

Course Outline

Physics 1401A - Physics for Engineering Students I

Fall 2026

1. Course Information

Physics 1401A (Fall 2026)

Lectures:

Section 001: MWF 8:30 – 9:20 am (Tudose) – SSC 2050

Section 002: MWF 9:30 – 10:20 am (Chronik) – NCB 101

Laboratory/Tutorials: (schedule to be provided separately on OWL).

Antirequisite(s): Physics 1021, Physics 1101A/B, Physics 1201A/B, Physics 1501A/B, the former Physics 1028A/B, the former Physics 1301A/B.

Prerequisite(s): Grade 12U Calculus and Vectors (MCV4U) or Mathematics 0110A/B; Grade 12U Physics (SPH4U). **Corequisite(s):** Numerical and Mathematical Methods 1412A/B (preferred) or Calculus 1000A/B or Calculus 1500A/B or the former Applied Mathematics 1412A/B.

Unless you have either the requisites for this course or written special permission from your Dean's Designate (Department/Program Counsellors and Science Academic Advisors) 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 if you are dropped from a course for failing to have the necessary prerequisites.

2. Instructor Information

Instructors	Email	Office	Phone	Office Hours
Prof. Bogdan Tudose	btudose@uwo.ca	PAB 114		Wed 1:30-2:30pm
Prof. Blaine Chronik	bchronik@uwo.ca	PAB 228		By appointment

Students must use their Western (@uwo.ca) email addresses when contacting their instructors.

3. Course Syllabus, Delivery Mode

This course is delivered in person.

An introductory calculus-based laboratory course in physics covering the foundational principles of kinematics, force and motion, energy, linear momentum, rotation, torque and angular momentum, gravitation, fluids.

Note: Registration is restricted to students in the Faculty of Engineering.

Learning Objectives:

- Develop physics thinking skills and problem-solving approaches that are useful in other fields.
- Acquire an intuitive understanding of fundamental physics concepts with examples in linear and rotational motion, conservation of energy and momentum, and fluid mechanics.
- Acquire hands-on skills in physics experimental procedures through the attendance and completion of laboratories
- Build a foundation for success in Physics 1402 topics (waves, electricity and magnetism)
- Engage in critical analysis of a problem individually and through team effort, effectively communicating your approach to others through labs and in-class activities.

In person lectures, tutorials, and labs are the primary delivery mode for the course content. The OWL site will host course materials.

Relevant Key Sessional Dates:

Classes begin:	September 9
Fall Reading Week:	October 10 – 18
Last day of classes:	December 9
Exam period:	December 11 – 22

4. Course Materials

Textbook:

Sears and Zemansky's University Physics, 16th edition, H.D. Young, R.A. Freedman (Pearson). Available in e-text bundled with access to Mastering Physics online platform. A print copy can be ordered from the publisher if desired.

On-line Material:

Mastering Physics, from Pearson. Quizzes will be accessed and completed via this platform. Mastering Physics may be purchased as a package with the electronic version of the text.

Lab Manual:

Lab manual for Physics 1401A, available via Perusall.

To purchase the course materials please use the Western Bookstore link below:

https://bookstore.uwo.ca/textbook-search?campus=UWO&term=W2026A&courses%5B0%5D=001_UW/PHY1401A

OWL:

Students are responsible for checking the course OWL site (<https://westernu.brightspace.com/>) regularly for news and updates. This is the primary method by which information will be disseminated to all students in the class.

If students need assistance with the course OWL site, they can seek support on the [OWL Brightspace Help](#) page. Alternatively, they can contact the Western Technology Services Helpdesk. They can be contacted by phone at 519-661-3800 or ext. 83800.

Technical Requirements

There are no particular technical requirements for this course beyond access to a computer to enable access to the OWL site, Mastering Physics, and Perusall.

5. Methods of Evaluation

Grading Scheme

The overall course grade will be calculated as listed below:

Assignments (5)	10%
Laboratories (4)	10%
Midterm Exam	30%
Final Exam	50%

Quizzes/Assignments:

There will be 5 assignments administered online on the Mastering Physics platform. A detailed schedule will be provided on OWL.

Midterm Exam:

Date: Sunday October 25, 10am to 12noon (locations TBA).

Final Exam:

Date: TBA (final exam schedule will be posted by the Registrar's Office when available)

The final examination will be cumulative and may contain questions about the labs; students must be prepared to answer those questions, including those students who have obtained a lab exemption.

Lab Completion, Passing, and Grade Requirements

In order to satisfy the lab requirement for the course, a student must **complete at least three out of the four labs**.

A lab is considered **complete** only when the student:

1. Attends the scheduled lab.
2. Collects the required experimental data.
3. Completes the lab worksheet.
4. Uploads the completed worksheet to Gradescope before the deadline.

To **pass an individual lab**, the student must obtain **at least 5 out of 10 marks** on the submitted lab worksheet. If the student achieves 5/10 or higher, the student receives the **full credit allocated to that lab**.

