

**Syllabus — ASTRONOMY — Natural Science 1740 6.0 A — York University F2011-W2012 (Term Y)**

**Lectures:** MWF 10:30-11:30 in **Curtis Lecture Hall I (CLH I)**.

Lecturer & Course Director: **Patrick Hall, 337 Petrie, [phall@yorku.ca](mailto:phall@yorku.ca), x77752**

Course homepage: <http://www.yorku.ca/phall/nats1740.html>

Division of Natural Science website: <http://www.nats.yorku.ca>

**E-mail to Prof. Hall MUST include “NATS1740” in the subject to avoid spam filtering!**  
**But please read this syllabus carefully first: Prof. Hall WILL NOT ANSWER e-mail questions already answered here, or in the lab manual, or the course website and FAQ.**

Natural Science courses at York University are designed to help develop a basic understanding of science and scientific critical thinking in a non-technical but thought-provoking manner.

Natural Science 1740 6.0, Astronomy, uses one of the oldest sciences to show that basic scientific principles can explain how the universe works. Topics include the development of modern astronomy, current missions to Mars and elsewhere in our solar system, planets orbiting other stars, the question of life beyond Earth, black holes, dark matter, dark energy, and the history of the universe(s). With the assistance of demonstrations, labs and observing projects, students will gain familiarity with the night sky and with basic astronomy and physics concepts.

The course is not taught at an advanced mathematical level. Occasional use of high school mathematics up to the level of Grade 11 is all that is necessary (basic principles of geometry and algebra, but not calculus).

A note about behavior. If you come to class, it should be to learn astronomy. If instead you engage in behavior distracting to other students, you will be asked to leave the classroom.

Much about the universe is still unknown, and many exciting discoveries will no doubt occur in our lifetimes. With the help of the teaching assistants and the staff of **the York Astronomical Observatory (open to all students and the public every clear Wednesday night)**, I will endeavor to share with you the excitement of modern astronomy. Enjoy! --- Professor Hall

**Important Dates and information:**

Last day to **ENROL** without Course Director permission is **Tuesday, September 20, 2011**.

Last day to **ENROL even with** Course Director permission is **Tuesday, October 25, 2011**.

Last day to **DROP** without a grade being submitted for Term Y is **Friday, February 10, 2012**.

**All students are expected to familiarize themselves with the following information,** available on the York University Secretariat webpage (<http://www.yorku.ca/secretariat/policies/>):

- **Student Code of Conduct**
- **Policy on Academic Honesty;** see the tutorial at [http://www.yorku.ca/tutorial/academic\\_integrity/](http://www.yorku.ca/tutorial/academic_integrity/)

**Academic accommodation for students with physical, medical, systemic, learning or psychiatric disabilities:** Students who feel that there are circumstances which may interfere with the successful completion of the exams or other course requirements and students with physical, learning or psychiatric disabilities who require reasonable alternate accommodations in teaching style or evaluation methods should consult with the Counselling & Development Centre **AND** the Course Director *early in the term* to make appropriate arrangements.

## **REQUIRED MATERIALS: Textbook, Workbook, Website, Star Finder, Charts, Lab Manual**

\* Textbook: *The Essential Cosmic Perspective, 6<sup>th</sup> edition*, by Bennett et al. 2011.

\* Workbook: *Astronomy In-Class Activities*, Custom workbook for York University, 2009.

\* MasteringAstronomy.com access: weekly exercises will be assigned on this website.

**The above three items come bundled together with a star finder (also called a *planisphere*).**

You can buy a bundle with only an online, interactive eText version of the textbook (about \$103) or a bundle including eText and hardcopy versions (\$158.95) in the York University bookstore.

\* Two constellation charts: available from the bookstore.

\* Lab manual: downloadable for free from the course website. **REMEMBER TO PRINT OUT THE LAB AND ANSWER SHEET** before you show up for each laboratory period!

A scientific calculator and a ruler will also be needed for some lab sessions.

