

# WELCOME to Physics 2070A

## Understanding Earth's Atmosphere

### Course Information: Fall 2015

#### 1. Course Description

**Course title:** Physics 2070A: Understanding Earth's Atmosphere

**Description:** This course is designed for non-science students and examines the atmosphere in which we live, how it affects our everyday life, and how we in turn, as the technologically dominant earth-borne species, affect it. Atmospheric phenomena such as wind, temperature, composition, precipitation and electricity are used to illustrate basic physical principles.

**Pre or co-requisites:** None

**Antirequisites:** Physics 1028A/B, 1301A/B, 1401A/B, 1501A/B, 2700A/B or the former Physics 1020, 1024, 1026.

Unless you have either the prerequisites for this course or written special permission from your Dean to enrol 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.

**Extra Information:** 2 lecture hours, 0.5 course

*May not be taken for credit by students in the Faculty of Science.*

**Lecture Times:** Tuesdays 1.30-3.30 pm, B&GS0165

#### 2. Instructor & Contact Information

**Instructor:** Dr. Els Peeters

**Office:** PAB 206 (Physics & Astronomy Building)

**E-mail:** via 'Messages' in Sakai

Please allow 2-3 business days for a response.

**Office Hours:** Mondays from 1.30-2.30pm. If this time is not convenient, you can make an appointment for another day/time. The TA's office hours will also be posted on the course website. If you need to talk to me briefly, feel free to do so after class.

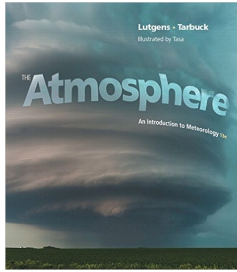
#### 3. Course website

All online instructional materials as well as grades for course components will be posted on the secure Sakai site. For technical issues accessing this site in general or this course in particular, please check out the information at the ITS website: <http://www.uwo.ca/its/> and contact ITS services if problems persist.

The Sakai course website will be the only medium where additional course materials are distributed at the appropriate time; where announcements are made; Sakai is furthermore the means to get access to your marks for various course components. Additionally, there is a course discussion forum, and a calendar containing all important dates for this course.

## 4. Required course materials

### Textbook:



### The Atmosphere: An Introduction to Meteorology, 13<sup>th</sup> Edition

Lutgens • Tarbuck  
Pearson Publishing

Available at the Book Store or on-line  
Print ISBN-13: 978-0321984623  
E-text ISBN-13: 978-0134016016 (available via  
<http://www.coursesmart.com/>)

The suggested readings list will be made available on Sakai. Additional course materials (e.g. lecture notes, slides, movie clips,...) will be made available on Sakai.

## 5. Course overview & objectives

Physics 2070A provides a general introduction to the Earth's atmosphere. At the end of this course, students should be able to:

- Know by name, define and characterize the main structural elements of the Earth's atmosphere
- Describe the past, present and future behaviour of the Earth's atmosphere by applying scientific observation and reasoning
- Understand how the Earth's atmosphere interacts with the other components of the Earth system
- Understand the linkage between the Earth's atmosphere and humans

## 6. Course topics

Tentative list of course topics:

- Introductory physics (the atomic nature of matter, temperature, heat, thermodynamics, change of phase)
- Structure and composition of the atmosphere
- Air temperature, pressure
- Atmospheric stability, humidity, condensation, clouds
- Understanding seasons
- Conceptual overview of radiation in the atmosphere; propagation of electromagnetic waves
- Earth's atmosphere since ancient times
- Weather and climate
- Air pollution, greenhouse effect, climate change
- Special topics (e.g. optical phenomena, atmospheres of other planets)

## 7. Course communications

Students should check OWL (<http://owl.uwo.ca>) and their uwo.ca email on a regular basis. This is the primary method by which information will be disseminated to all students in the class. The missing of critical information due to your failure to check OWL or email cannot be used as a basis for appeal.

## 8. E-mail policies

You can email the instructor or TA by using 'Messages' in Sakai. We do not respond to emails sent to our UWO e-mail address.

