

PHYS 2070 Observational Astronomy 2008-2009

Course Website:	http://www.umanitoba.ca/faculties/science/astronomy/jwest/ http://www.umanitoba.ca/angel
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Observatory director:	Ian Cameron
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Class times:	Tuesday & Thursday 19:00 to 22:00
Location:	383 University College, Machray Hall Computer Lab, and Glenlea Astronomical Observatory. In general, all clear nights will be spent at the observatory. Cloudy nights will be spent in the classroom, computer lab, or occasionally the planetarium.
Office Hours:	by appointment
Course description:	Students will undertake a project on galaxies or nebulae using the University of Manitoba's Astronomical Observatory at Glenlea. There will be several small observing projects throughout the year, one major project and two term tests. For the major project, students will learn to use the 40 cm telescope at Glenlea and will acquire their own data with the instrument. The data will be analyzed and presented both orally and in the form of a website.
Textbook:	2008 Observer's Handbook 2009 Observer's Handbook (available in late November)
Supplemental texts:	Observing the Universe, Edited by Andrew J. Norton Observational Astronomy, 2nd Edition, D. Scott Birney, Guillermo Gonzalez, David Oesper Digital Image Processing, 2 nd Ed., Gonzalez and Woods Introductory Astronomy & Astrophysics, 4 th Ed., Zeilik & Gregory Planetarium software such as "Starry Night" (recommended), "Sky Chart III" (free downloadable version), "WinStars" (installed on the INS network), or other similar program
Required materials:	Pencil and eraser Valid, reliable email address (preferably a UofM email address) Clothing that is appropriate for cold weather Flashlight with red filter (red balloons or red nail polish work well as filters; alternatively use a red LED flashlight) Hardcover Observing Logbook (Black Physics Lab Book is ideal; should have blank pages for sketches, graph paper for graphs, and lined paper for notes)
Academic Integrity:	Students should acquaint themselves with the University's policy on plagiarism and cheating and examination impersonation (see page 28 in the University of Manitoba Undergraduate Calendar 2007-8 under General Academic Regulations and Policy sections 7.1 & 7.2). http://webapps.cc.umanitoba.ca/calendar09/regulations/

Course Outline:

1. Observing skills
 - a. star charts
 - b. astronomical catalogues
 - c. nomenclature
2. Celestial spheres
 - a. coordinate systems
 - b. motion of the sky
 - c. time systems
3. Software tools for observing/computer skills
4. Space Motions
5. Quantifying light
6. Telescopes and optical systems
7. Atmospheric Effects
8. CCD cameras and detectors
9. Digital image processing and data reduction
10. Astronomical photometry
11. Other astronomical analysis techniques
12. Selected topics in astrophysics (time and interest dependent)

Evaluation:

Observing	20%
40 cm telescope/observatory test	3%
observatory practice (attendance, preparedness, etc.)	3%
observing assignments	7%
δ -Cephei assignment	7%
Observing/Research Logbook	10%
In-Class Assignments and Oral Presentations	15%
Tests	20%
term test I	10%
term test II	10%
Final Project	35%
final oral presentation	10%
final website	25%

In the event of unusually poor weather, the mark distribution may be altered to give more weight to tests and assignments.

Policy on late assignments:

5% will be deducted for each day that an assignment is late. There will be **no make-up** for missed observing sessions/assignments. Please check your schedule for possible exam conflicts in other courses and notify me immediately.

Important Dates:

NOTE: Due to the unpredictable nature of the weather, these dates are subject to change.

Observing project proposals due	November 4, 2008
Logbooks due	November 25, 2008
Term test I	November 25, 2008
Observatory test	November 27, 2008
Last class of Term I	December 2, 2008
First class of Term II	January 6, 2009
Mid-Term Break	February 16-20, 2009
δ -Cephei observing project due	March 17, 2009
Term test II	March 24, 2009
Logbooks due	April 2, 2009
Final oral presentations	April 7, 2009
Last day of classes	April 9, 2009
Deadline to complete website	April 15, 2009

Computer accounts

All PHYS 2070 students must claim computer accounts on the University of Manitoba central system. Both UMnetID and INS accounts are required. These accounts are required for accessing Angel, email, and creating webpages. Some classes will take place in the open area computer labs and an INS account is required to login to those machines.

All students are required to have a reliable email account that is checked regularly. All students must subscribe to the class mailing list, class-16-207. The mail list is used primarily to communicate observing announcements, and to ask and obtain answers to questions, etc.

NOTE: It is preferred that you use your University of Manitoba "cc" email account for this course. Web based email clients such as hotmail, yahoo, and even gmail are often unreliable and the mail delivery times are sometimes slow. Any email missed due to the fault of a web service other than the University of Manitoba is the responsibility of the student.

Using ClaimID

To access your university computer accounts, you must first use "ClaimID". ClaimID can be accessed via the following webpage: <http://www.umanitoba.ca/claimid>

You will need your student number and you must have your fee payment completed and processed by the University.

Subscribing to the class-16-207 mailing list

Go to:

<http://lists.umanitoba.ca/mailman/listinfo/class-16-207>

There is a section on the page for subscribing to the list. Fill in the form with your e-mail address, your desired subscription password, and confirmation of that password. After filling in this form, click the "Subscribe" button. You will then be shown a page with the status of the subscription attempt. E-mail will also be sent.

Angel

Angel is used in this course for posting grades, lecture notes, and other class related materials. To login to Angel, visit the following webpage: <http://www.umanitoba.ca/webct>

You will need your UMnetID and password to access Angel