

UNIVERSITY OF WESTERN ONTARIO
LONDON ONTARIO CANADA
FACULTY OF SCIENCE – DEPARTMENT OF PHYSICS AND ASTRONOMY

Physics 1101A – Section 001
Introduction to Physics I

Instructor: Dr. Tyler Pattenden (he/they)
Instructor Email: tpattend@uwo.ca
Course Email: phys1101@uwo.ca

Please read communication policies below.

Teaching Assistant: TBA

Lab Instructor: Dr. Shailesh Nene (he/him)

Course Administrator: Dr. Isabelle Cyr (they/them)

Course Description:

An introductory algebra-based course in physics covering the foundation principles of kinematics, forces, conservation of energy and momentum, torque, equilibrium, geometric optics and optical instruments. Fundamental physics concepts are introduced with examples from biological applications.

Pre- or Corequisites:

Ontario Secondary School MHF4U (or equivalent) or Mathematics 0110A/B.

Antirequisites:

Physics 1201A/B, Physics 1401A/B, Physics 1501A/B, the former Physics 1028A/B, the former Physics 1301A/B.

Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to meet the necessary requisites.

Textbook(s):

1. *Sears and Zemansky's College Physics (11e.)* by H.D. Young and P.W. Adams (Pearson).

Available in an e-text format through the publisher bundled with the Mastery Physics online platform. A print copy is also an option and can be purchased through the publisher. Various assessments will be hosted on the Mastery Physics platform from Pearson.

2. Lab Manual for Physics 1101A.

Both resources may be purchased through the Western Bookstore (<https://bookstore.uwo.ca>). Both resources are **mandatory** for this course.

Important websites and their utilization in this course:



OWL Brightspace – This learning management system will be your hub to find all posted resources for this course. This will include lecture notes, additional resources for the week (videos, extra notes, activities) and your grades! Announcements will also be sent out via OWL Brightspace for reminders regarding upcoming assessments and any pertinent information regarding the course. It is your responsibility to check OWL often (daily!!).



Mastering Physics – Directly linked to our textbook (see above) Mastering Physics will be where all your at-home assignments will be hosted. This online platform is regarded for its ease to use and ability to give you quick feedback. Throughout the semester, you will have graded assignments due (approximately every two weeks). In addition, we will have Chapter Check-Ins that will allow you to check your understanding at the end of every chapter. Both assessments (assignments and check-ins) contribute to your final grade. ***Having access to Mastering Physics is mandatory for this course.***



Gradescope – This will be our grading platform for your labs and your two major assessments for this semester. Details regarding how Gradescope will function for labs will be given during your lab session(s). Your two tests will be scanned into Gradescope for grading and feedback.

- Gradescope works best when you upload a PNG or PDF file as your submission. Other file formats risk being corrupted or unseen by the grader.
- We will be using gradescope.ca in this course – please ensure you are going to this website and not gradescope.com!!

Best Method to Contact Course Staff:

The best method to contact your instructor for this course is in-person before or after class. If this does not work for you, then you should email the course email phys1101@uwo.ca with your question(s) – either the instructor or teaching assistant will respond within two business days. Note that any question that is answered in this outline or in an announcement posted by the course instructor will **not** be answered. Your email should clearly state the question(s) you have **and** what you have already done to answer said question.

If you have any questions regarding **laboratory content**, please direct them to Dr. Shailesh Nene through a JIRA ticket: <https://help.sci.uwo.ca/servicedesk/customer/portal/8>.

Your teaching assistant(s) will hold student hours throughout the term to assist with assignment questions or general course questions. A schedule of their student hours will be posted on OWL Brightspace once finalized.

Your instructor will hold limited student hours throughout the term. This will be finalized in class and on OWL Brightspace.

Forums will be accessible on OWL Brightspace for you to post general administrative questions, general technical questions (about Mastering or Gradescope, perhaps), or general physics questions¹.

¹ And memes... we always need fun memes...