Emails with questions that can be answered based on the information found in this course outline will not be responded to. Being able to find information yourself is an important soft-skill and an employability outcome.

## 9. Course Components, Grades & Requirements

Your final grade in this course, out of 100, is obtained from marks for various course components (explained below) and calculated according to the following scheme:

Course Component	Weight
Midterm I	25%
Midterm II	25%
Final Exam	40%
Assignments (best 4 out of 5)	10%

To pass this course, you need to obtain a final mark of at least 50%.

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

Grades will be posted on Sakai regularly; it is your responsibility to check these grades regularly. Any errors, or appeals to your scores, **must be reported to your instructor within two weeks** of their initial posting.

## 10. Tests & Exams

- There will be two midterm tests during the semester on the following dates:

Date	Time	Location
Friday, Oct 16	7 – 9 pm	PAB 34
Friday, Nov 13	7 – 9 pm	PAB 34

- The final exam is to be scheduled by the Registrar's Office during the 2015 final examination period (Dec 10 -22); exam times will be posted on the course website when available.
- Students needing to make travel arrangements are advised to book a travel date after the end of the examination period, and avoiding the term test dates. ***No makeup exams will be given to accommodate travel!***
- Midterm Tests and the Final Exam will be a combination of all or some of the following formats: multiple-choice, long answer, true-false and fill-in-the-blank questions. The *Scantron* forms, if used for these exams, are computer-marked and cannot be processed when filled out in ink, therefore you should **bring a pencil to the tests and exams**, and **never** fill out any section of these forms in ink. Filling out any section in ink may result in a penalty.
- You should **bring your Western student ID card** to all tests/exams (midterm and final). Failure to do so may result in a penalty (i.e. without your Western student ID you may not be permitted to write tests and exams).
- The tests and exams are meant to test your ***knowledge and understanding*** of the material covered in class, all of the class slides, the corresponding textbook sections and distributed course notes whenever appropriate. Material from the textbook that is not discussed or explicitly referred to in class or in the notes will not be tested on any exam.
- The final exam is cumulative.

## 11. Assignments

There will be five assignments throughout the semester, typically every two weeks. Students will be allowed to discuss the material among themselves, but each student will have to turn in her/his own copy of the assignment showing original work. Assignments can be submitted via Sakai. Late assignments are subject to late penalty as follows: up to 24 hours – 25% of the maximum score will be deducted from the grade; 24 hrs and up to 48 hrs – 50% of the maximum score will be deducted from the grade. Late assignments submitted more than 48 hours after the specified due date/time will not be accepted. Best 4 out of 5 assignments will be counted towards the final course grade. That means that you can miss 1 (one) assignment per semester without any penalty.

Assignment	Date
1	Tuesday September 29 at 1pm
2	<i>Friday</i> October 9 at 1pm
3	Tuesday October 27 at 1pm
4	Tuesday November 17 at 1pm
5	Tuesday December 1 at 1pm

## 12. Make-up policy

You should also be aware of the following Senate regulations:

- If you are unable to meet a course requirement due to illness or other serious circumstances, you must provide valid medical or other supporting documentation to the Dean's office as soon as possible and contact your instructor immediately. It is the student's responsibility to make alternative arrangements with their instructor once the accommodation has been approved and the instructor has been informed. In the event of a missed final exam, a "Recommendation of Special Examination" form must be obtained from the Dean's Office immediately. For further information, please see [http://www.uwo.ca/univsec/handbook/appeals/accommodation\\_medical.pdf](http://www.uwo.ca/univsec/handbook/appeals/accommodation_medical.pdf).
- A student requiring academic accommodation due to illness, should use the Student Medical Certificate when visiting an off-campus medical facility or request a Record's Release Form (located in the Dean's Office) for visits to Student Health Services. The form can be found here: [https://studentservices.uwo.ca/secure/medical\\_document.pdf](https://studentservices.uwo.ca/secure/medical_document.pdf).
- It is Faculty of Science policy that a student who chooses to write a test or exam deems himself or herself fit enough to do so, and the student must accept the mark obtained. Claims of medical, physical, or emotional distress after the fact will not be considered.
- **Midterms:** To be allowed to write a make-up test, you must provide the proper documentation to the Dean's Office of your Faculty supporting the reason for your absence at the scheduled test. The instructor may also require an explanation, and possibly additional documentation, for the time interval between the missed test and when the instructor was contacted about a make-up. Make-up test can be of a different exam format than the regular test.
- **Final Exam:** 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 examination for medical or other documented reasons. Requests for such a Special Examination must be made to the Associate Dean, Faculty of Science. Note that if you fail to write a scheduled Special Examination, permission to write another Special Examination will be granted only with the permission of the Dean in exceptional circumstances and with appropriate supporting documents. In such a case, the date of this Special Examination normally will be the scheduled date for the final exam the next time the course is offered.

