

**COURSE OUTLINE (SYLLABUS) FOR UNDERGRADUATE COURSE****1. Course Information****Course Information**

**Physics 1401A, Introductory Physics I, Fall 2020, on-line, labs partially in-person**

**List of Prerequisites**

Grade 12U Calculus and Vectors (MCV4U) or Mathematics 0110A/B

**Antirequisite(s):** Physics 1021, Physics 1028A/B, Physics 1301A/B, Physics 1501A/B, the former Physics 1020, 1024, 1026

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 have the necessary prerequisites.

**2. Instructor Information**

Dr. Silvia Mittler

PAB 208

Tel: 519 661 2111 ext 88592 (office: during Covid 19 not occupied!)

e-mail: [smittler@uwo.ca](mailto:smittler@uwo.ca)

Skype: Dr. Silvia Mittler (with appointment only)

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

Office hours are on an appointment bases only via Zoom or Skype. Appointments can be done via e-mail.

For course related issues, please contact the Course Administrator: Dr. Maryam Tabeshian, e-mail: [mtabeshi@uwo.ca](mailto:mtabeshi@uwo.ca).

**3. Course Syllabus, Schedule, Delivery Mode**

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: 0.5 course: weekly on-line package including PERSUALL reading and annotation, lecture videos, MasteringPhysics simulation learning tools, demonstration videos, MasteringPhysics

solving problem videos, MasteringPhysics *Dynamic Study Modules*, weekly quizzes, participation in weekly Fori, and a laboratory component with 4 labs (2 labs on-line and 2 labs in-person)

**Course Level Learning:**

Remember, understand, identify, explain, apply, analyze, and evaluate the concepts of: kinematics (including math review, vectors, derivatives and integrals) in 1D, kinematics and gravitation in 1D, kinematics in 2D and 3D, force and motion: Newton’s Laws, energy (work, energy, power, conservation), linear momentum (center of mass, linear momentum, impulse, collision), rotation, torque and angular momentum, fluids.

This course is “semi-asynchronous” on-line course, which means that there will not be meetings for classes as a group at a particular time. Instead, every student will determine his/her own schedule and rhythm for working through the course activities and materials week by week so that the course’s deadlines can be met.

There will be no tutorials, however an on-line Help Center.

Two out of the four labs are in-person.

**Time Line through the term:**

Week	Date	Chapter	Topic
0	Sep. 9-13	Appendices A, B, C, E and F	A: The International System of Units; B: Useful Mathematical Relations; C: The Greek Alphabet; E: Unit Conversion Factors; F: Numerical Constants; Prefixes for Powers of 10, Chapter 1.5: Uncertainties and Significant Figures
1	Sep. 14 - 20	1,2	Kinematics (including math review, vectors, derivatives and integrals) in 1D I
2	Sep. 21 - 27	1,2,13	Kinematics and Gravitation in 1D II and Excursion to Newton’s 2 <sup>nd</sup> Law
3	Sep.28 - Oct 4	3	Kinematics in 2D and 3D I, throwing an object and a car in a bend
4	Oct.5 - 11	3, 4	Kinematics in 2D and 3D II, uniform circular motion
5	Oct.13 - 18	5, 3	Force and motion I
6	Oct.19 - 25	5,13	Force and motion II
7	Oct 26 – Nov 1	6,7	Energy (work, energy, power, conservation) I
	Nov 2 - 9	Reading Week	
8	Nov 9 - 15	6,7	Energy (work, energy, power, conservation) II
9	Nov 16 – 22	8	Center of Mass, Linear Momentum, Collisions, Impulse
10	Nov 23 - 29	9	Rotation
11	Nov 30 - Dec 6	10	Torque & Angular Momentum
12	Dec 7 - 9	12	Fluids

Lab contact information: Dr. Shailesh Nene, Lab Coordinator  
Material Science Addition M 2203  
e-mail: [physlab1@uwo.ca](mailto:physlab1@uwo.ca)  
phone 519-661-2111 extension 80541

Direct all laboratory related questions to Dr. Shailesh Nene (e-mail [physlab1@uwo.ca](mailto:physlab1@uwo.ca)), not to your course instructor.