**To succeed in this class: read the textbook before class, take notes and use the workbook in class, and do the on-line work after class – all good practice for the exams. And turn in as much as you can of every lab and term project.**

### **Workload and course format:**

Your mark in the course consists of these components:

- 13% Weekly MasteringAstronomy.com quizzes and occasional marked in-class activities
- 17% Laboratory exercises (6 regular labs 2% each; 2 computer labs 2.5% each)
- 10% Fall Term project (DUE last class of fall term)
- 10% Winter Term project (DUE last class of winter term)
- 25% Fall term exam (December)
- 25% Winter term exam (April)
- 100% Total

**In-class activities**: Most lectures will feature an in-class activity, such as a workbook exercise or clicker quiz, so class attendance is absolutely necessary. The lectures and in-class activities greatly enhance the textbook, and participation will help you get a good mark. *Also, many exam questions will be closely based on in-class work.* In-class activities will be drawn mostly from the workbook, so **the In-Class Activities workbook should be brought to every class.** In class, after an introductory lecture, students will work on the activity in small groups while the professor answers questions and guides the activity. Finished in-class activities are good study guides (activities will very occasionally be collected and marked as either completed or not).

**Reading assignments and on-line quizzes**: Reading assignments will be announced in class and posted on the course website. A masteringastronomy.com quiz covering the reading assignments will be due roughly once a week. Your understanding of the activities (and of future exam questions) will be greatly improved by doing the readings before class and taking the quizzes every week. There will be no makeups for online quizzes.

**Term Projects:** these require some independent research and involve some outside work under the stars. The projects will be due near the end of each term. Because so much time is allowed to complete them (approximately 3 months), **the submission deadlines will be adhered to strictly.** However, **bonus points** will be given to projects submitted early: 2% for every week early, though the maximum grade will still be 100%. On-campus evening observing sessions will be held Wednesday nights during the fall term on the roof of the William Small Centre (Arboretum Parking Garage) to assist in the completion of the Fall term project. You are encouraged to take advantage of these sessions and to do as much as you can on the term projects, even if you can't finish them.

**The Laboratory Periods:** As part of this class, each student will attend a two-hour laboratory period three times each term, for a total of six laboratory periods. Check the next page to find the days that you **MUST** attend the labs to do the laboratory exercises. **Make sure you sign the attendance sheet during the laboratory period that you attend. LAB WORK MUST BE DONE DURING THE LAB PERIOD AND ANSWER SHEETS MUST BE HANDED IN BEFORE THE END OF THE LAB PERIOD** (except computer labs, which are done on your own time).

The laboratory exercises are designed to supplement the lectures and illustrate important concepts in astronomy. Successful completion of the laboratory exercises will greatly assist the general understanding of the course material, and also will help boost your grade. During the lab period, a teaching assistant (TA) will be available to answer questions and offer assistance with the exercises. Remember, you can achieve the most from these exercises by asking questions. TAs cannot read minds, so if you have questions or difficulties, make them known! Furthermore, Math-Aid-in-NATS and Labs-in-NATS help sessions are available to anyone requiring advance assistance with the lab assignments. Attendance will be taken during the laboratory periods. *Submission of all lab assignments will significantly enhance your mark.*

If you miss a lab or know you will not be able to attend a lab, contact the TA in charge of another lab section and ask if you can attend it. If the section is full, the TA has full authority to allow **ONLY** those enrolled in that section to attend it. **You are not guaranteed a makeup opportunity for a missed lab.** In fact, exemptions for missed labs can be granted only with proof of extraordinary circumstances, such as a signed and dated doctor's note. **Without such proof, NO LATE LAB ASSIGNMENTS WILL BE ACCEPTED.**

**Exams:** The University will set the examination schedules. It is your responsibility to be available to take the exams as scheduled. The exam material will be set by the lecturer based upon work covered in class or in the textbook, including material reinforced by the labs. Exams missed (not skipped!) due to forces beyond your control can *only* be made up by petitioning for deferred standing within one week of the exam date or project due date.

