



Specific Pre-major Requirements

CHEM& 141	General Chemistry I	4 credits
CHEM& 142	General Chemistry II	4 credits
CHEM& 143	General Chemistry III	4 credits
CHEM& 151	General Chemistry Lab I	1 credit
CHEM& 152	General Chemistry Lab II	1 credit
CHEM& 153	General Chemistry Lab III	2 credits
CHEM& 241	Organic Chemistry I	4 credits
CHEM& 242	Organic Chemistry II	4 credits
CHEM& 243	Organic Chemistry III	4 credits
CHEM& 251	Organic Chemistry Lab I	1 credit
CHEM& 252	Organic Chemistry Lab II	1 credit
CHEM& 253	Organic Chemistry Lab III	2 credits
MATH& 153	Calculus III [Q]	5 credits
or 203	Descriptive Statistics	3 credits
and 204	Inferential Statistics	3 credits
PHYS& 221	Engineering Physics I**	5 credits
PHYS& 222	Engineering Physics II**	5 credits
PHYS& 223	Engineering Physics III**	5 credits

Recommended Electives

EDUC& 201	Introduction to Education	3 credits
EDUC 210	Introductory Field Experience	3 credits

Minimum Credits Required **90 credits**

* Check with program specific advisor regarding proper selection.

** Calculus-based physics is required at some universities. Students need to check with the receiving institution to see if the other physics sequence would be acceptable.

College Abilities

Clark College has identified six college-wide abilities that help students apply what they learn. The core abilities are taught across the curriculum and students continually practice and improve their skills in the six areas.

Communication

The ability to understand and deliver written, spoken and visual communication clearly and accurately.

Critical Thinking/Problem Solving

The ability to formulate, evaluate and synthesize facts, data, ideas, assumptions, values and points of view.

Effective Citizenship

The ability to identify community issues; evaluate and respect various opinions and values; and articulate one's own perspective.

Global/Multicultural Perspectives

The ability to identify, analyze and demonstrate how culture shapes world perceptions, values and behaviors.

Lifelong Learning

The ability to set and revise goals, access resources and assume responsibility for one's own learning.

Information/Technology

The ability to identify resources; retrieve and manage data; interpret, evaluate and use information; and adapt to changing technologies.



Clark College does not discriminate on the basis of race, color, national origin, sex, disability, age, religion, sexual orientation, gender identity, gender expression, political affiliation, creed, disabled veteran status, marital status, honorably discharged veteran or Vietnam-era veteran status in its programs and activities.

Revised 5/6/2009

Physical Science

Chemistry/ Chemistry Education



- See how chemical principles operate in all aspects of our lives
- Associate in Science Transfer Degree
- Two-year transfer program



Chemistry/ Chemistry Education

Chemistry is the study of the properties of materials and the changes that materials undergo. One of the joys of learning chemistry is seeing how chemical principles operate in all aspects of our lives, from everyday activities like lighting a match to more far-reaching matters like the development of drugs to cure cancer or reduce environmental hazards.

Career Opportunities

People who have degrees in chemistry hold a variety of positions in industry, government and academia. Those who work in the chemical industry find positions as laboratory chemists, carrying out experiments to develop new products (research and development), analyzing materials (quality control), or assisting customers in using products (sales and services). Analytical and control chemists usually have at least a bachelor's degree. Those with more experience or training may work as managers or company directors. They may also embark in the medical field, patent law or the environmental sciences. Growing global interests in green products and methods are also opening many opportunities for chemists.

Clark College's Chemistry Department offers a multifaceted curriculum designed to meet a variety of needs—from those of students pursuing a health-related Applied Science Degree to requirements for earning an Associate in Science Degree in Chemistry, Biology, Engineering or Physics.

Chemistry

Associate in Science Transfer Degree (AST-1)

This is a suggested program for the first two years of major study in chemistry. Please meet with an advisor at Clark College to determine if you meet the prerequisites for the chemistry major area requirements. Lower-division course requirements will vary depending on the transfer institution. Contact an advisor at the transfer institution to determine required coursework as early as possible. Courses in computer applications are recommended for all students. Additional courses are needed to satisfy graduation requirements for the Associate in Science.

General Education Requirements

CMST& 220 or 230 or 210	Public Speaking Small Group Communication Interpersonal Communication	5 credits 5 credits 5 credits
ENGL& 101 ENGL& 102 or	English Composition I Composition II	5 credits 5 credits
ENGL 109 or	Writing About the Sciences	5 credits
ENGL& 235 GERM& 121 GERM& 122 GERM& 123	Technical Writing German I* German II* German III*	5 credits 5 credits 5 credits 5 credits
MATH 111 MATH& 151 MATH& 152	College Algebra Calculus I Calculus II	5 credits 5 credits 5 credits

Major Area Requirements

CHEM& 141	General Chemistry I	4 credits
CHEM& 142	General Chemistry II	4 credits
CHEM& 143	General Chemistry III	4 credits
CHEM& 151	General Chemistry Lab I	1 credit
CHEM& 152	General Chemistry Lab II	1 credit
CHEM& 153	General Chemistry Lab III	2 credits
CHEM& 241	Organic Chemistry I	4 credits
CHEM& 242	Organic Chemistry II	4 credits
CHEM& 243	Organic Chemistry III	4 credits

CHEM& 251	Organic Chemistry Lab I	1 credit
CHEM& 252	Organic Chemistry Lab II	1 credit
CHEM& 253	Organic Chemistry Lab III	2 credits
MATH& 153	Calculus III	5 credits
MATH 215	Linear Algebra**	5 credits
MATH 221	Differential Equations**	5 credits
MATH& 254	Calculus IV**	5 credits
PHYS& 221	Engineering Physics I	5 credits
PHYS& 222	Engineering Physics II	5 credits
PHYS& 223	Engineering Physics III	5 credits
<u>Health & PE Requirements</u>		<u>3 credits</u>
Minimum Credits Required		90 credits

* Please check with the transfer institution regarding foreign language requirements.

** Please check with the transfer institution regarding specific math requirements.

Chemistry Education

Associate in Science Degree – Track 1 (AST-1) - MRP

This is a state-approved transfer program for the first two years of major study in chemistry for future secondary chemistry teachers. Lower-division course requirements will vary depending on the transfer institution. Contact an advisor at the transfer institution to determine required coursework as early as possible.

General Education Requirements

Communication Skills [C]

ENGL& 101	English Composition I	5 credits
ENGL& 102 or ENGL 109	Composition II Writing About the Sciences	5 credits 5 credits

Quantitative Skills [Q]

MATH& 151	Calculus I	5 credits
MATH& 152	Calculus II	5 credits

Humanities and Social Science [HA, HB, SS]*

CMST& 220	Public Speaking [HA]	5 credits
PSYC& 100	General Psychology [SS]	5 credits
Humanities or Social Science Requirement		5 credits

Continued on the next page