

CHEMISTRY

TRANSFER

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The chemistry program provides the basics for students planning a career in chemistry or a related field. An Associate in Science degree is awarded to those who complete the requirements for the two-year degree.

Chemists often specialize in a subfield of chemistry, such as analytical, organic, inorganic, physical, polymer or biochemistry. More than half of all chemists work in research and development for manufacturing firms and chemical companies. Others work in production and inspection, as marketing or sales representatives, as teachers, or as consultants to private industry and government agencies.

Other areas for which chemistry serves as the basic foundation are pre-medicine, pre-veterinary science, pharmacy, and chemical engineering. Students planning careers as chemists should enjoy science and mathematics, have an inquisitive mind and imagination, and enjoy working with their hands. They also must be able to concentrate on detail and work independently. High school students planning to major in chemistry should study as much science and math as possible. Students should refer to the catalog of the school where they plan to complete their bachelor's degree requirements and modify the following suggested curriculum if necessary.

Career Possibilities: Air Pollution Analyst, Soils Analyst, Water Quality Analyst, Food Chemist, Chemist—any industry, Chemistry Teacher, Crime Laboratory Analyst.

SUGGESTED CURRICULUM FOR ASSOCIATE IN SCIENCE:

FRESHMAN

CREDITS

College Composition I-II, Intro. to Professional Writing (ENGL 110 and 120 or 125)	6
Fundamentals of Public Speaking (COMM 110)	3
General Chemistry I&II (CHEM 121-122).....	8
General Chemistry I&II Lab (CHEM 121L-122L)	2
Calculus I & II (MATH 165 -166)	8
Arts and Humanities Electives.....	6
Enrichment.....	2
Total credits.....	35

SOPHOMORE

Social Science Electives	6
Organic Chemistry I&II (CHEM 241-242)	8
Organic Chemistry I&II Lab (CHEM 241L-242L)	2
University Physics (PHYS 251-252)	8
University Physics Lab (PHYS 251L-252L)	2
Calculus III (MATH 265).....	4
Intro. to Differential Equations (MATH 266)	3
Total credits.....	33

CHEMISTRY (CHEM)

CHEM 110 Survey of Chemistry

Fall BD

3 credits

Course designed specifically for non-science majors who wish to obtain a basic understanding of chemistry as applied in the world today. Does not serve as a prerequisite for other chemistry courses. Concurrent registration in CHEM 110L is required.

CHEM 110L Survey of Chemistry Lab

Fall BD

1 credit

One three-hour lab session per week. An introduction to general and organic chemistry laboratory techniques with an emphasis on applications drawn from health, environmental and industrial sciences. Concurrent registration in CHEM 110 is required.

CHEM 112 Introduction to Forensic Science

F&S

3 credits

Prerequisite: MATH 102. Introduces the basic principles and relationships between the applications of chemistry to forensic sciences as they relate to the criminal investigative process. Areas included are blood analysis, hair analysis, firearm identification, fiber comparisons, paints, glass compositions, soil comparison, and seminal fluid analysis. Upon completion of this course students should understand the potential value of forensic science and also the limitations. Concurrent registration in CHEM 112L required.

CHEM 112L Introduction to Forensic Science Lab

F&S

1 credit

Prerequisite: MATH 102. Concurrent registration in CHEM 112 required.

CHEM 114 Chemistry in Art

Spring BD

3 credits

This course is designed specifically for non-science majors and liberal arts majors who wish to obtain the elementary principles and theories of chemistry and the study of chemical elements and their compounds as relevant to art topics and real-world uses. It does NOT serve as a prerequisite

for any other chemistry courses. Concurrent registration in CHEM 114L required.