If the student receives **less than 5/10**, the student has failed that lab. The credit associated with that lab

will be **transferred to the final exam**.

Lab Component and Transfer of Marks

The four labs together are worth **10% of the final course grade**, with each lab contributing **2.5%**.

- If a student **completes and passes all four labs**, they receive the full **10%** lab component.
- If a student **misses a lab or fails a lab**, the percentage associated with that lab will be **transferred to the final exam**.

SRA

No SRA is required for any lab. If a student submits an SRA for a lab, it will not be considered, as the course already provides flexibility through the built-in mechanism of transferring the credit for a missed or failed lab to the final exam.

Minimum Lab Requirement

A student must **complete at least three out of the four labs** to satisfy the lab component requirement for the course, except where a lab exemption has been obtained at the beginning of the course (i.e., via Accessible Education, or because the student had already passed the lab component and the entire course in a previous term, and is only repeating the course for grade improvement).

If a student **does not complete the required number of labs**, the student will be automatically withdrawn (WDN) from the course, and may appeal to the Dean of Science for receiving an Incomplete (INC) standing, provided that the student has otherwise passed the course.

Finally, satisfying the lab requirement does **not** guarantee that the student will pass the course overall.

Essential Learning Requirements

Even when Academic Consideration is granted for missed coursework, the following are essential to earn a passing grade in this course:

- Completion of a minimum of 3 out of 4 labs is required to pass the course.
- A minimum grade of 50% in the final exam. If this is not met, a failing grade for the course (equal to the final exam percentage grade) will be assigned.

When a student has not demonstrated proficiency in an essential learning requirement listed above, and when the shortfall results from a granted Academic Consideration, they will be withdrawn (WDN) from the course. The student may appeal to the Associate Dean (Academic) for reinstatement with an Incomplete (INC) standing. Where an appeal for INC is granted, their maximum course load may be reduced during the term in which they complete the outstanding course requirements.

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

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://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.

Midterms and Tests

This course has 1 midterm test and a **cumulative** final exam. There is no makeup test for a missed midterm. If a student misses a midterm, its weight will shift automatically to their final exam grade. If their final exam grade is higher than their midterm grade, their final exam grade will replace the midterm's weight in their overall grade. They do not need to request Academic Consideration for a missed midterm; the reweighing will be done automatically.

The only exception is an early sitting, offered solely for a university-sanctioned schedule conflict (e.g., conflict of two midterms, Varsity competitions) or a religious accommodation that prevents a student from writing the midterm at its scheduled time. If a student requires this accommodation, they must notify their instructor in writing no later than one week before the test. No other circumstance, including illness, qualifies for an early sitting or makeup; these are addressed through the automatic reweighting described above.

Assignments

This course has 5 assignments. Students are expected to complete 4 out of 5 to receive full credit for this component. If they miss up to 1 of these, they do not need to request Academic Consideration; the missing item(s) will not count against them, and their grade for this component will be calculated from their best 4 submissions.

For an assignment to be considered completed, a score of 70% or higher must be obtained. This will result in full marks for that assignment. Any score below that will result in a zero mark for the assignment.

If a student completes fewer than 4 assignments, the missing items will be recorded as a zero and included in their grade for this component. They are encouraged to submit all work, even if incomplete, since a partial mark is always better than a zero. If their final exam grade is higher than their grade on this component, their final exam grade will replace it.

Deadlines: The 48-Hour No-Late-Penalty Period

All take-home assignments, quizzes, and labs with a stated due date include an automatic 48-hour period after the deadline during which students may still submit without a late penalty. For example, if an assignment is due on November 5, they may submit it until November 7 without penalty. After this 48-hour period, no further submissions will be accepted, and students do not need to request Academic

Consideration for a missed deadline; their grade for this component will be calculated as described above.

Special Examination

Per university policy, Academic Consideration requests with supporting documentation are required for the final examinations scheduled during official examination periods by the Registrar's Office.

If the student has been approved by the Academic Advising Office to write a Special Examination (SPC) and the final exam is their only outstanding course component, an SPC will be assigned to them and scheduled by the instructor per university policy.

If the student misses their SPC exam and is approved for Academic Consideration, they will be withdrawn from the course without academic penalty. If they experienced extenuating circumstances such as prolonged illness, they may appeal to the Associate Dean (Academic), on a case-by-case basis, for the opportunity to write the final exam the next time the course is offered. An outstanding SPC will reduce their course load for the term in which the exam is deferred, as outlined in the [Definitions of Types of Examinations](#) policy.

If the student misses their SPC exam and Academic Consideration is not approved, or was not requested, they will receive a grade of zero on the exam.

6. Additional Statements

6.1 Religious Accommodation

When a recognized religious holiday either requires a student to be absent from the University, or requires or prohibits an activity that makes it impossible for them to complete an academic requirement scheduled that day, they are entitled to accommodation. No student will be penalized for an absence for religious reasons, and an alternative means of satisfying the requirement will be arranged. This accommodation is provided in accordance with the University's policy on Accommodation for Religious Holidays:

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

The student should submit their requests through the Student Absence Portal (SAP), identifying the conflict and the specific course component(s) affected (e.g., test, midterm, exam).

