

# CHEMICAL SCIENCES

## REQUIREMENTS

**CORE CURRICULUM** The Core Curriculum is designed to foster critical thinking skills and introduce students to basic domains of thinking that transcend disciplines. The Core applies to all majors. Information on specific classes in the Core can be found at [marshall.edu/gened](http://marshall.edu/gened).

### CORE 1: CRITICAL THINKING

CODE	COURSE NAME	HRS	GRADE
FYS 100	First Year Seminar	● 3	_____
MTH 229	Critical Thinking Course	● 5	_____
_____	Critical Thinking Course	● 3	_____
<b>Additional University Requirements</b>			
_____	Writing Intensive	3	_____
_____	Writing Intensive	3	_____
_____	Multicultural or International	3	_____
CHM 491	Capstone (or CHM 490)	2	_____

### CORE 2:

CODE	COURSE NAME	HRS	GRADE
● ENG 101	Beginning Composition	● 3	_____
● ENG 201	Advanced Composition	● 3	_____
● CMM 103	Fund Speech-Communication	● 3	_____
● MTH 229	Calculus/Analytic Geom I (CT)	● ♦ 5	_____
● CHM 211 & 217	Principles of Chemistry I & Lab	● ♦ 5	_____
_____	Core II Humanities	● 3	_____
_____	Core II Social Science	● 3	_____
_____	Core II Fine Arts	● 3	_____

## MAJOR-SPECIFIC

All Chemical Sciences majors are required to take the following courses:

CODE	COURSE NAME	HRS	GRADE	CODE	COURSE NAME	HRS	GRADE
● CHM 211	Principles of Chemistry I	♦ 3	_____	PHY 201	College Physics I	♦ 3	_____
● CHM 217	Principles of Chemistry I Lab	♦ 2	_____	● PHY 202	College Physics I Lab	♦ 1	_____
● CHM 212	Principles of Chemistry II	♦ 3	_____	PHY 203	College Physics II	♦ 3	_____
CHM 218	Principles of Chemistry II Lab	♦ 2	_____	● PHY 204	College Physics II Lab	♦ 1	_____
● CHM 355	Organic Chemistry I	♦ 3	_____	_____	Science or Math Elective	♦ 4	_____
CHM 356	Organic Chemistry II	♦ 3	_____	_____	Science or Math Elective	♦ 4	_____
CHM 361	Organic Chemistry II Lab	♦ 3	_____	_____	Science or Math Elective	♦ 4	_____
CHM 305	Research Methods Chemistry	♦ 1	_____	_____	Science or Math Elective	♦ 4	_____
CHM 357	Physical Chemistry: Quantum or	♦ 4	_____	_____	Free Elective	3	_____
or 358	Physical Chemistry: Thermo			_____	Free Elective	3	_____
● CHM 345	Intro to Analytical Chem	♦ 4	_____	_____	Free Elective	3	_____
● CHM 448	Adv. Inorganic	♦ 4	_____	_____	Free Elective	3	_____
CHM 491	Capstone Experience (or CHM 490)	♦ 2	_____	_____	Free Elective	3	_____
CHM 432	Seminar	♦ 0	_____	_____	Free Elective	3	_____
_____	300/400 CHM Elective	♦ 3	_____	_____	Free Elective	1	_____
				_____	Free Elective	1	_____

## MAJOR INFORMATION

- Students are required to know and track their degree requirements for graduation or for entrance to a professional school.
- In addition to the Core General Education requirements, the College of Science requires 3 hours of Calculus, and 40 hours of upper level credit.
- Coursework listed as "elective" may vary for each student. Students are encouraged to use elective hours toward a minor or toward prerequisites.
- Students are strongly encouraged to select courses that meet two or more Core or College requirements. For example, a writing intensive literature course could satisfy the Core II Humanities requirement as well as the University writing intensive requirement.
- Course offerings and course attributes are subject to change semesters. Please consult each semester's schedule of courses for availability and attributes.
- Math is based on an ACT Mathematics score of 27 or higher. Students with an ACT Mathematics score less than 27 will be placed in the appropriate prerequisite mathematics and science courses.
- Students interested in careers in technical sales, management, and marketing in the chemical industry are encouraged to take the following courses as electives: Economics 250, 253, Marketing 340, 440 or 442; Management 320.
- A Grade Point Average of 2.0 is required 1) overall, 2) at MU, 3) in all required Chemistry courses, 4) in all Chemistry courses, and 5) in all required Chemistry courses taken at MU.
- Double majors within the Department of Chemistry may include any majors other than the B.S., Major in Chemical Sciences.

