

PALOMAR COLLEGE
COURSE OUTLINE OF RECORD FOR
DEGREE CREDIT COURSE

X Transfer course X A.A. degree applicable course

(check all that apply)

COURSE NUMBER AND TITLE: CHEM 101 - The World of Chemistry

UNIT VALUE: 3

MINIMUM NUMBER OF SEMESTER HOURS: 48

BASIC SKILLS REQUIREMENTS: Appropriate language skills.

ENTRANCE REQUIREMENTS:

PREREQUISITE: None

COREQUISISTE: None

RECOMMENDED PREPARATION: None

SCOPE OF COURSE: An introduction to chemistry for non-science majors. Stresses a humanistic approach to chemistry and de-emphasizes mathematical problem solving. Includes chemical and physical discoveries and their impact on our standard of living, the formulation of chemical theories from chemical facts, and the use of chemical theories to make scientific and technological advances.

SPECIFIC COURSE OBJECTIVES:

The successful student will be able to:

1. Evaluate chemical phenomena in environment.
2. Analyze impact of personal/political decisions on the environment and quality of life.
3. Understand the nature of matter.
4. Analyze the impact of discoveries on our way of life.

CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:

1. Introduction to the science of chemistry.
2. The role of color and dyes in the development of modern chemistry.
3. Importance of accurate and precise measurement to modern chemistry.
4. How scientists use their imaginations and experiences to explain behavior at the micro level and at vast distances.
5. The states of matter.
6. The atom.
7. The Periodic Table.
8. Chemical bonds.
9. Molecular architecture.
10. The interaction of radiation with matter.
11. The mole concept.
12. Water is a unique chemical.
13. The driving forces of chemical reactions.

14. Molecules in action and the effect of catalysts.
15. Electrochemical cells, corrosion and electrolysis.
16. Proton transfer reactions of acids and bases.
17. The chemistry of our planet's atmosphere.
18. The chemistry of the Earth.
19. Properties of metals.
20. Reactions on surfaces used in everyday applications.
21. The architecture and creation of carbon-based molecules.
22. Polymers.
23. Proteins.
24. The Genetic code.
25. Chemistry and the environment.
26. Future trends in chemical research and development.

REQUIRED READING:

Joesten, Melvin D., David O. Johnston, John T. Nettervill, and James L. Wood. World of Chemistry. Philadelphia: Saunders College Publishing, 1990.

Castellan, Gilbert, Nava Ben-Zvi, and Isadore Adler. Study Guide to the World of Chemistry. Philadelphia: Saunders College Publishing, 1990.

SUGGESTED READING:

Scientific Journals: Science News, Scientific American, Discover, and OMNI.

REQUIRED WRITING:

Report on chemistry subject of choice, 1-2 pages in length.

OUTSIDE ASSIGNMENTS:

Students are expected to spend a minimum of three hours per unit per week in class and on outside assignments, prorated for short-term classes.

Outside assignments include:

A journal of observations concerning chemical phenomena in environment (newspaper clippings, food labels, etc.), reading the text, reviewing notes on the television topics, preparing a report.

INSTRUCTIONAL METHODOLOGY:

Check all that apply:

- lecture
- laboratory
- lecture-laboratory combination
- directed study

This course may be offered as a distance education course and meet Title 5 regulation 55370, 55372, 55374, 55376, 55378, and 55380.

Yes No

If yes, check all that apply. (See guidelines for preparation for definitions.)

- telecourse
- mediated instruction
- computer assisted instruction

GRADING POLICY AND STANDARDS (include methods of determining whether the stated objectives have been met my students):

1. Exams = 50%
2. Report = 25%
3. Journal = 25%

IS THE COURSE REPEATABLE FOR REASON(S) OTHER THAN DEFICIENT GRADE?
Yes ___ No X Number of times course may be taken for credit: X

If yes, identify specific provision of Title 5 Division 2 section(s) 55761-55763 and 58161 which qualifies course as repeatable: