



BROWARD COLLEGE COURSE OUTLINE

LAST REVIEW: 2008-2009

NEXT REVIEW: 2013-2014

STATUS: A

COURSE TITLE: Planetarium Education

COMMON COURSE NUMBER: AST 2080

CREDIT HOURS: 3

CONTACT HOUR BREAKDOWN

(per 16 week term)

CLOCK HOURS:

(Voc. Course ONLY)

Lecture: 48 Lab:

Clinic: Other:

PREREQUISITE(S): Instructor's Approval

COREQUISITE(S): None

PRE/COREQUISITE(S):

COURSE DESCRIPTION *(750 characters, maximum):*

Course for teachers and students of Education. Study of the use of the Planetarium in education. Acquaints students with basic sky knowledge. Familiarizes students with varied planetarium equipment and its operation. Various audio-visual devices will be employed. Students will design and write their own educational materials pertaining to audio-visual concepts in Planetarium Education.

General Education Requirements – Associate of Arts Degree (AA), meets Area(s):

Area

General Education Requirements – Associate in Science Degree (AS), meets Area(s):

Area

UNIT TITLES

- 1. History of the Planetarium**
- 2. Current Planetarium Technologies and Skills**
- 3. Planetarium Production**
- 4. Planetarium Presentation**
- 5. Planetarium Education**
- 6. Planetarium Operations**

EVALUATION:

Please provide a brief description (250 characters maximum) that details how students will be evaluated on the course outcomes. Upon successful completion of this course, the students should be able to recognize and describe different types of planetarium machines, discuss the origin and history of the planetarium, demonstrate understanding of basic sky motions, describe planetarium show production, demonstrate how to use a planetarium, and explain ways to utilize the planetarium in support of formal classroom education.

**** Complete the following only if course is seeking general education status ****

GENERAL EDUCATION Competencies and Skills*:

Please highlight in green font all Competencies/Skills from the list below that apply to this course. In the box to the right of the Competency/Skill, enter all specific learning outcome numbers (i.e. 1.1, 2.7, 5.12) that apply.

1. Read with critical comprehension	
2. Speak and listen effectively	
3. Write clearly and coherently	
4. Think creatively, logically, critically, and reflectively (analyze, synthesize, apply, and evaluate)	
5. Demonstrate and apply literacy in its various forms: (highlight in green ALL that apply) (1. technological, 2. informational, 3. mathematical, 4. scientific, 5. cultural, 6. historical, 7. aesthetic and/or 8. environmental)	
6. Apply problem solving techniques to real-world experiences	
7. Apply methods of scientific inquiry	
8. Demonstrate an understanding of the physical and biological environment and how it is impacted by human beings	
9. Demonstrate an understanding of and appreciation for human diversities and commonalities	
10. Collaborate with others to achieve common goals.	
11. Research, synthesize and produce original work	
12. Practice ethical behavior	
13. Demonstrate self-direction and self motivation	
14. Assume responsibility for and understand the impact of personal behaviors on self and society	
15. Contribute to the welfare of the community	

** General Education Competencies and Skills endorsed by '05-'06 General Education Task Force*

UNITS

Unit 1 History of the Planetarium

General Outcome:

0.0 The student shall: be able to describe the origin, development, and history of the planetarium, and how it relates to astronomy.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 1.1 Recognize simple sky motions and their causes.
- 1.2 Recount the history of sky mapping and sky modeling.
- 1.3 Describe the development of the planetarium instrument as a means of modeling the sky.
- 1.4 Describe the mechanical creation and development of the planetarium instrument.
- 1.5 Recount the growth, changes, and differentiation of the planetarium machine since its invention

Unit 2 Current Planetarium Technologies and Skills

General Outcome:

1.0 The student shall: be able to describe and differentiate the various types of planetarium models and technologies.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 2.1 Describe the major types of planetarium projection, including Opto-mechanical, Pinhole, and various Fulldome Video techniques.
- 2.2 Explain the various types of projections used in planetaria, including normal, all-sky, and panorama.
- 2.3 Describe the benefits and limitations of projection surfaces, including flat screen, horizontal dome and tilted dome.
- 2.4 Describe simple principles of electricity as used in a planetarium.
- 2.5 Describe basic maintenance skills needed in a planetarium environment.
- 2.6 Describe the use of scientific problem-solving as used in trouble-shooting in a planetarium.
- 2.7 Identify a desktop computer-based planetarium software program.

Common Course Number: AST 2080

Unit 3 Planetarium Production**General Outcome:**

The student shall: be able to describe the major decisions and steps involved in creating product for planetaria.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 3.1 Describe the components and features of a multi-media presentation.
- 3.2 Describe the decisions involved in identifying a topic, creating an outline and generating a script for a planetarium presentation.
- 3.3 Describe mechanisms for creating and/or acquiring visuals for a planetarium presentation.
- 3.4 Describe mechanisms for creating and/or acquiring audio for a planetarium presentation.

Unit 4 Planetarium Presentation**General Outcome:**

4.0 The student shall: be able to demonstrate understanding of the skills necessary to present in a planetarium.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

4.1 Demonstrate understanding of public speaking in a planetarium setting, including dealing with an audience and adapting appropriately to audience requirements.

4.2 Demonstrate an understanding of the necessary ability to connect with an audience by voice alone.

4.3 Demonstrate a basic skill level in conducting a simple sky tour in a planetarium setting.

4.4 Demonstrate a basic skill level in handling an audience during a question and answer type of situation.

Common Course Number: AST 2080

Unit 5 Planetarium Education

General Outcome:

5.0 The student shall: be able to explain how the planetarium is used to educate students.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 5.1 Explain how the planetarium can augment students' understanding of astronomy.
- 5.2 Demonstrate a basic skill level in creating pre- and post-visit materials appropriately to extend the planetarium experience into the classroom.
- 5.3 Describe how a planetarium experience can support pedagogy in the classroom.
- 5.4 Describe how the planetarium environment can be used to teach interdisciplinary topics.

Unit 6 Planetarium Operations

General Outcome:

6.0 The student shall: be able to explain how the planetarium functions as an institution.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

6.1 Describe the different settings of a planetarium as an institution, including school-based, museum-based, and stand-alone.

6.2 Explain how programming can attract and serve various types of audiences.

6.3 Explain the standard positions within a planetarium and their roles, such as producer, technician, educator, et al.