ALLIANCE UNIVERSITY COLLEGE
NAZARENE UNIVERSITY COLLEGE

SC120 Introduction to Astronomy (3)
Winter 2007

Class Schedules:

Wednesdays, 6:30 – 9:30 pm, Jan 1 - Apr 30, 2007
Classroom 631

Instructor Information

Name: Mark Z. Tan
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Tel: (403) 220 - 4416
Office: 502
Office hours: Available by appointment

Course Description:

This course covers all aspects of modern astronomy. Backyard astronomy, space-based astronomy, the solar system, stars, galaxies and the universe on the largest scale will be discussed.

There is no formal laboratory component. However, an important aspect of the course will be computerized observational exercises. These exercises require that students use the desktop planetarium program (StarryNight) which comes with the textbook. The particular activities to be done and the due date, will be announced in class.

The course material will stress conceptual understanding with minimal mathematical derivation. However, necessary mathematical and physical concepts will be introduced to learn the course. Students can gain an appreciation for this by following straight forward examples which are carefully described in the class by instructor and in the Astronomer's Toolbox@ sections of the textbook. Assignments, a mid-term exam, and the final exam will include necessary mathematical questions.

Multimedia (internet, Power Point, slides) instruction will be utilized in the class**.**

Tentative Lecture Schedule		**Textbook Chapter**
Jan 10	Introduction to class. The Night Sky Units of distance and angular size, seasons, time, lunar phases, eclipses. Installation of software	1
Jan 17	Planetary Motions Historical overview, orbital motion, Kepler's laws, Newton's Laws	2

Jan 24	The Nature of Light Electromagnetic spectrum, black-body radiation, atomic structure, Kirchhoff's laws	3
Jan 31	Telescopes Modern methods in astronomy, reflectors and refractors, CCDs, the universe at other wavelengths.	4
Feb 7	The Solar System (Earth and Moon, atmosphere, tectonics, gravitation and tide)	5
Feb 14	The Solar System (other planets, formation, tectonics)	6 to 8
Feb 21	Mid-semester break (no class)	
Feb 28	The Sun and Introduction to the Stars The energy and structure of the Sun, its magnetic cycle and observable features, nuclear reaction within the Sun. Mid Term Exam (in class).	9 Mid Term Exam
Mar 7	The Nature and Lives of Stars The interstellar medium and star formation. The sizes, luminosities and masses of stars. The HR diagram.	10,11
Mar 14	The Deaths of Stars Life after the main sequence and the formation of compact objects. Black Holes.	12,13
Mar 21	The Milky Way Galaxy The size, structure and center of our galaxy. Evidence for dark matter	14
Mar 28	Normal and Peculiar Galaxies Spiral and elliptical galaxies. Quasars, radio galaxies and their central engines. Clusters of galaxies	15,16
Apr 4	Cosmology The expansion and fate of the Universe	17
Apr 11	The Drake Equation and SETI Recent discoveries of extra-solar planets. Theories of the formation of our solar system Review of class and chapters.	18
Apr 18	TBA	TBA

Textbooks

Discovering the Universe -7th Edition by N.F Comins & W.J. Kaufmann III, published by Freeman & Co.

Attendance:

See Academic Calendar.

Course Requirements

- Assignments, Reading quizzes, computer activity (*StarryNight*) – 45%

These exercises (assignments, quizzes and software activities) contain important concept and necessary mathematical knowledge to help students learn the course. All exercises should be completed by the deadline specified on the

cover page of each exercise. The exercises will be corrected and returned to students. The scores will be recorded as a part of the final assessment. The weight is 45%.

- Midterm Exam (in Class) – 25%

An in-class midterm exam will be held in the middle of the semester. The exam will be corrected and returned to students. The score will be recorded as a part of the final assessment. The weight is 25%.

- Final Exam (in class) – 30%

An in-class final exam will be held at the end of the semester. The score will be recorded as a part of the final assessment. The weight is 30%.

Examinations:
This course will have a final examination.

Final examinations are held during a scheduled time period at the end of the semester for regular semester classes and are scheduled by the Registrar. Graded final examinations will be available for supervised review at the request of the student. Please contact the Academic Dean.

Grading: The available letters for course grades are as follows:

Letter Grade	Description
A+	
A	Excellent
A-	
B+	
B	Good
B-	
C+	
C	Satisfactory
C-	
D+	
D	Minimal Pass
F	Failure

If you will be using percentages, please indicate a scale which indicates how percentages in your class will be translated to letter grades. These equivalencies are at the discretion of the instructor, but MUST be stated in the syllabus.

Important Notes: Include here such information as is relevant to the course but not listed above.

It is the responsibility of all students to become familiar with and adhere to academic policies of as are stated in the Student Handbook and Academic Calendar.

Personal information, that is information about an individual that may be used to identify that individual, may be collected as a requirement as part of taking this class. Any information collected will only be used and disclosed for the purpose

for which the collection was intended. For further information contact the Privacy Compliance Officer at privacy@auc-nuc.ca.

The last day to enter a course without permission and /or voluntary withdrawal from a course without financial penalty see Academic Calendar

The last day to voluntarily withdraw from a course or change to audit without academic penalty see Academic Calendar

Although extensions to coursework in the semester are at the discretion of the instructor, students may not turn in coursework for evaluation after the last day of the scheduled final examination period unless they have received permission for a "Course Extension." Alternative times for final examinations cannot be scheduled without prior approval. Requests for course extensions or alternative examination time must be submitted to the Registrar's Office by the appropriate deadline. Course extensions are only granted for serious issues that arise "due to circumstances beyond the student's control."

We are committed to fostering personal integrity and will not overlook breaches of integrity such as plagiarism and cheating. Plagiarism and cheating can result in a failing grade for an assignment, for the course, or immediate dismissal from the university college. Students are expected to be familiar with the policies in the current Academic Calendar and the Student Handbook that deal with plagiarism, cheating, and the penalties and procedures for dealing with these matters. All cases of academic dishonesty are reported to the Academic Dean.

Students are advised to retain this syllabus for their records.

Other Syllabus Features: Any added features in the syllabus are optional. You may or may not wish to include elements such as a bibliography, reading list, or reporting form.