**Term Overview:**

Classes begin: September 9, 2020

Reading Week: November 2-8, 2020

Classes end: December 9, 2020

## 4. Course Materials

Textbook: University Physics, Volume 1 by Hugh D. Young & Roger A. Freedman 15th edition, Pearson, 2020 in combination with MasteringPhysics from Pearson and PERUSALL.

Required: An access code for Mastering Physics, the accompanying on-line learning resources, and access to PERUSALL is included in the textbook package. It can also be bought separately. The Pearson website for Mastering Physics is:  
<https://www.pearsonmylabandmastering.com/northamerica/masteringphysics/>  
**Do not register with any other e-mail accounts** such as gmail, yahoo, etc. because if you do, **your grades may be lost** when transferring grades from the Pearson site to Western's OWL site. OWL recognizes only the e-mail addresses ending with @uwo.ca. You need a Gradscope account ([www.gradscope.ca](http://www.gradscope.ca)). Entry code: **M2KD79**.

Lab Manual: Physics Laboratory Manual 2020-2021 for Physics 1301A/1401A/1501A. This Lab Manual will be available on PERUSALL.

Calculator: Sharp EL-510RNB or EL-510RN or Sharp EL-510RTB Scientific Calculator (non-programmable). This is the only calculator allowed in any quiz or exam.

All together are available in the Western Bookstore: <https://bookstore.uwo.ca/> with the following info: UNIVERSITY PHYSICS 1301/1401/1501 (Young & Freedman) Value-Pack ISBN: **9780137321063**

OWL: There is one OWL sites for Physics 1401. The course OWL site has a link to the Lab; a link to PERUSALL for reading and annotation; a link to MasteringPhysics with MasteringPhysics simulation learning tools, demonstration videos, MasteringPhysics solving problem videos, MasteringPhysics *Dynamic Study Modules*, and the End of Week Quizzes. The OWL site also contains lecture videos.

Course OWL site: A calendar with all course deadlines, lecture notes, access to interim grades, announcements, etc. are available from the course OWL site. To access this site, you will need to go to <https://owl.uwo.ca/> and log in using your UWO username and password.

Students should check OWL (<http://owl.uwo.ca>) on a regular basis for news and updates. This is the primary method by which information will be disseminated to all students in the class. Students are responsible for checking OWL on a regular basis.

All course material will be posted to OWL: <http://owl.uwo.ca>.

If students need assistance, they can seek support on the OWL 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

- stable internet connection
- computer with working microphone and webcam
- Sharp EL-510RNB or EL-510RN Scientific Calculator

## 5. Methods of Evaluation

Student performance will be evaluated regularly throughout the term week by week with the following tests/quizzes:

PERUSALL Reading and Annotation: Assignments open Saturdays at 0:00 (midnight Friday/Saturday) and close the next Wednesday at 24:00 (midnight Wednesday/Thursday)  
Example: *Week 1 PERUSALL opens midnight Friday/Saturday (Sept 11./12.2020) in Week 0*

Dynamic Study Module: all open at the start of the course and close individually (week by week) Friday 24:00 (midnight Friday/Saturday)

End of Week Quiz: opens Friday 0:00 (midnight Thursday/Friday) and closes Sunday 24:00 (midnight Sunday/Monday) with a duration of 90 min

Midterm and Final Exam under ProktorTrack: specific information, e.g. time settings (date, duration, start and end time) will be announced in "Announcements" on OWL. These exams are schedules by the university.

The overall course grade will be calculated as listed below:

Weekly PERUSALL (best 10 out of 12)	15%
Weekly Dynamic Study Module (10 out of 12)	15%
Weekly End of Week Quizzes (9 best out of 11)	20%
Midterm Test	20%
Final Exam (scheduled by Registrar's Office)	20%
Laboratory	10%

All weekly marked activities cover the week's material (see table and on OWL information for each week).