● Area of Emphasis

♦ Major Requirement

■ College Requirement

● General Education Requirement

# CHEMICAL SCIENCES

This major in chemistry is intended for students needing a broadly based, flexible science background. Degrees offered by the Department of Chemistry provide a program of studies that allows the individual to: obtain high quality instruction in chemistry as a scientific discipline, obtain a sound background in preparation for advanced studies, meet the qualifications of professional chemists and accrediting agencies, or prepare for a professional career in medicine, dentistry, pharmacy, medical technology, engineering, nursing and other fields.

	FALL SEMESTER				SPRING SEMESTER			
	CODE	COURSE NAME	HRS	GRADE	CODE	COURSE NAME	HRS	GRADE
YEAR ONE	CHM 211	Principles of Chemistry I	3	_____	ENG 101	Beginning Composition	3	_____
	CHM 217	Principles of Chemistry I Lab	2	_____	CHM 212	Principles of Chemistry II	3	_____
	MTH 229	Calculus/Analytic Geom I (CT)	5	_____	CHM 218	Principles of Chemistry II Lab	2	_____
	FYS 100	First Year Sem Crit Thinking	3	_____	_____	Core I Critical Thinking	3	_____
	UNI 100	Freshman First Class	1	_____	_____	Science or Math Elective	4	_____
	<b>TOTAL HOURS</b>		<b>14</b>		<b>TOTAL HOURS</b>		<b>15</b>	
	Summer Term (optional):							
YEAR TWO	CHM 355	Organic Chemistry I	3	_____	CHM 356	Organic Chemistry II	3	_____
	PHY 201	College Physics I	3	_____	CHM 361	Organic Chemistry Lab	3	_____
	PHY 202	College Physics I Lab	1	_____	PHY 203	College Physics II	3	_____
	_____	Core II Social Science	3	_____	PHY 204	College Physics II Lab	1	_____
	ENG 201	Advanced Composition	3	_____	CMM 103	Fund Speech-Communication	3	_____
_____	Science or Math Elective	4	_____					
	<b>TOTAL HOURS</b>		<b>17</b>		<b>TOTAL HOURS</b>		<b>13</b>	
	Summer Term (optional):							
YEAR THREE		300/400 CHM Elective	3	_____	CHM 358	Physical Chemistry: Thermo or (CHM 357 in Fall)	4	_____
	CHM 305	Research Methods Chemistry	1	_____	_____	Science or Math Elective	4	_____
	_____	Core II Fine Arts	3	_____	_____	Core II Humanities	3	_____
	_____	Writing Intensive	3	_____	_____	Free Elective	3	_____
	_____	Free Elective	3	_____	_____	Free Elective	1	_____
	_____	Free Elective	3	_____				
	<b>TOTAL HOURS</b>		<b>16</b>		<b>TOTAL HOURS</b>		<b>15</b>	
	Summer Term (optional):							
YEAR FOUR	CHM 345	Intro to Analytical Chem	4	_____	CHM 432	Chemistry Seminar	0	_____
	CHM 491	Capstone Experience (or CHM 490)	2	_____	_____	Science or Math Elective	4	_____
	CHM 448	Adv. Inorganic	4	_____	_____	Multicultural or International	3	_____
	_____	Writing Intensive	3	_____	_____	Free Elective	3	_____
	_____	Free Elective	3	_____	_____	Free Elective	3	_____
	<b>TOTAL HOURS</b>		<b>16</b>		<b>TOTAL HOURS</b>		<b>14</b>	
	Summer Term (optional):							

Area of Emphasis

Major Requirement

College Requirement

General Education Requirement

Milestone Course: This is a key success marker for your major. See your advisor to discuss the importance of this course in your plan of study.