College of Arts and Sciences Advising Checklist

CHEMISTRY BS

UPDATED: AUGUST 2008

GENERAL EDUCATION- One course from each area for a total of 36 (32) credits

Category and Courses	*Credits*
Arts (AR)	
Literature (LT)	
Foreign Language & Culture (Language) (LG)	
Western Civilization (WC)	
Global Perspective (International Studies) (IS)	
Social Science (SS)	
Formal Reasoning (Math, Logic, or Computer Science) (ML)	**MTH 154**
Natural Science and Technology (NS)	**CHM 157**
Knowledge Applications (cannot be CHM)	**MTH 155**

Writing Proficiency:
WRT 150 _____
WRT 160 _____

GEN ED NEEDS:

_____

COLLEGE DISTRIBUTION REQUIREMENT- One course in 3 areas (12 credits total)

Area and Course	*Credits*
Arts and Literature	
Foreign Language at 115 level or higher	
Civilization	
Social Sciences	
Mathematics	**MTH 155**
Natural Sciences	**CHM 158**
One interdisciplinary course-AMS 300 or WGS 200	

U.S. Diversity: _____

WIM: CHM 348
WIGE: _____
CAP: CHM 491 or 457

DISTRIBUTION NEEDS:

_____

MAJOR COURSES- Student must be admitted to major standing a minimum of three semesters before graduation.

Course	*CR*	*GRADE*
CHM 157 (or 167)	5	
CHM 158 (or 168)	5	
CHM 220	2	
CHM 234	4	
CHM 235	4	
CHM 237	2	
CHM 325	4	
CHM 342	4	
CHM 343	4	
CHM 348	2	
CHM 362	3	
CHM 438	2	
BCM/CHM 453	3	
CHM 400 (Two semesters)		
8 credits of 400 level CHM electives (2 cr. must be labs)*		
1. CHM 491 or CHM 457 (capstone)	3	
2.	5	

NOTE: No more than 3 credits of CHM 491 may be applied and CHM 490 is excluded.
*For students entering the program fall 2004 or later, these courses must be approved in writing by the Chief Adviser.

CO-REQUISITE COURSES

Course	*CR*	*GRADE*
MTH 154 (Requires placement test)	4	
MTH 155	4	
PHY 151	4	
PHY 152	4	
CSE 130 (Recommended elective)	4	

MINOR COURSES (optional)

Course	*CR*	*GRADE*

Total CHM credits required for major= 52

**Cumulative GPA of 2.00 is required for the major and overall.
**Follow this form in conjunction with your catalog and advice from your faculty adviser.
**Credit received for MTH 011/012 or RHT 045 is not counted towards the degree.

SUMMARY AFTER _____

Min. required for degree	124 credits	124 credits
Transfer credit		
OU credit (through current semester)		
TOTAL		
Minus MTH 011/012, RHT 045		
TOTAL		
Credits Needed		
Date		

TOTAL NEEDED AFTER _____

Rhetoric		
General Education		
Diversity		
WIM/WIGE/CAP		
Distribution		
Major		
Minor/Concentration		
Electives		
TOTAL		
Date		

300/400 LEVEL
(32 credits required)

CHM 325	4
CHM 342	4
CHM 343	4
CHM 348	2
CHM 362	3
CHM 438	2
CHM 453	3
CHM	

Completed: _____
Needed: _____

COLLEGE OF ARTS AND SCIENCES

DEPARTMENT OF CHEMISTRY OAKLAND UNIVERSITY

Chemistry as an Undergraduate Major

Chemistry concerns itself with the composition and transformation of substances. People who choose chemistry like to think about understanding and changing the world, like to solve problems, are comfortable manipulating numbers, and enjoy experimenting.

Chemists do research in government laboratories, industrial laboratories, hospitals, art museums, and food manufacturing plants. For chemists who like to work with plants or animals, possibilities include environmental research, testing and quality control in laboratories of agricultural chemical firms, research with international organizations.