Learning Outcomes:

By the end of the course, students will be able to:

1. Develop physics thinking skills and problem-solving approaches that are useful in other fields and in everyday situations;
 2. Acquire an intuitive understanding of fundamental physics concepts; and
 3. Engage in critical analysis of a problem individually and through team effort, effectively communicating your approach to others, through laboratory projects and other activities.
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Evaluation:

Your final grade will be calculated through the following scheme:

Dynamic Study Modules (Mastering Physics)	5%
Assignments (Mastering Physics)	20%
Midterm Test) Final Test (to be scheduled by the Registrar)	30%
Test Flex Grade (added to best test)	5%
Laboratory Assignments	10%

Details regarding each evaluation are given below.

Dynamic Study Modules: As we make our way through the course, we will have pass/fail chapter check-ins for each chapter in our text. These will be multiple choice activities that you may complete at your leisure throughout the course. However, a “recommended schedule” will be posted to OWL Brightspace. It is *highly* encouraged to follow this schedule to keep up with the content. The questions seen here may appear on your term tests, and give you a decent gauge for the difficulty of test-style questions. These are not meant to be overly tricky, rather will give you the ability to check your understanding of course content. **All Dynamic Study Modules are due the last day of classes at 11:59PM.**

Assignments: Assignments will be administered through the Mastering Physics portal, as well. You can expect some calculation-based questions, multiple-choice and more – these will be much more in-depth than chapter check-ins. A complete schedule will be given on OWL Brightspace during the first week of classes. You can expect an assignment to be given approximately every other week, and a total of six (6) assignments will be given throughout the term – you may expect three prior to the midterm test and three after the midterm test. Your best five out of six assignments will be counted at equal-weight (4%) towards your overall assignment mark. There will be **no** make-up assignments. You **must** complete assignments by their deadline.

Midterm Test: It will consist of thirty (30) multiple choice questions covering all material up to the test. At least one (1) class prior to the midterm test will be for review of relevant course material. A practice test will be posted on OWL Brightspace for you. A make-up for the midterm will be scheduled at a later date.

Final Test: The final test will be scheduled during the final examination period by the Registrar's office and will be three hours in length. The final test will consist of thirty (30) multiple choice questions covering all material presented **after** the midterm test content. The final test is **not** cumulative of all course material. At least one (1) class at the end of the term will be for review of relevant course material. A practice test will be posted on OWL Brightspace for you. A make-up for the final test will be scheduled at a later date.

Test Flex Grade: A 5% flex grade will be applied to whichever test (midterm or final) that you score better on. This will make either your midterm or final test worth 35% of your final overall grade.

Lab Assignments: The laboratory assignments will take place during the scheduled laboratory hours. All relevant details will be posted to OWL Brightspace. Any questions regarding labs should be directed to the lab instructor.

Please note: The Department of Physics and Astronomy may, in exceptional cases, adjust the final course marks in order to conform to Departmental policy.

Comments Regarding Student Absences:

If you are unable to meet a course requirement deadline due to illness or other circumstance, please follow the procedures below:

1. Assignments – Due to only five out of six assignments counting towards your final overall grade, you are able to miss one assignment without penalty. You will receive part marks for partially completed assignments. Please begin assignments well ahead of their deadline. If you missed an entire assignment by the due date, I encourage you to still complete the assignment without receiving grades because it will affect your preparation for the midterm and final tests.
 2. Lab Assignments – One lab can be missed without failing the entire course. If you miss one lab without accommodation, you can get up to 7.5% marks out of the 10%. If a second lab is missed, you need an approved accommodation from the academic counseling, and then you should contact Dr. Shailesh Nene via JIRA ticket who will guide you further. See the document on Brightspace for more details.
 3. Tests – You must provide valid medical or supporting documentation to Academic Counselling Office of your Faculty of Registration as soon as possible. A make-up for each test will be scheduled (you can expect the make-up midterm to be within one week of October 26th, and the make-up final to be scheduled in early January). If you miss the midterm and the make-up midterm test, with appropriate documentation, the weight of the midterm will be shifted to your final test (for a final test worth 65% with the flex grade).
 4. Lectures – Although lecture attendance is not mandatory for this course, attendance is highly encouraged from students. It is understood that “life happens” but lectures are an important learning experience. In this time, we will learn new material, discuss relevant topics, and investigate new things. I will do my best to keep lectures engaging and on-point – we will even discuss how the physics we are learning relates directly to you! Although notes will be posted (see below), not everything discussed in-class will appear. It is to your benefit to attend each lesson and engage with the material as best as you can – ask questions, join discussions, and more.
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In-Class Notes:

