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PHYS 1P21/1P91 - Introductory Physics I

Course outline

– Instructor

- » [D.Crandles](#)
- » Labs: [Ivana Komljenovic-Metcalf](#)
- » Teaching Assistants: Matthew, Pritish, Rachit, Ankreet, Ashland, Samadhi, Netra, Paul, Parisa, Hansima, Collin

– About this course

What [Brock calendar entry](#) says:

- » Kinematics, Newton's laws and their applications to equilibrium and dynamics; conservation laws; oscillations, waves and sound.

What do I need to bring into the course?

- » One Grade 12 math course, preferably functions or calculus.

Times and Locations

- » Lectures: TH325 M,W 17-18h R 11-12
- » Weekly Quiz TH325 R 13-14
- » (PHYS 1P91) Laboratories: **MCH200** - see your personal schedule for time
- » Help Desk: **MCH200** Mon 2-3 PM Tues,Wed,Thurs,Fri 11-12 PM
- » Prof. Crandles Office (MCB202) Hours Tues 3-4PM or by appt.

Important Dates Jan-Apr. 2024 (FW23D3)

- » First day of classes: Jan. 8
- » Last day of classes: Apr. 5
- » Snow/Reading Days: Apr. 9
- » Reading Week: Feb. 19-23
- » Exams Apr. 10-23
- » Deadline for withdrawal without academic penalty: March 8

Textbook

- » [openstax College Physics 2e.](#)

– Topics to be covered

This is an approximate list, based on previous experience. As the course progresses, some of topics may be removed and some others may get added.

- » **Chapter 1: Introduction: The Nature of Science and Physics**
- » **Chapter 2: Kinematics**
- » **Chapter 3: Two-Dimensional Kinematics**
- » **Chapter 4: Dynamics: Force and Newton's Laws of Motion**
- » **Chapter 5: Further Applications of Newton's Laws: Friction, Drag and Elasticity**
- » **Chapter 6: Uniform Circular Motion and Gravitation**
- » **Chapter 7: Work, Energy and Energy Resources**
- » **Chapter 8: Linear Momentum and Collisions**
- » **Chapter 9: Statics and Torque**
- » **Chapter 16: Oscillatory Motion and Waves**
- » **Chapter 17: Physics of Hearing**
- » **Chapter 29: Quantum Physics**

– Grading and the grading scheme

1P21:

Component	% of the final mark	Notes
Homework	20%	Problem sets to be completed on the Möbius platform. Problem sets administered on the Möbius platform, can be accessed via Brightspace. Each of the 12 homework assignments

		(due Tues 11.59pm) will focus on a single chapter of the textbook. Best 11 of 12 homework will count towards final grade.
Quizzes	40%	In-class quiz, every Thursday from 1-2 p.m. Please bring a non-graphing calculator. Best 11 of 12 quizzes will count towards final grade.
Final exam	40%	Minimum passing grade 50%. Please bring a non-graphing calculator

1P91:

Component	% of the final mark	Notes
Homework	20%	Problem sets administered on the Möbius platform, can be accessed via Brightspace. Each of the 12 homework assignments (due Tues 11.59pm) will focus on a single chapter of the textbook. Best 11 of 12 homework will count towards final grade.
Quizzes	30%	In-class quiz, every Thursday from 1-2 p.m. Please bring a non-graphing calculator. Best 11 of 12 quizzes will count towards final grade.
Laboratory	20%	Minimum passing grade 60% overall to receive 1P91 credit. If lab grade is lower than 60%, students will be eligible for credit in PHYS 1P21, only. Lab reports are due at NOON, five days after scheduled lab session.
Final exam	30%	Minimum passing grade 50%. Please bring a non-graphing calculator

– Late Submission Policy

Homework

- » the due date for each homework will be Tuesday at 11.59 PM
- » No late submissions will be accepted without an official academic exception (such as a self-medical declaration form or other exception from Student Accessibility Services.)

Quizzes

- » If you will miss a quiz, you must inform the instructor in advance of the quiz date to schedule a make-up quiz.

Labs

Lateness	Maximum Possible grade
less than 24 h	70%
less than 48 h	40%
less than 72 h	10%

– Brock Physics Lab Credit Policy

You attempted PHYS 1P91/1P92 in the past ...

