



WESTERN MICHIGAN UNIVERSITY

Jackson College

Fall 2016

## Western Michigan University Chemistry Curriculum Guide

The WMU Department of Chemistry offers a choice of six majors:

- **Chemistry major** – this 35 credit hour major in the College of Arts and Sciences Liberal Education Curriculum (LEC) is designed for students interested in graduate studies in chemistry;
- **Chemistry major ACS Certified** - this 42 credit hour major is certified by the American Chemical Society and is for students planning to enter the chemical industry, though it may be taken by students planning on graduate school study of chemistry;
- **Biochemistry** - this 36 credit hour major is recommended for students interested in careers in health sciences (medicine, dentistry, nutrition, pharmacology, etc.) or a graduate career in biochemistry or molecular biology;
- **Business-oriented chemistry major** - this 37 credit hour major is available to provide the chemical understanding needed if you are preparing for a career in the chemical industry, outside the laboratory. A minor will be chosen in the Haworth College of Business, and students are prepared to enter areas of management, sales, and some aspects of government service;
- **Geochemistry major** – students choosing this 68 credit hour major should contact the department of Geosciences as early as possible for advising. The major is designed for students interested in the fields of geochemistry or environmental chemistry;
- **Secondary education chemistry major** - this 34 credit hour major is designed for students who desire to teach high school chemistry. Secondary education majors must meet with a College of Education and Human Development (CEHD) advisor for general education, pre-professional, and professional education requirements. To view the curriculum guide for this major, please go to the list of all major guides and select the chemistry guide listed under “Secondary Education.”

### Important Information:

- To ensure that you possess adequate skills in chemistry, you must have had one year of high school chemistry. Otherwise you must enroll in CHEM 1000 (No equivalent at JC) to build up your background in chemistry;

- In addition chemistry students must meet one of the following math requirements: MATH ACT score of 25 or higher, successful completion of MATH 1110 (MAT 131 or 139 at JC) with a grade of a “C” or higher, or place into MATH 1180 (MAT 141 at JC) or a higher math course;
- All chemistry majors must meet with a chemistry department advisor about major or minor requirements. You must make an advising appointment to declare your major or minor;
- For general education (see below) requirements , you must meet with a College of Arts and Sciences (CAS) advisor;
- Business-oriented chemistry majors will be required to complete a minor in General Business, Management, or Marketing in the Haworth College of Business (HCoB);
- If your major is chemistry, you must complete your last 14 credits hours in the Department of Chemistry at WMU;
- If your minor is chemistry, you must include at least one course that contains a laboratory experience, and your last seven (7) credits must be taken in the Department of Chemistry at WMU.

**Courses that can be taken at Jackson:**

**WMU courses**

CHEM 1100/1110  
 CHEM 1120/1130  
 CHEM 3750/3760  
 CHEM 3770/3780  
 MATH 1220  
 MATH 1230  
 MATH 2720  
 PHYS 2050/2060  
 PHYS 2070/2080

**Jackson courses**

CEM 141  
 CEM 142  
 CEM 241 (not required for Geochem majors)  
 CEM 242 (not required for Geochem majors)  
 MAT 151  
 MAT 154  
 MAT 251 (not required for Geochem majors)  
 PHY 251 (not required for Geochem majors)  
 PHY 252 (not required for Geochem majors)

**Business-oriented majors may take these additional courses:**

BUS 1750	BUA 100
MKTG 2500	BUA 230
ACTY 2100	ACC 231

**Biochemistry majors may take these additional courses:**

BIOS 1610	BIO 162
BIOS 1620	BIO 161

### **Geochemistry majors may take these courses:**

**\*\*\*Very important note:** Geochemistry majors only need the following Chemistry courses: CEM 141, 142, CHEM 2250/2260 (not available at JC), and 9 hours of **upper level Chemistry** course-work. You will also need 11 credits of **Math and General Science** (below), and 9 credits of Geoscience electives (taken at WMU).

#### **Required:**

GEOS 1300

GEL 160

#### **Will transfer as “Math and General Science ” or Chemistry electives:**

CHEM 3750/3760

CEM 241

CHEM 3770/3780

CEM 242

BIOS 2320

BIO 220

MATH 2720

MAT 251

MATH 3740

MAT 254

PHYS 2050/2060

PHY 251

PHYS 2070/2080

PHY 252

#### **General education requirements:**

- Please see the WMU [general education guide](#) for information on the courses that are required from all students, as part of the graduation requirements at WMU;
- All chemistry majors (except education majors) will be required to complete the world languages requirement. You can do so in one of the following ways:
  - Take two years of one high school language, with a B- or higher in the last semester, or at any point after that if more than two years are completed;
  - Take two semesters of one language in college;
  - Pass a language proficiency test. Please contact the WMU World Languages department for languages other than Spanish, and the Spanish department for that language. Neither the MACRAO Agreement nor the Michigan Transfer Agreement satisfy the world languages requirement;
  - American Sign Language may also be used to meet this requirement;
  - If the student’s first language is not English, then the student is exempt from this requirement, verified through the WMU departments of Spanish or World Languages and Literatures.

#### **Contact information:**

Chemistry department advisors:

Dr. Steve Bertman

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Dr. John Miller

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Dr. Donald Schreiber  
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(269) 387-2856

Dr. Robert Sutton  
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(269) 387-2834

Chemistry Satellite Office, 2220 Chemistry Building  
<http://wmich.edu/chemistry/advising>, for appointments

**For general education advising:**

CAS advisors – 2318 Friedmann Hall  
[wmich.edu/arts-sciences/advising](http://wmich.edu/arts-sciences/advising) or (269) 387-4366

**Business-chemistry advising:**

Paul Hildenbrand - Hayworth College of Business  
[paul.hildenbrand@wmich.edu](mailto:paul.hildenbrand@wmich.edu) or (269) 387-5085

**Geochemistry advising:**

Dr. Michelle Kominz - 1187 Rood Hall  
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