All in-class notes will be posted to OWL within 48 hours of class ending – I will do my best to post within 24 hours, but may be delayed on occasion. Note that if attendance in class begins to lack, notes may be password protected with the password given only to those that attend class. It is extremely important that you attend class, participate, ask questions, and be present in all aspects of the word. **I do not want to password protect notes, but will do so if needed.**

Student Hours:

Some professors may call this time each week “office hours”, but I cannot stand that term as it makes it sound like I do not want you around. In fact, these hours are scheduled for you to come see me (I know a scary thought, right?). I will be sitting, more than likely alone, somewhere on campus (TBD) awaiting you to grace me with your presence. This is your time to speak with me (your oh so scary instructor) or your teaching assistant about course content, future directions, life, Netflix or whatever. Student hours will occur in-person somewhere on campus. If you are unable to attend student hours, please email the course email to schedule an appointment.

To give you a sense of how student hours work, watch this short video: <https://vimeo.com/270014784>²

Equal Opportunity and Evaluation Policy:

The university is committed to academic integrity and has high ethical and moral standards. All students will be treated equally and evaluated using the criteria presented in this course outline and their respective weights. The evaluation criteria are based strictly on actual achievement, not on effort. Claims of an excellent academic history, of attendance in the course components, or of personal issues (family, relationship, financial, etc.) cannot be used to justify a higher grade in the course because they are not criteria for evaluation. The requirement for a higher grade to, for example, maintain a scholarship, enter a program, or obtain a higher GPA for various reasons, is not a justifiable reason for increasing your grade. If we increased or “bumped” your grade (i.e. gave you a grade that you did not legitimately earn), it would be unfair to the other students and also a great disservice to the scholarships and programs who are evaluating all students on the basis of their grades. This means, for example, if you receive 58% in the course we will not “bump” your grade to a 60%; you will simply need to take the course again if you need 60%.

EDID Statement:

I am committed to having a respectful classroom where all feel welcomed. Our class time is a safe space to be yourself, and to question the course content. Discussion is always encouraged and you should never feel silenced by me or a peer. We all come from different backgrounds, and that is what makes science (and the world!) an amazing place. If you ever feel disrespected, put down, or not included for whatever reason, please reach out to me. I will always be a safe person for you to talk to.

Decolonization Statement:

Western sits on the traditional territories of the Anishinaabek, Haudenosaunee, Lūnaapéewak and Chonnocton Peoples. The legacy of colonization and colonialism is felt globally and is imprinted in our educational system. Western is taking some initial steps toward recognizing it. Textbooks can be biased toward a particular cultural narrative. Science (especially Physics and Mathematics) textbooks are no exception. I will strive to include unique content as much as I can, and I seek your feedback.



² It does bother me that Dr. Ishak calls them “office hours” ... but I digress ...

Tentative Class Schedule:

This is subject to change and should not be held as absolute. All textbook sections come from College Physics.

