General Physics
01:750:204
Fall 2020

Instructor: Professor Abdelbaki Brahmia

Summary: The second introductory course in physics, primarily algebra based with some elements of calculus. Electric Field and Forces, Electric Potential and Potential Energy, Circuits, Magnetism, Electromagnetism, Electromagnetic Waves, Geometric Optics, Wave Optics, Special Relativity, Wave Particle Duality, Nature of the Atom, Nuclear Physics and Radioactivity, Nuclear Energy.

This course is primarily intended for students in the biological sciences, science majors not requiring analytical physics 01:750:227, and science teaching majors.

Pre-requisites: Pre-calculus, 01:750:203 or 01:750:124 or 01:750:201

Students with weaker mathematical skills or those who would benefit from additional instructional support may want to consider 01:750:202 (fall semester only).

Co-requisites: Any calculus course, 01:750:206

Credits: 3

Fall 2020 Meeting times:

Lectures: Pre-Recorded Lecture Videos posted on the Course LMS
Recitations: One 80-minute recitation

Textbook: *Physics*, Cutnell & Johnson, 11th Edition

LMS: Canvas

This course is offered in three formats: fully in person (spring only), hybrid, and fully online (spring semester only).

In person: Two in person lectures, with one 80-minute recitation. Recitations are based on collaborative learning, with groups of three working together, with a set of common worksheets. There is an individual quiz each recitation. Homework is submitted online. There are two non-cumulative common hour exams and one cumulative final exam.

Hybrid: Lectures are recorded and available to review at the student's convenience. Recitations are conducted in person, with the same format as the in-person sections. Homework is submitted online. There are two non-cumulative common hour exams and one cumulative final exam.

Fully Online: Lectures are recorded and available to review at the student's convenience. There are weekly online homework and timed weekly quizzes. Students may visit instructors/TA during office hours, or use the online message board to ask questions. Common hour and final exams are in person.

Only the hybrid format is available in the fall semester.

Provisional Plans for Remote Instruction:

Pre-recorded lectures will be available for all students. Students will also be able to attend the synchronous interactive lectures that are offered to the Extended General Physics 202 students, where the instructor discusses and reinforces the course material in detail and answer student questions. Attendance at the synchronous lectures is recommended but not required. These lectures will also be recorded by the instructor for students who are unable to attend to view at their own convenience.

Recitations will be conducted with Canvas, using the "Breakout Rooms" feature. Students will collaborate in groups of 3, under the supervision of an instructor. Attendance in recitations and labs is required.

Common hour and final examinations will be completed electronically.

Makeup opportunities will be in place in the event a student is unable to attend their regularly scheduled recitation or exam due to medical illness. Proper documentation must be provided for this allowance.

Technology requirements: A working electronic device (i.e. laptop, tablet, phone…). A functional internet connection. A microphone is required for group communication during recitations.

- Students who face complications with their technological equipment may also be provided a makeup opportunity at the discretion of the instructor. It is the student's responsibility to ensure that the above listed technology requirements are satisfied prior to enrollment.

Provisional Grading Plans:

Class Participation: 10%
Recitations: 10%
Online HW: 20%
Mid-Term #1: 15%
Mid-Term #2: 15%
Final Exam: 30%

Schedule (provisional):

Week:	**Topic**
1	Coulomb's Law and Electric Field
2	Electric Potential, Potential Energy and Capacitors
3	Electric Circuits
4	Electric Circuits, Magnetic Forces and Fields
5	Magnetic Fields and Electromagnetism
6	Electromagnetic Waves
7	The Reflection of Light: Mirrors
8	The Refraction of Light: Lenses
9	Interference and the Wave Nature of Light
10	Special Relativity
11	Particles and Waves
12	Nature of the Atom
13	Nuclear Physics and Radioactivity
14	Nuclear Energy

Academic Integrity:

Students are expected to maintain the highest level of academic integrity. You should be familiar with the university policy on academic integrity: http://academicintegrity.rutgers.edu/academic-integrity-policy/ Violations will be reported and enforced according to this policy.

Use of external sources to obtain solutions to homework assignments or exams is cheating and is a violation of the University Academic Integrity policy. Cheating in the course may result in penalties ranging from a zero on an assignment to an F for the course to expulsion from the University. Posting of homework assignments, exams, recorded lectures, or other lecture materials to external sites without the permission of the instructor is a violation of copyright and constitutes a facilitation of dishonesty, which may result in the same penalties as explicit cheating.

Not only does the use of such sites violate the University's policy on Academic Integrity, using such sites interferes with your achievement of the learning you are paying tuition for. Assignments, quizzes, and exams are given not simply to assign grades, but to promote the active learning that occurs through completing assignments on your own. Getting the right answer is much less important than learning how to get the right answer. This learning is critical to your success in subsequent courses and your careers.

Student Wellness Services

Student Counseling, ADAP & Psychiatric Services (CAPS) wellness for non-emergency psychological health issues services (848) 932-7884, 17 Senior Street, New Brunswick, NJ 08901 http://health.rutgers.edu/medical-counseling-services/counseling/

Violence Prevention & Victim Assistance (VPVA), (848) 932-1181, 3 Bartlett Street, New Brunswick, NJ 08901, http://www.vpva.rutgers.edu/

Office of Disability Services (848) 445-6800, Lucy Stone Hall, Suite A145, Livingston, 54 Joyce Kilmer Avenue, Piscataway, NJ 08854, https://ods.rutgers.edu/

Scarlet Listeners for confidential peer counseling and referral hotline, (732) 247-5555, http://www.scarletlisteners.com