Midterms and Tests: If a religious observance conflicts with a midterm test, they must submit their request no later than **one week** before the test. Their instructor will arrange an early sitting of the test. As set out above, no makeup test is offered for any other reason; this early sitting is available specifically for this accommodation.

Final Examinations: If a religious observance conflicts with the final exam, the student must submit their request no later than **two weeks** before the exam. Their instructor will arrange a Special Examination to take place no later than one month after the end of the examination period.

Students are responsible for finding out what was covered in any class they miss due to a religious observance, and for taking the appropriate steps to keep up with the course.

If a suitable arrangement cannot be reached between a student and their instructor, they should consult the Undergraduate Chair of the department offering the course, and if necessary, the Associate Dean (Academic) of the Faculty of Science.

For a list of recognized religious observances, please visit the calendars posted on the Equity, Diversity & Inclusion website - <https://www.edi.uwo.ca> (About Us – Resources – Additional Resources – Calendars).

6.2 Academic 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.

6.3 General Academic Policies

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

Use of @uwo.ca email: 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 email address. It is the responsibility of the account holder to ensure that emails received from the University at their official university address are attended to in a timely manner.

Requests for Relief (formally known as “appeals”)

Policy on Request for Relief from Academic Decision:

https://uwo.ca/univsec/pdf/academic_policies/appeals/requests_for_relief_from_academic_decisions.pdf

Procedures on Request for Relief from Academic Decision (Undergraduate):

https://uwo.ca/univsec/pdf/academic_policies/appeals/undergrad_requests_for_relief_procedure.pdf

[If cross-listed as a grad course] Procedures on Request for Relief from Academic Decision (Graduate):

https://uwo.ca/univsec/pdf/academic_policies/appeals/graduate_requests_for_relief_procedure.pdf

6.4 Scholastic Offences

Policy on Scholastic Offences:

https://uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_offences.pdf

Procedures on Scholastic Offences (Undergraduate):

https://uwo.ca/univsec/pdf/academic_policies/appeals/undergrad_scholastic_offence_procedure.pdf

[If cross-listed as a grad course] Procedures on Scholastic Offences (Graduate):

https://uwo.ca/univsec/pdf/academic_policies/appeals/graduate_scholastic_offence_procedure.pdf

Use of Electronic Devices During Assessments

In courses offered by the Faculty of Science, the **possession** of unauthorized electronic devices during any in-person assessment (such as tests, midterms, and final examinations) is strictly prohibited. This

includes, but is not limited to: mobile phones, smart watches, smart glasses, hidden cameras and wireless earbuds.

Unless explicitly stated otherwise in advance by the instructor, the presence of any such device at a student's desk, on their person, or within reach during an assessment will be treated as a scholastic offence, **even if the device is not in use**.

Effective September 2026, the typical penalty for this offence is a failing grade in the course AND a 12-month prohibition on retaking the course.

Only devices expressly permitted by the instructor (e.g., non-programmable calculators) may be brought into the assessment room. It is their responsibility to review and comply with these expectations.

Use of Generative AI Tools

Unless otherwise stated, the use of generative AI tools (e.g., ChatGPT, Microsoft Copilot, Google Gemini, or similar platforms) is **not permitted** in the completion of any course assessments, including but not limited to: assignments, lab reports, presentations, tests, and final examinations.

Using such tools for content generation, code writing, problem solving, translation, or summarization—when not explicitly allowed—will be treated as a **scholastic offence**.

If the use of generative AI is permitted for a particular assessment, the conditions of use will be specified by the instructor in advance. If no such permission is granted, students must assume that use is prohibited. It is the student's responsibility to seek clarification before using any AI tools in academic work.

Use of Software for Assessments

Computer-marked multiple-choice tests and exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

6.5 Support Services

Academic Advising. Please visit the Science & Basic Medical Sciences Academic Advising webpage for information on adding/dropping courses, academic considerations for absences, requests for relief, exam conflicts, and many other academic-related matters: <https://www.uwo.ca/sci/advising/>.

Mental Health Support. 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.

Gender-Based and Sexual Violence. Western is committed to reducing incidents of gender-based and sexual violence (GBSV) and providing compassionate support to anyone who has gone through these traumatic events. If a student has experienced GBSV (either recently or in the past), they can 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.

Accessibility for Coursework. A student may contact the course instructor if they require lecture or printed material in an alternate format or if any other arrangements can make this course more accessible to them. If they have any questions regarding accommodations, they may also contact Accessible Education at http://academicsupport.uwo.ca/accessible_education/index.html

Learning Development and Success. Learning-skills counsellors at Learning Development and Success (<https://learning.uwo.ca>) are ready to help students improve their learning skills. The facility offers 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.

Student Councils.

Student-run support services are offered by the University Students' Council (<https://westernusc.ca>) and the Science Students' Council (<https://www.westernssc.ca>).