### 13. Cheating (Scholastic Offenses)

Scholastic Offenses are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offense, at the following web site:

[http://www.uwo.ca/univsec/handbook/appeals/scholastic\\_discipline\\_undergrad.pdf](http://www.uwo.ca/univsec/handbook/appeals/scholastic_discipline_undergrad.pdf)

It is a scholastic offense to cheat on a test or exam, to plagiarize a course project, to modify marked material to falsely justify additional credit. Cheating also includes having available any other electronic devices than a watch during a test or exam. Committing a scholastic offense is attended by academic penalty, which may include expulsion from the program. 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. If you are caught cheating, there will be no second warning. Any student caught engaging in this behavior will (1) receive a mark of zero on the course component in question; and (2) may be subject to a further, and often quite severe, penalty.

### 14. Accessibility

Please contact the course instructor if you require material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 661-2111 x 82147 for any specific question regarding an accommodation.

### 15. Classroom Conduct

The lectures in this course are intended to provide students with an opportunity to learn, and we expect you to respect the rights of your classmates to benefit from the lectures by limiting your conversations to those essential to the class. Please arrive on time, switch off your cell phones and do not leave during the lectures. Laptops will only be allowed when used for the purpose of taking notes, and not for any other application. Disruptive behavior in class or on Sakai will not be tolerated. Students who persist in loud, rude or otherwise disruptive or inappropriate behavior will be asked to leave.

### 16. Getting help

Students who are in emotional/mental distress should refer to Mental Health@Western

<http://www.uwo.ca/uwocom/mentalhealth/> for a complete list of options about how to obtain help.

Learning-skills counsellors at the Student Development Centre (<http://www.sdc.uwo.ca>) are ready to help you improve your learning skills.

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

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

### 17. Accommodation for Religious Holidays

Please see the link below for the University's policy on for accommodation due to religious holidays.

[http://www.uwo.ca/univsec/handbook/appeals/accommodation\\_religious.pdf](http://www.uwo.ca/univsec/handbook/appeals/accommodation_religious.pdf)

### 18. Complaints and Suggestions

If you have a concern about something, please let us know. We rely on your feedback. Please contact initially the person most concerned – this will usually be your instructor. If that is not satisfactory, or if there is something more general bothering you, talk it over with the Physics & Astronomy Department Chair or the Associate Chair of Undergraduate Studies (for contact information see <http://www.physics.uwo.ca>).

## 19. Your Grade

You earn your grade for completing course requirements, and for having gained a good knowledge and understanding of the course material. To maximize this grade, you should:

- 1) read the lecture notes and/or assigned textbook reading before each class;
- 2) attend class regularly, and **ask questions!**;
- 3) review past lectures regularly;
- 4) answer all of the questions in your textbook;
- 5) seek regular help for material that you do not understand.

On average, this should take up about 6 hours per week. Helpful tips on test writing skills are provided on the website of the Student Development Centre <http://www.sdc.uwo.ca/learning/index.html?mcwrit>.

If you find that you are falling behind or are having difficulties with the course material, please contact your instructor or a TA immediately.