

## Particle Physics: Phys 4930B Winter 2020

The University of Western Ontario

**Instructor:** Andrea Soddu [asoddu@uwo.ca](mailto:asoddu@uwo.ca), office: PAB122. If you wish to contact your instructor, please send an email **using your Western email address** and include *4251* in the subject line.

**Class time:** Tue 3:30pm-5:30pm and Thu 11:30am – 12:30pm in PAB-148.

**Accessibility:** 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 Services for Students with Disabilities (SSD) at 661-2111 ext. 82147 if you have questions regarding accommodation.

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

**Course Website:** 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. The missing of critical information due to your failure to check OWL cannot be used as a basis for appeal.

**Course Materials:** The required textbook is *Introduction to Elementary Particles, 2<sup>nd</sup> revised edition*, by David Griffiths. Copies are available at the Western Bookstore. Assignments, supplemental information, and references will be posted on the course website.

**Course Objectives:** In this course you will be shown that vacuum is much more than emptiness, and the virtual is as much important as the real world.

**Anticipated Topics:** Lecture topics are centered on the key objectives of the course. The topic coverage shown below is only approximate and may change depending on lecture progress.

Chapter 2 The Four Forces  
Chapter 3 Relativistic Kinematics  
Chapter 4 Symmetries  
Chapter 6 The Feynman Calculus  
Chapter 7 Quantum Electrodynamics  
Chapter 10 Gauge Theories  
Chapter 11 Neutrino Oscillations

**Course Evaluation:** 30% Assignments, 30% Midterm Exam, 40% Final Exam

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

The **anticipated date of the Midterm exam (3 hours) is February 18**, and possibly in the evening.

There will be four assignments of similar weight. No assignments will be dropped from your grade for any reason.

**Calculator Policy:** For the exams it is likely you will need a scientific calculator (with log, trig functions), pen and pencil. These will not be provided and if you forget them you will probably fail the exam. However, you cannot use anything capable of wireless communication, or

anything capable of storing and displaying large text files. If you are not sure if your calculator is ok, go to [www.staples.ca](http://www.staples.ca) web site, type “scientific calculator” into the search bar and any one of the calculators that come up costing less than \$15 is ok. Make sure you know how to use the calculator before the exam.

**Academic Accommodation Due to Illness:** It is Faculty of Science policy that a student who chooses to write a test or exam deems themselves 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.

If you are unable to meet a course requirement due to illness or other serious circumstances, you must provide valid medical or supporting documentation to the Academic Counselling Office of your home faculty as soon as possible.

If you are a science student, the Academic Counselling Office of the Faculty of Science is located in WSC 191, and can be contacted at 519-661-3040 or [scibmsac@uwo.ca](mailto:scibmsac@uwo.ca). Their website is [http://www.uwo.ca/sci/undergrad/academic\\_counselling/index.html](http://www.uwo.ca/sci/undergrad/academic_counselling/index.html).

A student requiring academic accommodation due to illness must use the Student Medical Certificate ([https://studentservices.uwo.ca/secure/medical\\_document.pdf](https://studentservices.uwo.ca/secure/medical_document.pdf)) when visiting an off-campus medical facility.

For further information, please consult the university’s medical illness policy at [http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/accommodation\\_medical.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf).

**There are no make-up tests.** If your faculty’s Academic Counselling Office has approved your circumstances, the value of the missed test will be reallocated as described on the previous page.

If you miss the Final Exam, contact your faculty’s Academic Counselling Office as soon as possible. They will assess your eligibility to write the Special Exam (the name given by the university to a makeup Final Exam) in May of 2015.

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)).

**Academic Integrity:** Students must write their essays and assignments in their own words. Whenever students take an idea, or a passage from another author, they must acknowledge their debt both by using quotation marks where appropriate and by proper referencing such as footnotes or citations. Plagiarism is a major academic offence.

All required papers may be subject to submission for textual similarity review to the commercial plagiarism-detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (<http://www.turnitin.com>).

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at this website: [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).