- A. ...and you passed the course, congratulations!
- B. ...and you did not pass the course because of falling short in some combination of...:
 - » homework,
 - » weekly quizzes,
 - » not achieving 50% on the final exam, and/or
 - » not achieving 60% for the lab grade requirement.
 1. If your previous lab grade was > 60%, you will not need to complete the labs again, unless you'd like to attempt for a better lab grade. You will need to repeat the theory part of the course. In this case, you must also contact the senior lab coordinator for further instructions on how to register for the 1P91/1P92 course in its next offering.
 2. If your previous lab grade was < 60%, you will have to register for the next offering of 1P91/1P92 and repeat the entire course.
- C. ... you passed, BUT you were given credit for PHYS 1P21/1P22 only.
 1. You are still missing the lab component! We offer credit in 1P21/1P22 for students whose only failing was the lab component of the course. You can complete the lab-only component during the next offering of the PHYS 1P91/1P92 course and be upgraded to 1P91/1P92. Please contact the senior lab coordinator.

You successfully completed PHYS 1P91/1P92 in the past ...

- A. ...and you now need a Physics course with a lab component. Please contact the senior lab coordinator. You can complete the lab-only component during the next offering of the PHYS 1P91/1P92 course and be upgraded to 1P91/1P92.

If you are going for one of the 'upgrade' options, and are contacting the senior lab coordinator:

- Email them at least a few weeks before the beginning of term
- Include all pertinent details (your situation, when you last took the course, your grades, etc)

The senior lab coordinator will help arrange the lab section for you, and informally register you in the course. You will be given access to all lab material on the learning management system.

At the end of a successful attempt at the lab credit, the physics department will submit a change of grade form to the Registrar's office.

Note:

- I. Your new final grade is calculated based on the grade composition set during the semester you completed the original course.
- II. Once the upgrade is completed by the Registrar's office, you will be charged the non-refundable lab fees for the PHYS 1P91 and/or PHYS 1P92 lab course.
- III. The Physics Department will not allow resubmission of old lab reports; all work completed must be original. The department uses TurnItIn to enforce this rule.
- IV. You will not be allowed to complete PHYS 1P92 labs until you have successfully completed PHYS 1P91 labs.

Policy Version 2024-02

– Expectations and responsibilities

Here is a summary of our expectations of you, which are your responsibilities. You are expected to:

- » [attend each scheduled lecture and laboratory session](#);
- » do your work honestly and maintain [academic integrity](#) (see a separate section below for details);
- » complete each test, using only the materials that have been authorized for use, such as a non-graphics calculator and writing instruments;
- » attend labs having **prepared in advance** by reading relevant parts of the lab manual, and having completed the prelab problems.

And most important of all, you must take responsibility for your own learning. The lectures are there to guide you and assist you, but only you can actually do the hard work of learning the course material. To get the most out of the course, work on it a little bit every day. Daily work is key for placing your learning in long-term memory, where it will be readily available to help you to advance your knowledge in subsequent years - and acing the final exam, of course. Cramming on the night before may place the material in your short-term memory and you might even do fine on a weekly test, where the amount of new material is relatively small, but this approach will fail miserably on the final exam.

Your instructor will provide weekly textbook chapter references; read through those section. The best way is to read them twice: once before the lectures, just to orient yourself in the material, to identify those parts that seem like they might need extra time and attention. Make a note of the questions that arise in your mind. The lecture should answer some of them, and if it does not, raise your hand and ask! Asking questions is a sign of active learning, not a sign of weakness. It is likely that many others have the same question. After the lecture, read the textbook again, with a pen and paper in hand, repeating all derivations on your own, trying every solved example before looking at the solution, then solving every follow-up questions at the end of the section. Sometimes, the answers to questions are available; use those to check up on the skills you are developing. But most of the time, the answers are not known, and you must learn to develop enough confidence in your skills to solve those. Both are integral to the learning process.

Use your time effectively. Study smart, instead of hard. Ask questions in class. Your instructor has an open-door policy, so outside of a few restricted hours, you are always welcome to come and ask a question one-on-one. Do not wait until you have a "worthy" pageful of questions - that's too long to let them fester unanswered. It is better to come three times with one or two questions than once with a list accumulated over the past several weeks, when things get too desperate.

– Weekly Homework

Homework assignments are to be submitted on the Möbius platform. Link to each homework assignment will be posted on the Brightspace page.

Useful resource to review physics and math concepts:

- » [PPLATO](#) also contains useful review links

– Academic Integrity

Academic misconduct is a serious offence. The principle of academic integrity, particularly of doing one's own work, documenting properly (including use of quotation marks, appropriate paraphrasing and referencing/citation), collaborating appropriately, and avoiding misrepresentation, is a core principle in university study. Students should consult ["Academic Misconduct"](#) section in the Undergraduate Calendar to view a fuller description of prohibited actions, and the procedures and penalties. The University takes academic misconduct extremely seriously and will follow its strict procedures to the letter in all cases.

