

Planetary Science Short Course, 2015.

1. Course Information

Course name: Planetary Science Short Course

Course number: PLANETSC 9603A

Location: PAB 26, BGS 1065, BGS 0184

Hours: 9-5, September 8-14, 2015

A detailed schedule is available at <http://cpsx.uwo.ca/study/study-1/graduate-courses/2015-ps-short-course>

2. Instructor Information

Course coordinator: Dr. Tony Withers, tony.withers@uwo.ca.

Instructors for various modules include: Dr. Audrey Bouvier (audrey.bouvier@uwo.ca), Dr. Peter Brown (pbrown@uwo.ca), Dr. Stan Metchev (smetchev@uwo.ca), Dr. Gordon Osinski (gosinski@uwo.ca), Dr. Alexandra Pontefract (apontefr@uwo.ca), Dr. Livio Tornabene (ltornabe@uwo.ca), Dr. Paul Wiegert (pwiegert@uwo.ca), and Dr. Tony Withers (tony.withers@uwo.ca).

3. Course Description

This is an intensive 7-day short course for graduate students, researchers, industry and government employees on planetary science. **This course is mandatory for all new planetary science graduate students at Western and should be taken during the first year.** The focus of the course will be on the fundamental processes that have shaped the terrestrial planets and their moons, and asteroids. Particular emphasis will be placed on investigations of the Moon, Mars, and asteroids, which represent the highest priority targets for the Canadian planetary science community and the Canadian Space Agency. Some of the world's leading experts on planetary science will present 1 to 2-day modules on selected topics. The course will be suitable for advanced undergraduate students, graduate students and for professionals from industry and government. The course will feature both overview lectures on background theory, smaller topical study groups as well as hands-on activities involving imagery returned from unmanned orbiters and landers as well as astromaterials in the form of meteorites and analogue materials. Recent and ongoing planetary missions will be highlighted. It is intended to provide the non-specialist with a working knowledge of the multidisciplinary fields within planetary science. This course will focus on the following topics or modules:

- Cosmogony – Origin of the solar system and planet formation.
- Planetary interiors.
- Planetary surfaces.
- Planetary atmospheres.
- Astrobiology and the search for life.
- Exoplanets.

Specific topics that will be addressed in each module, where applicable, include:

- The use of remote sensing datasets from planetary missions.
- Terrestrial analogues of space environments.
- Astromaterials and analytical techniques for sample analysis.

4. Course Materials

A complete set of course notes and related reading material will be provided for each session of the course. These will form the basis for problem sets and practical exercises. Some of the exercises will require the use of computational software. Computing facilities will be available in BGS 0184.

5. Methods of Evaluation

The one week course (PLANETSC 9603A) is a 0.5 FCE credit. Students registered in the course will be evaluated as follows:

- Problem sets, exercises, and laboratory write-ups – Due at Noon on Sept. 14 **40%**
- **Group project report – Due by 5 pm on Oct. 23 **30%**
- **Group project presentation **20%**
- **Evaluation and critique of other group presentations **5%**
- **Mission Proposal and Project Management Report – Due at 8pm on Sept. 5 **5%**

*** The short course group project will involve groups of students (5 - 6) working on various aspects of planetary exploration mission development. Each team will focus on a particular aspect, or aspects, of mission design or implementation. Groups will research each topic, preparing their presentation in the form of a proposal. Each group will decide the role played by each group member; at the end of the project the other group members will confidentially assess each member's contribution to the final presentation. Further guidance will be provided during the course. Time will be made available to develop the group projects throughout the course in the mid-late afternoon; some evening work will be required.*

6. Statement on Academic Offences

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_grad.pdf

7. 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 519-661-2111 x 82147 for any specific question regarding an accommodation.

8. Professional Development

The course is applicable toward continuing education and professional development requirements for Professional Registration.