Douglas College

EFFECTIVE: SEPTEMBER 2004
CURRICULUM GUIDELINES

A. Division: Instructional

Effective Date: September 2004

B. Department / Program Area: Science and Technology

Revision [ ] New Course [X]

If Revision, Section(s) Revised:
Date of Previous Revision:
Date of Current Revision:

C: ASTR 1105 **D**: Introduction to Astronomy **E:** 4

Subject & Course No.	Descriptive Title	Semester Credits

F: Calendar Description:
This course is designed primarily for students who do not intend to major in science. Topics covered are some astronomy history; celestial sphere; stars and constellations in the night sky; movement of Earth, Moon and Sun; properties of light; telescopes; solar system; life and death of stars; Milky Way and galaxies; cosmology. The laboratory component will involve outdoor observations and indoor exercises and computer simulations.

G: Allocation of Contact Hours to Type of Instruction / Learning Settings

Primary Methods of Instructional Delivery and/or Learning Settings:

Lecture / Laboratory

Number of Contact Hours: (per week / semester for each descriptor)

4 / 2

Number of Weeks per Semester:
15

H: Course Prerequisites:
BC Principles of Math 11 (C or higher) or MATH 101

I: Course Corequisites:
None

J: Course for which this Course is a Prerequisite
None

K: Maximum Class Size:
36

L: PLEASE INDICATE:

[ ] Non-Credit

[ ] College Credit Non-Transfer

[X] College Credit Transfer: Requested X Granted

SEE BC TRANSFER GUIDE FOR TRANSFER DETAILS (www.bccat.bc.ca)

M: Course Objectives / Learning Outcomes

Upon completion of the course the student will be able to:

1. identify major contributors and their contributions to the development of astronomy
2. identify commonly used coordinate systems for viewing the sky
3. identify major stars and constellations
4. explain seasons, eclipses, precession, phases of the Moon, tides
5. identify and explain features of light: wave nature, speed, spectrum, reflection, refraction, Doppler effect
6. explain operation of and distinction between optical telescopes
7. identify the various types of bodies in the solar system
8. explain the evolution of the solar system
9. identify features on the Moon
10. compare features of the planets
11. indicate the peculiarities of asteroids, meteoroids, comets
12. identify the prominent features of the Sun
13. explain stellar parallax
14. distinguish between apparent magnitude and absolute magnitude of stars
15. explain stars luminosity and the Hertzsprung-Russell diagram
16. explain the current view of birth, life and death of stars
17. identify types and structures of galaxies and clusters of galaxies
18. define quasar, pulsar, black hole
19. explain the current view of the big bang and the expansion of the Universe

N: Course Content

1.Classroom:

- Discovering the night sky
- Some astronomy history
- Properties of light
- Telescopes
- Earth-Moon-Sun system
- Overall solar system
- Nature of stars
- Galaxies
- Cosmology.

2. Laboratory

- Sky charts
- Night sky observations
- Image formation via mirrors and lenses
- Light spectra/wavelength measurements
- Sunspots
- Photometry
- Planetarium/observatory field trip

O: Methods of Instruction

This course will be presented using lectures, assigned readings and laboratory exercises, which will include outside observations. A variety of audio-visual materials, computer simulations, and internet searches will be used where appropriate.

P: Textbooks and Materials to be Purchased by Students

N.F. Comins, **Discovering the Essential Universe**, 2nd Edition, Freeman, 2004

Q: Means of Assessment

The final grade for the course jwill be based upon the following components:

a) final examination – minimum of 30%/maximum of 40%
b) two tests administered during the semester – minimum of 15% each/maximum of 25% each
c) submitted laboratory reports – 20%
d) quizzes, assignments, projects – maximum of 20%

R: Prior Learning Assessment and Recognition: specify whether course is open for PLAR

Not open for PLAR

Course Designer(s)	Education Council / Curriculum Committee Representative
Dean / Director	Registrar