**Plagiarism:** Any material submitted by a student for this course must be original to that student unless otherwise acknowledged. Collaboration with colleagues on problems is a part of this class and of science, but to claim credit for work performed by others is both unethical and unacceptable. **Plagiarism and cheating will not be tolerated. Penalties for such offences range from a failing grade on the submitted material to expulsion from the University.**

*Although every effort has been made to insure the accuracy of this syllabus and the lab manual, errors may still exist. If you notice an error, please let us know. Also, additions or deletions to this material may occur. The professor or your TA will make you aware of any such changes prior to the start of each lab.*

## NATS 1740 6.0 A Laboratory Meeting Timetable: Fall 2011 – Winter 2012 (Term Y)

All lab sections meet in Central Square 046 (CS 046), located far into the building's basement.

In the left-hand column, find the section number of the lab you enrolled in. The six dates in that row are the six dates on which your astronomy lab section will meet. Put them on your calendar!

	Meeting #1	Meeting #2	Meeting #3	Meeting #4	Meeting #5	Meeting #6
Section 01 (B58A02; Thu. 8:30)	15-Sep	29-Sep	27-Oct	12-Jan	2-Feb	15-Mar
Section 02 (B58A03; Thu. 8:30)	22-Sep	6-Oct	3-Nov	19-Jan	9-Feb	22-Mar
Section 03 (B58A04; Thu. 10:30)	15-Sep	29-Sep	27-Oct	12-Jan	2-Feb	15-Mar
Section 04 (B58A05; Thu. 10:30)	22-Sep	6-Oct	3-Nov	19-Jan	9-Feb	22-Mar
Section 05 (B58A06; Thu. 12:30)	15-Sep	29-Sep	27-Oct	12-Jan	2-Feb	15-Mar
Section 06 (B58A07; Thu. 12:30)	22-Sep	6-Oct	3-Nov	19-Jan	9-Feb	22-Mar
Section 07 (B58A09; Thu. 14:30)	15-Sep	29-Sep	27-Oct	12-Jan	2-Feb	15-Mar
Section 08 (B58A09; Thu. 14:30)	22-Sep	6-Oct	3-Nov	19-Jan	9-Feb	22-Mar
Section 09 (B58A10; Thu. 16:30)	15-Sep	29-Sep	27-Oct	12-Jan	2-Feb	15-Mar
Section 10 (B58A11; Thu. 16:30)	22-Sep	6-Oct	3-Nov	19-Jan	9-Feb	22-Mar
Section 11 (B58A12; Fri. 8:30)	16-Sep	30-Sep	28-Oct	13-Jan	3-Feb	16-Mar
Section 12 (B58A13; Fri. 8:30)	23-Sep	7-Oct	4-Nov	20-Jan	10-Feb	23-Mar
Section 13 (B58A14; Fri. 11:30)	16-Sep	30-Sep	28-Oct	13-Jan	3-Feb	16-Mar
Section 14 (B58A15; Fri. 11:30)	23-Sep	7-Oct	4-Nov	20-Jan	10-Feb	23-Mar
Section 15 (B58A16; Fri. 13:30)	16-Sep	30-Sep	28-Oct	13-Jan	3-Feb	16-Mar
Section 16 (B58A17; Fri. 13:30)	23-Sep	7-Oct	4-Nov	20-Jan	10-Feb	23-Mar
Section 17 (B58A18; Fri. 15:30)	16-Sep	30-Sep	28-Oct	13-Jan	3-Feb	16-Mar
Section 18 (B58A19; Fri. 15:30)	23-Sep	7-Oct	4-Nov	20-Jan	10-Feb	23-Mar

### PLEASE NOTE THESE IMPORTANT DUE DATES:

The Fall Computer Lab is due in class Monday November 21, 2011 at the **start** of the lecture.

Term Assignment 1 (Fall) is due in class Monday December 5, 2011 at the **start** of the lecture.

The Winter Computer Lab is due in class Monday March 12, 2012 at the **start** of the lecture.

Term Assignment 2 (Winter) is due in class Monday April 2, 2012 at the **start** of the lecture.

Assignments turned in after class on the due date will suffer a 10% penalty. Assignments turned in the day after the due date will suffer a 1/3 penalty (33.3%). Assignments turned in two days after the due date will suffer a 2/3 penalty (66.6%). Assignments will not be accepted three or more days after the due date.

**If you have a valid medical excuse for turning in an assignment late, you must obtain a signed and dated doctor's note stating that you were ill on the due date as proof.**