

**WEST VIRGINIA UNIVERSITY AT PARKERSBURG  
UNIFORM COURSE SYLLABUS**

**Name of Course:** Introduction to Astronomy Lab

**Course No.:** ASTR 106L

**Department:** Astronomy

**Division:** Natural Science and Mathematics

**I. Course Objectives:**

- To increase the ability of the student to think critically.
- To learn and practice the scientific method of investigation of a problem or idea.
- To appreciate and practice experimentation and observation and their importance in scientific investigations.
- To learn how to collect accurate scientific data and the importance of accurate data collecting techniques.
- To learn and practice methodical study and work habits.
- To learn the basic metric system (System International) of units of measurement.
- To study the origin, evolution, composition, and active processes of the Universe.
- To study and practice techniques used to investigate the Universe.
- To experience a sense of discovery about the workings of the Universe.
- To learn and appreciate the difference between the real science of astronomy and the false science (really non-science) of astrology.

**II. Topics to be studied:**

**How will course objectives be met?**

Course objectives will be met by laboratory exercises designed to stress the above objectives. Topics covered will include the following: earth-sun relationships, telescopes, spectroscopy, constellations and the celestial coordinate system, telescopic observation of the moon, telescopic observation of the terrestrial and jovian planets, stellar evolution and HR diagrams, expansion of the Universe, gravity and acceleration due to gravity, Kepler's Laws of planetary motion, and other topics at times that will reinforce astronomical topics covered in the lecture portion of the course.

**III. Special Projects to be included in Course.**

**Research papers**

**Reports**

**Surveys**

**Annotated bibliographies**

**Other**

Possible field trips to planetariums and other astronomical facilities. Certain types of surveys and reports may result from such field trips and laboratory time

may be used to complete such. For example, determination of the radio wave intensity of a portion of the sky with accompanying maps and reports may be appropriate form some trips. Summaries of selected audio-visual material may substitute for some of the quizzes.

**IV. Methods of Student Evaluation.**

**Tests (How many? How often? What type?)**

**Quizzes**

**Oral Presentations**

**Written Papers**

**Laboratory Activities**

**Clinical Experience**

There will be two major laboratory exams in addition to weekly graded laboratory exercises. The laboratory exams will consist of written discussion questions and “hands on” practical application questions. The laboratory exams will account for 48% of the laboratory grade and the graded exercises will count 52% of the laboratory grade. The laboratory grade will account for a total of 25% of the grade for the course Astronomy 106.

**V. Assessment of Outcomes.**

**What measurements will be used to demonstrate that outcomes have been reached? (Refers to class as a whole, not individual students).**

The testing and evaluation procedure designed for this course (as described in IV above) will determine whether the students (as a whole) are meeting the class objectives. It is expected that the class as a whole will average 75% (middle C range) on the testing and evaluation portion of the course.

**VI. Other Information.**

**What additional information will help to clarify the course?**

This course will also function as a special service course to the community. Many people within the community have an interest in astronomy and would personally benefit from a course of this nature.