CHEM 114L	Chemistry in Art Lab	Spring BD	1 credit
Two one-hour lab sessions per week. Concurrent registration in CHEM 114 is required.			
CHEM 115	Introductory Chemistry	F&S SM	4 credits
Elementary principles and theories of chemistry and the study of chemical elements and their compounds. Concurrent registration in CHEM 115L is required. Prerequisite: MATH 102 or instructor permission.			
CHEM 115L	Introductory Chemistry Lab	F&S SM	1 credit
One two-hour lab session per week. Concurrent registration in CHEM 115 is required.			
CHEM 116	Introduction to Organic and Biochemistry	F&S SM	4 credits
Prerequisite: Passing grade of 'C' or better in CHEM 115 within the past three years. Emphasis is placed on organic and biochemistry. Especially intended for students who wish to include organic and biochemistry their first year. Required for students planning degrees in nursing, clinical lab technician and other allied health fields. Concurrent registration in CHEM 116L is required.			
CHEM 116L	Introduction to Organic and Biochemistry Lab	F&S SM	1 credit
One two-hour lab session per week. Concurrent registration in CHEM 116 is required.			
CHEM 121	General Chemistry I	F&S	4 credits
Prerequisite: CHEM 115 or one year high school chemistry and MATH 103 or higher. Required of engineers, pre-medical students, clinical lab scientists, pharmacists, chiropractors and others planning on advanced courses in chemistry. Covers matter, measurement, atoms, ions, molecules, reactions, chemical calculations, thermochemistry, bonding, molecular geometry, periodicity, and gases. Concurrent registration in CHEM 121L is required.			
CHEM 121L	General Chemistry I Lab	F&S	1 credit
One three-hour lab session per week. Concurrent registration in CHEM 121 is required.			
CHEM 122	General Chemistry II	F&S	4 credits
Prerequisite: A passing grade of 'C' or better in CHEM 121. Intermolecular forces, liquids, solids, kinetics, equilibria, acids and bases, solution chemistry, precipitation, thermodynamics, electrochemistry. Concurrent registration in CHEM 122L is required.			
CHEM 122L	General Chemistry II Lab	F&S	1 credit
One three-hour lab session per week. Concurrent registration in CHEM 122 is required.			
CHEM 241	Organic Chemistry I	Fall	4 credits
Prerequisite: a passing grade of 'C' or better in CHEM 122. Open to all science majors with adequate preparation. Recommended for pharmacy, pre-med, clinical lab science, chemistry, chemical engineering, chiropractic, and related fields. Concurrent registration in CHEM 241L is required.			
CHEM 241L	Organic Chemistry I Lab	Fall	1 credit
Organic synthesis and functional group analysis. Requires one-hour pre-lab meeting and one three-hour independent study block per week. Concurrent registration in CHEM 241 is required.			
CHEM 242	Organic Chemistry II	S	4 credits
Prerequisite: a passing grade of 'C' or better in CHEM 241. Continuation of CHEM 241. Open to all science majors with adequate preparation. Recommended for pharmacy, pre-med, clinical lab science, chemistry, chemical engineering, chiropractic, and related fields. Concurrent registration in CHEM 242L is required.			
CHEM 242L	Organic Chemistry II Lab	S	1 credit
More advanced aspects of organic laboratory operations and synthesis. Analysis and structure determination using spectroscopic techniques. Requires one-hour pre-lab meeting and one three-hour independent study block per week. Concurrent registration in CHEM 242 is required.			
CHEM 294	Independent Study		1-3 credits
Independent or directed study of special topics in chemistry. Department chairperson approval required.			
CHEM 299	Special Topics in Chemistry	BD	1-3 credits
Repeatable up to six semester hours. An examination of special topics in chemistry.			
CHEM 195-295	Service Learning		1-3 credits
Maximum of six semester hours. Service learning may be accomplished by one of three methods: Joining a club that has a public service component, doing volunteer work at a non-profit organization, or taking a course that links public service with its curriculum.			
CHEM 197-297	Cooperative Education/Internship	F&S SM	1-3 credits each
Repeatable up to a maximum of six hours. Work hours are arranged by employer, adviser and student. Progress is checked by oral and written reports from the employer. Periodic student-adviser conferences are required to discuss progress or problems. Students are required to submit an accounting of their experiences to their instructor. All co-op experiences are based on a satisfactory/unsatisfactory basis. Department chair approval is required.			