Week of ...	Monday Class Content	Wednesday Class Content	Friday Class Content	Important Notes (deadlines, etc.)
Sept 2 nd	-- no class --	-- no class --	Introduction to PHYS1101 + Chapter 1 (Measurements / Vectors)	Welcome to Western Physics!
Sept 9 th	Chapter 2 (§2.1 – §2.4)	Chapter 2 (§2.5 – §2.7)	Chapter 3 (§3.1 – §3.3)	--
Sept 16 th	Chapter 3 (§3.4 – §3.5)	Chapter 4 (§4.1)	Chapter 4 (§4.2 – §4.3)	Assignment #1 Due September 16 th at 11:59PM
Sept 23 rd	Chapter 4 (§4.4 – §4.5)	Chapter 4 (§4.6)	Chapter 5 (§5.1)	--
Sept 30 th	-- no class -- Sept 30 th is National Day for Truth and Reconciliation	Chapter 5 (§5.2 - §5.3)	Chapter 5 (§5.4 – §5.5)	Assignment #2 Due September 30 th at 11:59PM
Oct 7 th	Chapter 6 (§6.1)	Chapter 6 (§6.2 – §6.3)	Chapter 6 (§6.4 – §6.5)	--
Oct 14 th	-- no class --	-- no class --	-- no class --	Fall Reading Week
Oct 21 st	Midterm Test Review (Ch. 1 and Ch. 2)	Midterm Test Review (Ch. 3 and Ch. 4)	Midterm Test Review (Ch. 5 and Ch. 6)	Assignment #3 Due October 21 st at 11:59PM Midterm Test October 26 th from 2:00PM – 5:00PM
Oct 28 th	Chapter 7 (§7.1 – §7.3)	Chapter 7 (§7.4 – §7.6)	Chapter 7 (§7.7 – §7.8)	--
Nov 4 th	Chapter 8 (§8.1 – §8.3)	Chapter 8 (§8.4 – §8.6)	Chapter 8 (§8.7 – §8.8)	Assignment #4 Due November 4 th at 11:59PM

Nov 11th	Chapter 9 (§9.1 – §9.2)	Chapter 9 (§9.3 – §9.4)	Chapter 9 (§9.5)	--
Nov 18th	Chapter 10 (§10.1 – §10.3)	Chapter 10 (§10.4 – §10.5)	Chapter 10 (§10.6 – §10.7)	Assignment #5 Due November 18 th at 11:59PM
Nov 25th	Chapter 23 (§23.3, §23.7)	Chapter 24 (§24.1 – §24.2)	Chapter 24 (§24.3)	--
Dec 2nd	Chapter 24 (§24.4 – §24.6)	Final Test Review (Ch. 7, Ch. 8 & Ch. 9)	Final Test Review (Ch. 10, Ch. 23 & Ch. 24)	Assignment #6 Due December 6 th at 11:59PM
Dec 9th – Dec 22nd	--	--	--	Final Examination Period (Final Test will be scheduled by the Registrar during this time)

****A list of suggested homework problems for each section of the book is provided on OWL Brightspace****

General information about missed coursework

Students must familiarize themselves with the *University Policy on Academic Consideration – Undergraduate Students in First Entry Programs* posted on the Academic Calendar:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/academic_consideration_Sep24.pdf,

This policy does not apply to requests for Academic Consideration submitted for **attempted or completed work**, whether online or in person.

The policy also does not apply to students experiencing longer-term impacts on their academic responsibilities. These students should consult Accessible Education.

For procedures on how to submit Academic Consideration requests, please see the information posted on the Office of the Registrar's webpage: https://registrar.uwo.ca/academics/academic_considerations/

All requests for Academic Consideration must be made within 48 hours after the assessment date or submission deadline.

All Academic Consideration requests must include supporting documentation; however, recognizing that formal documentation may not be available in some extenuating circumstances, the policy allows students to make one Academic Consideration request **without supporting documentation** in this course. However, the following assessments are excluded from this, and therefore always require formal supporting documentation:

- Examinations scheduled during official examination periods
- The Research Project

When a student *mistakenly* submits their one allowed Academic Consideration request **without supporting documentation** for the assessments listed above or those in the **Coursework with Assessment Flexibility** section below, the request cannot be recalled and reapplied. This privilege is forfeited.

