PHYSICS DEPARTMENT
COURSE OUTLINE

ASTR 102 - INTRODUCTORY ASTRONOMY II.

An introduction to Stars, Stellar Systems (star clusters, galaxies, clusters of galaxies) and the Universe as a Whole. Topics discussed include our Sun (the nearest star), the Properties of Stars, Star Births and Deaths, the Milky Way, Galaxies, the Expanding Universe and Cosmology.

OFFERED:	Winter
CREDIT:	4
IN-CLASS WORKLOAD:	4 lecture, 2 lab (semester)
PRE-/CO-REQUISITES:	Math11
NOTE:	Astr101 is NOT a prerequisite

REQUIRED MATERIALS:
Astronomy 102 course material developed at Camosun College
Astronomy 102 lab manual
Scientific calculator (any calculator is acceptable with the exception of personal computers)

DEPARTMENT POLICIES REGARDING TESTING:

1. Students must write quizzes, tests, midterm tests, etc., on the date and time assigned by the instructor. Instructors are not required to provide make-up tests. At their discretion, instructors may waive a test or provide a make-up test only in the event of documented illness or other extenuating circumstances.

2. Midterm tests may be dropped if: (a) a first-class mark is obtained on the comprehensive final exam, and (b) all term work has been completed and is judged to be satisfactory. In this case, the final grade for the course may be based on a combination of the final exam and the lab mark.

DEPARTMENT POLICIES REGARDING LABS:

1. All assigned laboratory exercises and reports must be completed with an overall grade of 60% in order to obtain credit for this course. A lab may be waived or made up at a later time only in the case of documented illness or other extenuating circumstances.

2. A student who is repeating an Astronomy course does not have to complete the laboratory exercises a second time if an average lab grade of 70% or better was obtained.

STUDY TIME

It is recommended that between 5 and 10 hours per week (or more for students with a weak background) be spent studying for this course outside of class time.

GRADING

The standard mark distribution for this course is as follows:

Final Exam	30%
Midterms (2)	30%
Quizzes	10%
Lab Reports, Homework	30%
	100%

This distribution may be amended by the instructor (see your Instructor's Information sheet).

GRADE SCALE

Final letter grades are normally assigned as follows (subject to above conditions):

Percentage	Letter Grade
95 to 100	A+
90 to 94	A
85 to 89	A-
80 to 84	B+
75 to 79	B
70 to 74	B-
65 to 69	C+
60 to 64	C
50 to 59	D
below 50	F

OUTLINE:

1. **Our Sun, the Nearest Star**

    1.1 The Sun's Properties
    1.2 Energy from the Atomic Nucleus
    1.3 The Sun's Interior
    1.4 The Sun's Atmosphere
    1.5 Effects of the Sun on the Earth

2. **Radiation from Space**

    2.1 The Nature of Light
    2.2 The Electromagnetic Spectrum
    2.3 Radiation and the Structure of the Atom
    2.4 Spectral Lines
    2.5 Telescopes and Detectors

3. **Properties of Stars**

    3.1 The Nature of Stars
    3.2 Distances to Stars
    3.3 Observed Properties of Stars
    3.4 Fundamental Properties of Stars
    3.5 Classifying Stars
    3.6 The Evolution of Stars

4. **Star Births and Deaths**

    4.1 Supernovae
    4.2 The Main Sequence Stage
    4.3 Evolved Stars
    4.4 The Death of Stars

5. **The Milky Way**

    5.1 Distribution of Stars in Space
    5.2 The Space between the Stars
    5.3 Groups and Clusters of Stars
    5.4 Layout of the Milky Way

6. **Galaxies**

    6.1 Hubble and the Nature of Galaxies
    6.2 Distances to Galaxies
    6.3 Properties of Galaxies

7. **Cosmology**

7.1 Early Cosmologies
7.2 Relativity and Curved Space
7.3 The Big Bang Model
7.4 Measuring Cosmological Parameters (dark matter, dark energy)
7.5 Evolution of the Universe