ANTIOCH UNIFIED SCHOOL DISTRICT
CURRICULUM PROPOSAL

# of Proposal

Proposal is to: ☒ Add ☐ Modify ☐ Delete ☐ Pilot

This change is for: ☒ Course ☐ Program ☐ Material ☐ Assessment

The change will affect: ☒ Content and Objectives ☐ Credits/Requirements ☒ Subjects ☒ Staffing ☐ Other Courses ☒ Texts and Materials ☐ Other Departments

Course # Semester 1

Course # Semester 2

Course # Full Year

Course Title: **Planetarium Production (DRAFT)**

Department: Science **Subject:** Astronomy **Grade Level:** 11-12

Prerequisite for Class: Astronomy and Space Science or Astronomy **Teacher Recommendation:** Yes

Course Length: Year-Long **Credit:** 10 **Max Credits:** 10 ☒ **CP** ☐ **AP** ☐ **Honors** ☐ **Voc Ed**

Graduation Requirement: No **Fee Required:** No

Course Description

Write a description suitable for use in a student course catalog.

This course will provide students with an opportunity to construct multimedia presentations for use in small planetarium settings. The students will prepare a multimedia program on an astronomy related topic or topic suitable for presentation in a planetarium or science center. Students will develop and extend their knowledge of physics, chemistry, astronomy, and mathematics as they prepare, conduct and evaluate planetarium programs.

NOTE: THIS IS PART OF A PACKAGE OF COURSES SUBMITTED AS THE SPACE ACADEMY CURRICULUM.

Course Content and Evaluation

List specific skills and knowledge students will accomplish through this course. Decribe the assessment tools and products used to determine the degree to which a student has accomplished the objectives.

The student will: **Objectives**	**Assessment**
1. Be able to evaluate the content and presentation style of planetarium shows and educational materials in the field of astronomy education.	Rubric based evaluation
2. Classify the appropriate grade levels for content in astronomy.	Review of astronomy/earth science standards worksheet
3. Create multimedia presentations for use in planetarium shows.	Rubric evaluation of project including peer assessment
4. Present material in a planetarium for student and public shows.	Audience review and teacher review of presentation
5. Operate a planetarium correctly.	Performance assessment
6. Manage the flow of people into the planetarium, manage the ticket money collected, count the number of attendees, keep books on the funds collected and disbursed, write and maintain a budget.	Performance assessment
7. Do research and interviews on up to date astronomy concepts.	Rubric evaluation
8. Be able to explain the major concepts of astronomy and basic physics and chemistry to a lay audience.	Traditional assessments

9. Create web based, powerpoint, print and other educational resources for use in the classroom.	Product evaluation with rubric

Planetarium Production (DRAFT)

1.0 Needs Assessment/Needs Statement

1.1 What need will this course/program fulfill that cannot be met by current programs?

Current planetarium training for our outreach program consists of two two-hour training sessions after school. Our experience is this is not nearly enough training for students to act as expert presenters for knowledgeable elementary and middle school students in the audience.

1.2 How was this need determined? (Include test or other hard data to indicate need.)

Students voluntarily selecting this project showed great enthusiasm for conducting planetarium shows. An in-class survey of astronomy students showed that of currently enrolled students, x % would be interested in taking such a course. The course content builds on experiences in two years of field testing the outreach concept.

2.0 Affect on Other Aspects of the School/District Program

2.1 What groups of students and how many do you anticipate will be impacted by the change?

One class of students is anticipated. They will also have an impact on all of the students they serve.

2.2 What affect will this proposal have on staff assignments?

This class is intended to be self-sufficient through ADA. If the class does not "make," the planetarium functions will be assumed by the regular astronomy and space science class as a project--although not as well done as this should be.

2.3 What special skills, training, or experience will be required of a teacher of this course?

Multimedia skills, computer skills, and ability to teach public speaking. Also a good knowledge of the basics of astronomy is required, although since most programs are not of a high technical nature, a degree in astronomy is not necessarily required.

2.4 What successive classes will be needed if this course is approved? (Ex. German I approved, German II needed)

This is a culminating course, although if taken by juniors there may be some demand for Planetarium Production II. We are not currently planning a second course.