Evaluation Scheme for Missed Assessments

Assignments received more than 72 hours after the deadline will receive no marks.

When a student misses the Final Term Test and their Academic Consideration has been granted, they will be allowed to write the Special Examination (the name given by the University to a makeup Final Exam). See the Academic Calendar for details (under Special Examinations), especially for those who miss multiple final exams within one examination period.

Coursework with Assessment Flexibility

By policy, instructors may deny Academic Consideration requests for the following assessments with built-in flexibility:

Deadline with a No-Late-Penalty Period

Assignments. Students are expected to submit each of the assignments by the deadline listed. Should extenuating circumstances arise, students do not need to request Academic Consideration and they are permitted to submit their assignment up to 72 hours past the deadline without a late penalty. Should students submit their assessment beyond 72 hours past the deadline, the assessment will receive a mark of zero. Academic Consideration requests may be granted only for extenuating circumstances that started before the deadline and lasted longer than the No-Late-Penalty Period of 72 hours.

6. Additional Statements

Religious Accommodation

When conflicts with a religious holiday that requires an absence from the University or prohibits certain activities, students should request an accommodation for their absence in writing to the course instructor and/or the Academic Advising office of their Faculty of Registration. This notice should be made as early as possible but not later than two weeks prior to the writing or the examination (or one week prior to the writing of the test).

Please visit the Diversity Calendars posted on our university's EDID website for the recognized religious holidays:
<https://www.edi.uwo.ca>.

Accommodation Policies

Students with disabilities are encouraged to contact Accessible Education, which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The policy on Academic Accommodation for Students with Disabilities can be found at:

[https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic Accommodation_disabilities.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Accommodation_disabilities.pdf).

Academic Policies

The website for Registrar Services is <https://www.registrar.uwo.ca/>.

In accordance with policy, https://www.uwo.ca/univsec/pdf/policies_procedures/section1/mapp113.pdf, the centrally administered e-mail account provided to students will be considered the individual's official university e-mail address. It is the responsibility of the account holder to ensure that e-mail received from the University at their official university address is attended to in a timely manner.

Calculators are permitted during midterm and final test. Any model calculator may be used with the exception of a wifi-enabled device or programmable graphing calculators. Smartphones may not be used.

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf.

Support Services

Please visit the Science & Basic Medical Sciences Academic Advising webpage for information on adding/dropping courses, academic considerations for absences, appeals, exam conflicts, and many other academic-related matters:

<https://www.uwo.ca/sci/counselling/>.

Students who are in emotional/mental distress should refer to Mental Health@Western (<https://uwo.ca/health/>) for a complete list of options about how to obtain help.

Western is committed to reducing incidents of gender-based and sexual violence and providing compassionate support to anyone who has gone through these traumatic events. If you have experienced sexual or gender-based violence (either recently or in the past), you will find information about support services for survivors, including emergency contacts at https://www.uwo.ca/health/student_support/survivor_support/get-help.html.

To connect with a case manager or set up an appointment, please contact support@uwo.ca.

Please contact the course instructor if you require lecture or printed material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Accessible Education at http://academicsupport.uwo.ca/accessible_education/index.html if you have any questions regarding accommodations.

Learning-skills counsellors at Learning Development and Success (<https://learning.uwo.ca>) are ready to help you improve your learning skills. They offer presentations on strategies for improving time management, multiple-choice exam preparation/writing, textbook reading, and more. Individual support is offered throughout the Fall/Winter terms in the drop-in Learning Help Centre, and year-round through individual counselling.

Western University is committed to a thriving campus as we deliver our courses in the mixed model of both virtual and face-to-face formats. We encourage you to check out the Digital Student Experience website to manage your academics and well-being: <https://www.uwo.ca/se/digital/>.

Additional student-run support services are offered by the USC, <https://westernusc.ca/services/>.