Chemists, especially those trained in biochemistry, work in collaboration with medical scientists to research ways to prevent and treat illness. Chemists are also involved in the design and synthesis of new medications. Forensic chemists analyze evidence of crime and develop evidence for use by the court. Chemistry is also an excellent background for fields such as business management, banking, and patent law. The department offers a joint program with the School of Engineering and Computer Science leading to a major in engineering chemistry. The department also offers a program leading to secondary education teacher certification (STEP).

Skills and Abilities

A liberal arts graduate possesses a constellation of skills that enhance that person's ability to find satisfying life's work. These skills, developed in the arts and sciences, and sought by employers, include the ability to identify problems and needs by understanding and using organizing principles; ability to use a variety of information sources; ability to evaluate information against a set of standards; ability to write information clearly and concisely; ability to apply information creatively to solve a problem.

Graduates in chemistry possess many useful skills, including data gathering and interpreting, knowledge of scientific equipment, hypothesis testing and problem solving, all of which result from research experience. Students in this major also develop general communication, project development, and computational skills. Chemists also possess a curiosity about things which leads to creative problem solving and is important in many careers. These skills could be summarized in the following fashion:

Analytical	**General**
Developing theories	Acute observational skill
Testing hypotheses	Laboratory skills
Problem clarification	Facility with technical equipment
Logical thinking	Curiosity

Degree Requirements for the B.A. or B.S. in Chemistry

The chemistry core (44 credits) taken by all majors includes general chemistry including laboratory, organic chemistry plus laboratory, analytical chemistry, physical chemistry plus laboratory, inorganic chemistry plus laboratory, biochemistry and chemistry seminar. Cognate work is required in physics, mathematics, and computer science The B.S. degree requires an additional 8 credits taken at the 400-level; ACS certification is granted to students who complete this degree program. Pre-medical students must take an additional 3 to 5 courses in biology.

Career Possibilities

Government
Pollution control engineer
Product safety engineer
Petroleum inspector
Insecticides tester
Cosmetic analyst
Nutrition analyst
Quality control chemist
Pest control

Industry/Manufacturing
Chemical engineer*
Petroleum engineer*
Food processing manager
Chemical lab technician

Operator, chemical reactor
Industrial hygienist
Sewer system supervisor
Water works supervisor
Market research analyst
Catalyst sales coordinator
Biomedical engineer*
Textile chemist
Technical sales representative

Research
Mineralogist
Cytologist
Agronomist*
Microbiologist*
Mycologist*
Physical metallurgist*
Research dietician
Horticulturalist*
Hydrologist*
Geneticist*
Environmental analyst
Biochemist
Food chemist
Pathologist

Parasitologist
Animal nutritionist

Forensic Chemistry
Jurisprudence
Serology
Drug analysis
Criminalist
Spectroscopy

General
Teacher
Clinical dietician*
Soil conservationist
Wood technologist
Fluid mechanic engineer*
Analytic chemist*
Organic chemist*
Histopathologist*
Paint chemist
Meteorological chemist
Inorganic chemist
Pharmaceutical chemist*
Radio chemist
Radiation health specialist
Ceramic chemist
Physical chemist*
Food technologist
Art conservator*
Chemical oceanographer
Science journal editor
Solid state chemist
Enzymology

*Will require advanced degree or additional training

For More Information

The chemistry faculty are knowledgeable about chemistry careers, and all enjoy helping students construct a four-year plan which will meet their individual needs. Plan to consult with your adviser regularly.

Department of Chemistry
260 Science and Engineering Building
Dagmar Cronn, Chief Adviser,
(248) 370-2320

College of Arts & Sciences Advising
221 Varner Hall, (248) 370-4567

Placement & Career Services
275 West Vandenberg Hall
(248) 370-3250

Career Resource Center
121 North Foundation Hall
(248) 370-3227

Also consult:

Opportunities in Chemistry. John Woodburn. 1979.

American Chemical Society
1155 16th Street, N.W. Washington, D.C. 20036

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