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Viewing: **GS 107 : Physical Science (Astronomy)**

Last approved: 03/19/15 12:56 pm

Last edit: 02/02/19 7:01 am

Changes proposed by: [eriks.puris](#)

Catalog Pages	General Education/Discipline Studies
referencing this course	General Science

General Information

In Workflow

1. [GS SAC Chair](#)
2. [GS SAC Administrative Liaison](#)
3. [Curriculum Office-Curriculum](#)
4. [Curriculum Committee Chair](#)
5. [Dean of Instruction - Cascade](#)
6. Dean of Academic Affairs
7. VP Academic Affairs
8. Ready for Banner
9. Banner

Approval Path

1. 01/18/19 12:47 pm
[eriks.puris](#):
Recommended for GS
SAC Chair
2. 01/18/19 1:13 pm
[alyson.lighthart](#):
Recommended for GS
SAC Administrative
Liaison
3. 01/27/19 3:09 pm
[sally.earll](#):
Recommended for
Curriculum Office-
Curriculum
4. 02/19/19 6:24 am
[ann.cary](#): Recommended
for Curriculum
Committee Chair

History

1. Aug 13, 2014 by [jmorfin](#)
2. Mar 19, 2015 by
[stimmins](#)

Submitter:	<u>User ID:</u> eriks.puris stimmins	<u>Phone:</u> x7627 7813
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Course Prefix	General Science (GS)
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Course Number	107
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Course Type	Lower Division Collegiate
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Implementation Term	Fall 2019 201502
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Course Title	Physical Science (Astronomy)
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Transcript Title	Physical Science (Astronomy)
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	Lecture: Meets 3 hours per week for 10 weeks. Total student academic engagement hours per quarter: 90
Contact Hours per Quarter	Lec/Lab: Meets 0 hours per week for 10 weeks. Total student academic engagement hours per quarter: 0
	Lab: Meets 3 hours per week for 10 weeks. Total student academic engagement hours per quarter: 30
	Total student academic engagement hours for course: 120
Credits	4
Please indicate the basis for creating this experimental course:	
Justification for change:	Updating math, reading and writing prerequisites.
Does this course require a special additional fee set up through the bursar's office?	Yes
Special Fee Amount	\$12.00
Special Fee Code	T111
Special Fee	\$12.00
Course Is Repeatable	No
If this course is equivalent to other currently active course(s), please indicate	
If this course is mutually exclusive with other currently active course(s), please indicate	
If the SAC intends to allow this course to be co-scheduled with other currently active course(s), please indicate	
Grading Option(s)	Audit Letter Grade Pass/No Pass
Default Grading Option	Letter Grade
Course Description	Surveys astronomy to include historical development of the universe, Earth as a planet, Earth's moon, planets of the solar system, the sun, stars, stars and galaxies. Includes a weekly lab. Audit available.
Prerequisites	(WR WR-115, RD-115 and RD 115) MTH-65 or IRW 115 and (MTH 58 or MTH 65) or equivalent placement. placement-test scores.
Pre/Concurrent Courses	
Corequisites	
General Education/Discipline Studies Designation	

General Education
Areas Satisfied Mathematics, Science, Computer Science

Standard Prerequisites

Does this course need
to opt-out of the
standard
prerequisites? No

Cultural Literacy Designation

Does this course satisfy
the Cultural Literacy
Designation Criteria No

Course Content and Outcome Guide (CCOG)

Addendum to Course Description Physical Science (Astronomy) GS107 is a one-term introductory course in which distance-learning methods are used together with three required four-hour laboratory meetings and a separate orientation session. The distance-learning methods include televised video and Web Course tools (WebCT). The video is accompanied by a textbook and telecourse student guide. Homework projects currently involve the use of supplemental exercises on stellar properties that require the use of a computer. In addition, students perform nighttime observations of stars and the Moon, by tracking the position of one star and the Moon over one four-hour period and over the course of a week. These observations familiarize the student with the night sky and help reinforce concepts learned in the videos and text readings. Using WebCT, students take weekly quizzes, and can easily communicate with the instructor and other students in class. A calendar module in WebCT keeps students abreast of what they should be doing when. Students can also track their scores on graded assignments using WebCT. This course can also be taught as a standard, in-class course, as are GS 106, 108, and 109 with three hours per week in lecture/discussion, and three hours per week in lab.

The text and materials have been chosen by the faculty and the emphasis of the course will be the viewpoint of the author(s). This includes relativity, the geologic time scale, and the evolution of the Earth, our solar system, our galaxy, and the universe at large.

Regarding the teaching of basic geologic principles (such as geologic time and the theory of evolution), the Portland Community College Geology Department stands by the following statements about what is science.

Outcomes **Upon completion of the** ~~A student who successfully completes this~~ course **students** should be able to:

1. Use an understanding of solar system models to explain the motions and phases of astronomical objects visible to the naked eye in the night sky.
2. Use an understanding of planetary, stellar, **galactic**, ~~galactic~~ and universe scale astronomical processes to assess the possibility of life existing elsewhere in the universe.
3. Access space science information from a variety of sources, evaluate the quality of this information, and compare this information with current models of astronomical **processes**, ~~processes~~ identifying areas of congruence and discrepancy.
4. Make field and **laboratory-based** ~~laboratory-based~~ observations and measurements of astronomical phenomena, use scientific reasoning to interpret these observations and measurements, and compare the results with current astronomical models identifying areas of congruence and discrepancy.
5. Use scientifically valid modes of inquiry, individually and collaboratively, to critically evaluate the hazards and risks posed by astronomical processes both to themselves and society as a whole, evaluate the efficacy of possible ethically robust responses to these risks, and effectively communicate the results of this analysis to their peers.

Aspirational Goals

Course Activities and Design The material in this course will be presented through televised video with accompanying reading assignments, in three laboratories and a required orientation session, and through supplemental computer activities. Students will be encouraged to work together on an observing project, but will be required to demonstrate mastery of the course content by taking in-class exams. Alternatively, the course can be a standard, in-class course as described above.

**Outcomes
Assessment
Strategies**

At the beginning of the course, the instructor will detail the methods used to evaluate student progress and the criteria for assigning a course grade. The methods include one or more of the following tools: on-line quizzes, in-class examinations, and homework assignments, and laboratory assignments.

**Course
Content:
Themes,
Concepts,
Issues and
Skills**

1. Describe astronomical distance and size scales.
2. Describe the apparent motion of astronomical objects (planets, stars) caused by the rotation and revolution of the Earth.
3. Describe the historical development of astronomy.
4. Describe the properties of light.
5. Describe the properties of the sun and other stars.
6. Describe how stars evolve.
7. Describe the properties of the Milky Way galaxy and other galaxies.
8. Describe the global properties of various planets in the solar system, including the Earth and it's moon.
9. Describe the properties of meteorites, comets, and asteroids.

**Course reviewer
comments**

Key: 4103