The scoring in the PERUSALL: Reading and Annotation is carried out as following:

- Contributing thoughtful questions and comments to the class discussion, spread throughout the entire reading
- Starting the reading early
- Breaking the reading into chunks (instead of trying to do it all at once)
- Reading all the way to the end of the assigned reading
- Posing thoughtful questions and comments that elicit responses from classmates
- Answering questions from others
- Up-voting thoughtful questions and helpful answers

Please see an example in OWL.

Note: The annotations on PERUSALL can be seen from all students within the study group and are supposed to be strictly on the reading material and on previous annotations of peer students of the study group. PERUSALL annotations can for instance be questions or a helpful response to a question, e.g. enlighten about uncomprehend material, etc.: a learning tool. No personal comments are allowed, nor any disrespectful annotations. In the case, a student complains about being disrespectfully criticized or made fun of on PERUSALL about his/her annotations, questions, comments, etc. by a peer student, the student responsible for the inappropriate annotation and/or comment will be removed from the PERUSALL study group and will receive a mark of zero for the entire PERUSALL component of the course!

The midterm will cover the material up to the midterm.

The final will cover all material of the entire course but with an emphasis of the material covered after the midterm.

**Important: In order to pass Physics 1401, a student must obtain:**

(1) a passing mark in the laboratory component and

(2) a mark of 50% or greater in the average of the two exam grades (midterm and final).

Students failing the lab component of the course and/or the exam component will be assigned a final course mark of no more than 40%.

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

## Accommodated Evaluations

**(1) Midterm Examination (make-up):** There will be one make-up Midterm exam that may be written only with the permission of the Academic Counselling office of your home faculty. The time and date for the midterm make-up exam will be announced on the course OWL site.

**(2) Final Examination (make-up):** In accordance with Senate Policy, a Special Examination will be held within thirty days of the regular final examination for students who are unable to write the regular final examination for medical or other documented reasons. To schedule a make-up final exam, please contact your faculty's Academic Counselling Office as soon as you are able to do so. They will assess your eligibility to write the Special Exam (the name given by the university to a makeup Final Exam) and inform your course instructor.

You may also be eligible to write the Special Exam if you are in a "Multiple Exam Situation". [http://www.registrar.uwo.ca/examinations/exam\\_schedule.html](http://www.registrar.uwo.ca/examinations/exam_schedule.html)

**(3) PERUSAL Reading and Annotation:** No make-up for RERUSALL Reading and Annotation as this is a group activity! The 10 best out of the 12 will be counted towards the mark.

**(4) Dynamic Study Modules:** No make-up for Dynamic Study Modules! The 10 best out of the 12 will be counted towards the mark.

### **(5) End of Week Quizzes:**

No make-up for End of Week Quizzes! The best 9 out of the 11 will be counted towards the mark.

We advise you to complete online MasteringPhysics quizzes without waiting until the last moment in order to avoid internet problems or any other unforeseen situations. It is your responsibility to use a reliable internet service and a device for these quizzes. Do not forget to click the "Submit" button on completion.

### **(5) Laboratory Marks:**

Please refer to 'Evaluation', 'Absences from the laboratory' and 'Make-up lab policy' in the Lab Outline given on the OWL page.

*Please note that any work missed without approved accommodation from academic counseling will be assigned a zero mark.*

## 6. Accommodation and Accessibility

### Accommodation Policies

Students with disabilities work with Accessible Education (formerly SSD) which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The Academic Accommodation for Students with Disabilities policy 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)

Students with disabilities will be individually accommodated according to the Accessible Education recommendations for the End of Week Quizzes, the Midterm and the Final, but not on the Dynamic Study Modules or the PERUSALL assignments.

### **Academic Consideration for Student Absence**

Students will have up to two (2) opportunities during the regular academic year to use an on-line portal to self-report an absence during the semester, provided the following conditions are met: the absence is no more than 48 hours in duration, and the assessment for which consideration is being sought is worth 30% or less of the student's final grade. Students are expected to contact their instructors within 24 hours of the end of the period of the self-reported absence, unless noted on the syllabus. Students are not able to use the self-reporting option in the following circumstances:

- for exams scheduled by the Office of the Registrar (e.g., December and April exams)
- absence of a duration greater than 48 hours,
- assessments worth more than 30% of the student's final grade,
- if a student has already used the self-reporting portal twice during the academic year

If the conditions for a Self-Reported Absence are *not* met, students will need to provide a Student Medical Certificate if the absence is medical, or provide appropriate documentation if there are compassionate grounds for the absence in question. Students are encouraged to contact their Faculty academic counselling office to obtain more information about the relevant documentation.

