ASTRONOMY 102: INTRODUCTION TO STARS AND GALAXIES SECOND TERM 2007/08

Monday, Wednesday, Friday, 12:00 pm – 12:50 pm, in Hennings 201

Douglas Scott, 300A Hennings Building, 822-2802

Office Hours – Friday 2:00–3:00, dscott@astro.ubc.ca

This course will provide an overview of modern astronomy: the study of the distant sky. It will concentrate on objects *beyond* our Solar System, and is complementary to ASTR 101. We will be discussing stars, galaxies, the stuff in between, and the Universe as a whole. The emphasis will be on understanding the general principles, and on the basic idea of astronomy as a physical science. We will be using basic algebra, but no calculus.

The TAs for this course are Ramandeep Gill (`rsgill@phas.ubc.ca`) and Daryl Mason (`masond77@gmail.com`). All TA office hours will be in Hennings 312 (hours announced later) – use them! The most efficient way to get your queries about the course material resolved is to talk with either the instructor or a TA personally. And note that the majority of general questions about the course are answered on this page!

The textbook is: **'Stars, Galaxies & Cosmology: The Cosmic Perspective' (4th edition) by Bennett, Donahue, Schneider & Voit**. Earlier editions may also be used, but page numbers will be different. [Note that 'The Solar System: The Cosmic Perspective' is the book for ASTR 101, while 'The Cosmic Perspective (full version)' contains the material for both courses.] Other textbooks may be useful for additional background information, as well as popular magazines which regularly carry articles on recent astronomical discoveries: *Sky & Telescope, Astronomy, New Scientist, Discover, Scientific American, Mercury*. These are all available in campus libraries. The textbook has a web-site with useful self-grading quizzes, animations etc. – each new book has an account which is valid for a year (so if you buy a used book from the previous term you'll need to get the password, and if you buy an older used book there's a way of paying a little to reactivate the account).

Course Evaluation: Labs (4) 30%; Assignments (4) 20%; Mid-term test 10%; Final exam 40%. *Late assignments will be penalized, and very late assignments will not be accepted.* There is one mid-term, date given below, and *there will be no make-up exams if you miss it.* The final will cover the entire course. All of the material in the lectures, Labs and the textbook (unless explicitly stated otherwise) should be considered examinable. *Note also that although you are encouraged to study with other students, the work that you hand in must be your own* – please ask for clarification if you do not understand this distinction.

Labs will be held in Hennings 312, the 'Astronomy Resource Centre', starting in the second week of semester. You will need to buy the Lab Manual, which costs $8, available in class during the first week, or afterwards directly from the instructor. Please have the correct change! You are also required to purchase a yellow-covered University Physics Laboratory Notebook (from the Bookstore). All Lab reports need to be submitted in this notebook (along with the rough work done during the lab itself), through the appropriate slot outside Hennings 312, by 5 p.m. on your normal Lab day. Lab books will be returned to you at the following Lab. Note that regular attendance at Labs is expected as part of this course.

ASTR 102 SCHEDULE

The lectures will closely follow the order in the textbook. Numbers below correspond to book chapters.

1. OUR PLACE IN THE UNIVERSE (plus Sections 3.4 and 3.5)	Jan 7, 9, 11
4. MAKING SENSE OF THE UNIVERSE: MOTION, ENERGY & GRAVITY	Jan 14, 16, 18
5. LIGHT & MATTER: READING MESSAGES FROM THE COSMOS	Jan 21, 23
6. TELESCOPES: PORTALS OF DISCOVERY	Jan 25
14. OUR STAR	Jan 28, 30
15. SURVEYING THE STARS	Feb 1, 4
16. STAR BIRTH	Feb 6
17. STAR STUFF	Feb 8
18. THE BIZARRE STELLAR GRAVEYARD	Feb 11, 13, 15
MID-TERM BREAK	Feb 18–22
19. OUR GALAXY	Feb 25, 27, 29
MID-TERM EXAM (in class)	Mar 3
20. GALAXIES AND THE FOUNDATION OF MODERN COSMOLOGY	Mar 5, 7, 10
21. GALAXY EVOLUTION	Mar 12, 14, 17
22. DARK MATTER, DARK ENERGY & THE FATE OF THE UNIVERSE	Mar 19, 26, 28
EASTER HOLIDAYS	Mar 21, 24
23. THE BEGINNING OF TIME	Mar 31, Apr 2, 4, 7, 9
24. LIFE IN THE UNIVERSE	Apr 11
FINAL EXAM	In period Apr 15–29

Material from sections S2, S3 and S4 will also be interleaved with the relevant chapters.