A helpful website explains Brock's [Academic Integrity Policy](#). Please consult it, as all students are expected to know and abide by its provisions.

Courses may use [turnitin.com](#), a phrase-matching software, to verify originality of your submitted lab reports and written assignments. If you object to uploading your assignments to [turnitin.com](#) for any reason, please notify the instructor to discuss alternative submissions.

Be aware that it is the policy of the Department of Physics that any academic misconduct including (but not limited to) possessing, using or accessing unauthorized material in any form (including online) during final exams or assessments will *automatically* result in zero grade for the exam. Since most courses require a minimum passing grade on the final exam to complete the course, this will likely lead to a failure in the course.

FMS Penalties for Academic Misconduct

Unless otherwise specified, the Department of Physics follows the following minimum penalty guidelines for cases of academic misconduct in the Faculty of Mathematics and Science (FMS). Please be aware that the Associate Dean, Undergraduate Programs, may assign different penalties than those listed here, depending on the details of individual cases. Also note that cheating on exams carries significantly higher penalties.

First offence:

Zero grade on the assignment, additional penalty of 100% of the weight of the assignment to be subtracted from the final grade, mandatory completion of the AZLS Academic Integrity workshop

Second offence:

Zero grade on assignment, additional penalty of 200% of the weight of the assignment to be subtracted from the final grade, 4-month suspension

Third or additional offence:

Zero grade in the course, 1-year suspension, permanent removal from major program.

Cheating on exams:

Zero grade in the course, including for first offenses.

— FMS Academic Policies

Intellectual Property Notice

All slides, presentations, handouts, tests, exams, and other course materials created by the instructor in this course are the intellectual property of the instructor. A student who publicly posts or sells an instructor's work, without the instructor's express consent, may be charged with misconduct under Brock's Academic Integrity Policy and/or Code of Conduct, and may also face adverse legal consequences for infringement of intellectual property rights.

Important dates

Please be aware of all the important dates, such as the first/last days of classes, snow days and reading week, as well as the deadline for withdrawal without academic penalty. For the current academic term, this information can be found [here](#).

Accommodations

The University is committed to fostering an inclusive and supportive environment for all students and will adhere to the Human Rights principles that ensure respect for dignity, individualized accommodation, inclusion and full participation. The University provides a wide range of resources to assist students, as follows:

- a. If you require academic accommodation because of a disability or an ongoing health or mental health condition, please contact Student Accessibility Services at askSAS@brocku.ca or 905 688 5550 ext. 3240.
- b. **Medical Self-Declaration Forms** (brief absence up to 72 hours)

In the case of a short-term medical circumstance, if a student wishes to seek an academic consideration, please use the [Medical Self-Declaration Form](#). The request is to be made in good faith by the student requesting the academic consideration due to a short-term condition that impacts their academic activities (e.g., participation in academic classes, delay in assignments, etc.). The period of this short-term medical condition for academic consideration must fall within a 72-hour (3 day) period. The form must be submitted to the instructor either during your brief absence or if you are too unwell, within 24 hours of the end of your 3 day brief absence.

Medical Verification Form (extended duration)

In cases where a student requests academic consideration due to a medical circumstance that exceeds 72 hours (three days) and will impact their academic activities (e.g., participation in academic classes, delay in assignments, etc.), or in the case of a final exam deferral, the [medical verification form](#) must be signed by the student and the health professional as per process set out in the [Faculty Handbook III:9.4.1](#).

- c. If you are experiencing mental health concerns, contact the Student Wellness and Accessibility Centre. [Good2Talk](#) is a service specifically for post-secondary students, available 24/7, 365 days a year, and provides anonymous assistance. Follow the above link or call 1-866-925-5454. For information on wellness, coping and resiliency, visit: [Brock University \(Mental Health\)](#).
- d. If you require academic accommodation on religious grounds, you should make a formal, written request to your instructor(s) for alternative dates and/or means of satisfying requirements. Such requests should be made during the first two weeks of any given academic term, or as soon as possible after a need for accommodation is known to exist.
- e. If you have been affected by sexual violence, the Human Rights & Equity Office offers support, information, reasonable accommodations, and resources through the Sexual Violence Support & Education Coordinator. For information on sexual violence, visit [Brock's Sexual Assault and Harassment Policy](#) or contact the Sexual Violence Support & Response Coordinator at humanrights@brocku.ca or 905 688 5550 ext. 4387.
- f. If you have experienced discrimination or harassment on any of the above grounds, including racial, gender or other forms of discrimination, contact the Human Rights and Equity Office at humanrights@brocku.ca.

For a full description of academic policies in the Faculty of Mathematics and Science, consult brocku.ca/mathematics-science/

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