MASTER COURSE OUTLINE
Prepared By: Jim Hamm Date: September 2017

COURSE TITLE
Survey of Science

GENERAL COURSE INFORMATION

Dept.: SCI	Course Num: 101	(Formerly:)
CIP Code: 40.0101	Intent Code: 11	Program Code:
Credits: 5		
Total Contact Hrs Per Qtr.: 55		
Lecture Hrs: 55	Lab Hrs: 0	Other Hrs: 0
Distribution Designation: Natural Science NS		

COURSE DESCRIPTION (as it will appear in the catalog)
An introduction to and survey of the natural sciences of astronomy, biology, chemistry, geology and physics.

PREREQUISITES
None

TEXTBOOK GUIDELINES
Science 101 by Kathleen Duvall and Jim Hamm

COURSE LEARNING OUTCOMES
Upon successful completion of the course, students should be able to demonstrate the following knowledge or skills:
1. State the scientific method and how it is applied in each of the subject sciences.
2. Recognize the difference between science and pseudoscience.
3. Discuss in a qualitative way current research areas in each of the subject sciences.
4. Discuss the historical background of each of the subject sciences.
5. Develop a general appreciation and understanding of science.
6. State the difference between a fact and a belief.

INSTITUTIONAL OUTCOMES
None

COURSE CONTENT OUTLINE
- I. Introduction to Science
  - The scientific method.
  - The historical background of modern sciences.
- II. Astronomy
  - History of astronomy
  - Astronomical time and distances
  - The solar system

Suns, galaxies, clusters, etc.
Cosmology and theories of the origin of the universe.
The life cycle of stars
The big bang theory
Dark matter, dark energy, and the fate of the universe
Phases of the moon and the effect of the moon on tides

III. Biology
History of biology
Evolution
DNA
Environmental science
Genetic engineering and recombinant DNA
Immunology and AIDS

IV. Chemistry
History of chemistry
The periodic table
Electron shells
Atoms and their components
Molecules
Ionic vs. molecular compounds
Properties of gases
Acids, bases, and properties of H2O
An understanding of chemical reactions

V. Geology
History of geology
Plate tectonics
Geologic time scales and radiometric dating
The rock cycle
The ice ages and glaciation
Local geology (Missoula floods, Cascade volcanoes)

VI. Physics
History of physics
Newton's laws
The fundamental forces of nature
Quantum mechanics
Elementary particles
Relativity
Electricity and magnetism
Superconductivity
Particle accelerators
Light
Nuclear fission and fusion

DEPARTMENTAL GUIDELINES *(optional)*
Depending on the instructor, grades might be based on a combination of written assignments, three or four unit tests, and a comprehensive final test. The written assignments would be based on assigned readings. PO5 should be assessed: Students will be able to solve problems by gathering, interpreting, combining and/or applying information from multiple sources.

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DIVISION CHAIR APPROVAL **DATE**