3.0 Goal Statements

List the Major Concepts and Goals of the course/program.

The program will provide students with the opportunity to contact and interview professional scientists working on cutting edge research, use the latest multimedia projection techniques in a planetarium setting, present the program to

a public audience, and fully document the source material used in the context of providing the programs to a larger audience in a regional, state, or national setting by distributing the program.

The major concepts to be developed are: Naming constellations and stars, the effect of the earth's rotation and revolution around the sun, Moon phases, astronomical coordinate systems, the earth's place in the universe, stellar evolution, and space travel concepts.

Planetarium Production (DRAFT)

4.0 Projected Costs

For items 4.1 – 4.5, itemize and provide estimated annual costs.

4.1 Personnel. List position(s). (Include teachers, aides, student help, and annual cost.)

One 1/5 FTE, paid by ADA.

4.2 Major supplies and services. (Include textbooks, software, training, contracts for services, etc.)

A planetarium already exists, provided by the District Science Center. Funding is being sought to construct a permanent facility in the center of the library.

4.3 Capital outlay. (Include machines, computers, remodeling space, large items.)

We estimate approximately $50,000 for the purchase and installation of the planetarium.

4.4 Total estimated <u>startup cost</u>. (Include materials, textbooks, hardware, software, etc.)

Approximately $60,000 for projectors, books, special effects equipment, slides, etc. Books are $140 x 30 = 4200. Bulk of the funds are for a permanent planetarium facility.

4.5 Total estimated reoccurring costs. (Include material replacement, repairs, contracts, etc.)

Maintenance and repair of the planetarium projector and facility; projector bulbs, multimedia materials should be covered with a $2000/year annual budget. Book replacement is expected to be covered by ADA.

4.6 List funds that will be used to pay for the above costs.

Admission prices for public shows and some school shows will defray annual operating expenses. Some one-time expenses will be borne by the SSP grant. Long term expenses will otherwise be covered by the science department budget.

5.0 Program Assessment

What pre and post data will be collected to demonstrate improved student achievement (e.g., student test results, student and parent surveys, grade distribution, class sign-ups, etc.)

Some data must be collected for the SSP grant; for example, graduation rates, post-graduation plans, etc. This, incombination with an evaluation survey, will help us to improve the course and report back to the committee.

6.0 Instructional Resources

List below the major instructional materials to be used in the proposed course. (Include textbooks, videos, trade books, etc.) Indicate whether materials are on hand or must be purchased. Refer to AR 6406 regarding selection of instructional materials.

Type of material	Publisher	Title	Author	Copyright	Cost	Have/ Need
Books	Lawrence Hall of Science	PASS (Planetarium Activities for	Sneider, Friedman,	2002?	$140 each	NEED

Copies of selected	LHS	PASS	Sneider, Friedman,	2002?	each $140 each	NEED

Signature Page For **Planetarium Production (DRAFT)**

List names of all affected principals, councils, departments and teachers with whom you have discussed this curriculum proposal. (Don't surprise other sites! Notify everyone who could be affected by this change.)

Name/School	Date Notified	Position Held
Britt Hammon/AHS		☐ Agree ☐ *Disagree
Mary Vinciguerra/DVHS		☐ Agree ☐ *Disagree
Debra Lee/District Office		☐ Agree ☐ *Disagree
Cheryl Domenichelli/DVHS		☐ Agree ☐ *Disagree
		☐ Agree ☐ *Disagree
		☐ Agree ☐ *Disagree
		☐ Agree ☐ *Disagree

***NOTE:** **If an individual and/or group does not agree with this intent, they must submit a written statement with this intent explaining why they disagree so both sides of the issue can be discussed at Curriculum Council.**

Jeff Adkins	DVHS	teacher
Submitted By	**School**	**Position**

Principal's name entered as approval **Date**

Do not write in this section.

Curriculum Council Recommendations:

☐ Accept: Complete Attached Proposal

☐ Reject:

Council Chairperson Signature	Date Reviewed	Date Approved
Reviewed and approved by Administrative Council:	Date Reviewed	Date Approved
Reviewed and approved by Board of Education:	Date Reviewed	Date Approved

Successive classes This is a culminating course, although if taken by juniors