow the instructions.

[The Expert TA:](#)

Student Registration - PHYS 2102 (Leilabady)

Registration Link:

<https://www.theexpertta.com/registration/>

Student Class Code:

UST35NC-585927-1C4

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.

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.