

Honors Physics I (Mechanics)
01:750:271
Fall 2020

Instructor: Professor Valery Kiryukhin

Summary: A challenging introductory course which will provide students with an in depth introduction to physics. In addition to a deeper view of topics covered in typical introductory courses or in the AP exam, it will introduce students to more advanced topics such as rigid body motion and non-inertial systems. The emphasis will be on developing critical problem solving skills.

Pre-requisites: AP-C classical mechanics credit, or advanced physics course, 01:640:152.

Co-requisite: 01:750:275 (required for Professional Majors, strongly recommended for others)

Meeting times: Two 80 minute lectures per week.
Lecture: MW 4 (1:40 pm – 3:00 pm)
Recitations: None

Text: Daniel Kleppner and Robert Kolenkow, An Introduction to Mechanics, Second Edition. ISBN 978-0-521-19811-0

LMS: Canvas

Provisional Plans for Remote Instruction:

Lectures will be done synchronously, using Webex or similar software, in a simulated blackboard lecture manner. All the notes made at the lectures will be posted online.

Office hours will be done by appointment, online, using Webex or similar software. This is a small class, on-demand appointments will be possible.

Homework assignments (a list of problems to be done at home on paper) will be announced and collected using the LMS. Students are expected to photograph or scan their homework and upload the images. Homework solutions will be posted using the LMS. Homework grades will be posted via the LMS.

Exams: Midterm, Final. Timed at-home traditional exams (open-ended problems, not multiple choice), to be submitted via LMS. Synchronous for the major part of the class, with provisions to those who needs them.

Technology requirements: A laptop with a microphone and webcam, internet connection fast enough for video chat.

Provisional Grading Plans:
Homework: 30%

Mid-term: 30%
Final Exam: 40%

Schedule (provisional):

Week:	Topic	Readings
Week 1 (1 lecture)	Introduction	
Week 2	Vectors	
Week 3	Kinematics	
Week 4	Newton's Laws	
Week 5	Applications of Newton's Laws	
Week 6	Forces of Physics. Momentum	
Week 7	Momentum. Review for Midterm Exam	
Week 8	Midterm Exam. Discussion of the Exam results	
Week 9	Energy	
Week 10	Topics in Dynamics (Oscillations, Stability)	
Week 11	Angular Momentum, Fixed Axis of Rotation	
Week 12	Rigid Body Motion	
Week 13 (one lecture)	Topics in Rotational Motion	
Week 14	Non-Inertial Systems	
Week 15	Central Force Motion	

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>