

ORIGINS 3B03 – 2011 – Course Outline

Instructors:

- Alan Chen, Department of Physics and Astronomy, chenal@mcmaster.ca, ABB-260A
- Ethan Vishniac, Department of Physics and Astronomy, ethan@mcmaster.ca, ABB-349

Recommended Text:

- Stellar Evolution and Nucleosynthesis, S. G. Ryan and A. J. Norton, Cambridge University Press, 2010

Course Objective:

- To survey our understanding of the origins of the chemical elements in the cosmos, and its connections to Big Bang cosmology and the evolution of stars. Emphasis will be placed on the physical and astrophysical concepts underlying this understanding.

Curriculum and Lecture Schedule:

Week beginning	Topic(s)	Instructor
January 2	Big Bang Nucleosynthesis	Chen
January 9	Main Sequence Stars (Ch 1)	Chen
January 16	Gravitational Contraction (Ch 2)	Chen
January 23	Nuclear Fusion (Ch 3)	Chen
January 30	Main Sequence to Red Giants (Ch 4)	Chen
February 6	Helium-Burning Stars (Ch 5)	Vishniac
February 13	Late Stages of Stellar Evolution (Ch 6)	Vishniac
February 20	NO CLASSES	--
February 27	MIDTERM Supernovae, Neutron Stars, Black Holes (Ch 7)	Vishniac
March 5	Black Holes; Star Formation (Ch 7 (cont'd); Ch 8)	Vishniac
March 12	Star Formation (Ch 8)	Vishniac
March 19	Presentations	Chen + Vishniac
March 26	Presentations	Chen + Vishniac
April 2	Make-up, if needed	TBD

Course Website:

- <http://www.physics.mcmaster.ca/~chenal/3B03/>

Proposed Marking Scheme:

- 20% Assignments
- 20% Midterm
- 20% Presentation
- 40% Final Exam

Statement on Academic Integrity

McMaster Senate requires the following statement to be included in every course outline. Academic dishonesty consists of misrepresentation by deception or by other fraudulent means and can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: “Grade of F assigned for academic dishonesty”), and/or suspension or expulsion from the university. It is your responsibility to understand what constitutes academic dishonesty. For information on the various kinds of academic dishonesty, please refer to the Academic Integrity Policy, specifically Appendix 3, located at

<http://www.mcmaster.ca/academicintegrity/>

The following illustrates only four forms of academic dishonesty:

- Plagiarism, e.g. the submission of work that is not one’s own or for which other credit has been obtained.
- Improper collaboration in group work.
- Copying or using unauthorized aids in tests and examinations.
- Not giving appropriate references in reports or presentations to previous work by other people.

Further Notes:

The instructors and university reserve the right to modify elements of the course (including the Marking Scheme) during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of students to check their McMaster email and course websites weekly during the term and to note any changes.

The instructors will make announcements in class and by using the course e-mail distribution list which relies upon your McMaster e-mail account name.