

ASTR 382 INSTRUMENTS AND TECHNIQUES IN PLANETARIUM OPERATIONS

Course Description

This course covers the effective use of the planetarium star projector, its maintenance and calibration. Other topics include the production and projection of digital images and video to produce instructional planetarium program content.

Prerequisite: permission of the instructor. (3 credit hours)

Course Objectives

The class members will gain the basic knowledge to plan, produce, and execute programs, as well as maintain and make effective use of a planetarium facility.

Course Rationale

There are hundreds of planetariums in the United States. There are approximately 50 in the state of Indiana. Planetariums have tremendous educational potential. However, courses and programs for formal training in planetarium operations are rare. This course provides this training for teachers using school planetariums and staff members of public museum planetariums.

Course Content, Format, and Bibliography

Content

The planetarium star projector

- History of the modern planetarium

- Limitations of the planetarium sky simulation

- Star projector operation, maintenance and calibration

The planetarium theater

- Components and systems

- Design, maintenance and control of image projectors

Auxiliary projection systems

- Video equipment and control

- Special effects projectors: designs and uses

Audio and audio systems

Selection of music for planetarium programs

Audio equipment, recording, mixing and editing

Program production

Designing planetarium programs

Program script writing

The copyright law

Commercial planetarium program packages

Program automation

Teaching and administration issues

Administration and Curriculum

Teaching basic astronomy concepts with a planetarium

The professional community

Grant writing

Internet resources

Format

After several hours of lecture and demonstrations the students are given the assignment to produce a 5-10 minute planetarium program. This program must contain an audio sound track that contains narration with music, slides that have been made and masked by the student, and a video segment. In addition, the program must be computer automated.

This course is taught as a dual undergraduate/graduate course. Students will be required to complete activities appropriate for the level of the course in which they are enrolled. Student performance on homework, exams and/or labs will be evaluated using different standards for undergraduate and graduate students.

Bibliography

The Planetarium and Atmospherum by O. Richard Norton, Naturegraph Publishers, 1968.