Students should also note that individual instructors are not permitted to receive documentation directly from a student, whether in support of an application for consideration on medical grounds, or for other reasons. **All documentation required for absences that are not covered by the Self-Reported Absence Policy must be submitted to the Academic Counselling office of a student's Home Faculty.**

For policy on Academic Consideration for Student Absences - Undergraduate Students in First Entry Programs, see:

[https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/Academic\\_Consideration\\_for\\_absences.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Consideration_for_absences.pdf)

and for the Student Medical Certificate (SMC), see:

[http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/medicalform.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf)

### **Religious Accommodation**

Students should consult the University's list of recognized religious holidays, and should give reasonable notice in writing, prior to the holiday, to the Instructor and an Academic Counsellor if their course requirements will be affected by a religious observance. Additional information is given in the Western Multicultural Calendar:

<https://multiculturalcalendar.com/ecal/index.php?s=c-univwo>

You may also be eligible to write the Special Exam if you are in a "Multiple Exam Situation" (see [http://www.registrar.uwo.ca/examinations/exam\\_schedule.html](http://www.registrar.uwo.ca/examinations/exam_schedule.html)).

## 7. Academic Policies

The website for Registrarial Services is <http://www.registrar.uwo.ca>.

In accordance with policy, <http://www.uwo.ca/its/identity/activatenonstudent.html>, 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 his/her official university address is attended to in a timely manner.

**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: [http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/scholastic\\_discipline\\_undergrad.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf).

### Remote Proctoring

Midterm and Final in this course will be conducted using the remote proctoring service, such as ProctorTrack. By taking this course, you are consenting to the use of this software and acknowledge that you will be required to provide **personal information** (including some biometric data) and the sessions will be **recorded**. More information about this remote proctoring service is available in the Online Proctoring Guidelines at the following link:

<https://www.uwo.ca/univsec/pdf/onlineproctorguidelines.pdf>

You will be required to keep your camera and your microphone on for the entire session, and share your screen with the invigilator if asked to do so at any time during the exam.

Completion of this course will require you to have a reliable internet connection and a device that meets the technical requirements for this service. Information about the technical requirements are available at the following link:

<https://www.proctortrack.com/tech-requirements/>

Before the Midterm is done, an "Instruction about OWL and ProctorTrack" will be available on OWL in "Resources" under "Info for Exams". On "ProctorTrack" an "Onboard Test" will be conducted to make sure no technical problems arise. For this you will need a pass code which will be announced prior to the "Onboard Quiz" on OWL. Anybody having technical problems with log-on into ProctorTrack at the Midterm who did not practice the log-on into ProctorTrack via the "Onboard Quiz" will not be accommodated!

At the beginning of the ProctorTrack Exams you will need to show your ID, your calculator, both sides of the Equation Sheet and the empty pages of the scratch paper you will be doing your calculations on. Please keep your work on the scratch paper of the exam until the end of the term as your course instructor might want to see them via Zoom or Skype!



## 8. Support Services

Please visit the Science & Basic Medical Sciences Academic Counselling webpage for information on add/drop courses, academic considerations for absences, appeals, exam conflicts, and many other academic related matters: <https://www.uwo.ca/sci/counselling/>

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 Student Accessibility Services (SAS) at (519) 661-2147 if you have any questions regarding accommodations.

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/>.

Learning-skills counsellors at the Student Development Centre (<http://www.sdc.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.

Students who are in emotional/mental distress should refer to Mental Health@Western ([http://www.health.uwo.ca/mental\\_health](http://www.health.uwo.ca/mental_health)) for a complete list of options about how to obtain help.

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