

# **Chemistry A.S. Degree Program at MCTC**

## **Recommended Semester Sequence Planning**

**Admission Requirements to Chemistry Major: Completion of CHEM 1020 or high school chemistry; completion of MATH 80 or placement into MATH 1110; Completion of READ 0200 or ESOL 0052 or equivalent or placement into READ 900; Completion of ENGL 0900 or ESOL 0051 or equivalent or placement into ENGL 1100.**

- The recommended semester-sequence shown in this document is based on admission to the program in Fall semester and with the assumption that you are ready for college level science and Math courses and that you are a full-time student. If not, you should be aware that you will need more than two years to complete the program and therefore, plan your program path accordingly.
- **Depending on your transfer needs and other interests, special electives that are not part of the 60-credit program include Biochemistry Lecture (CHEM 2610) and Lab (CHEM 2620); Forensic Science (CHEM 1145), Research Courses (Undergraduate Research Methods and Lab - CHEM 2722 and CHEM 2723).**
- Please be aware that certain courses are offered only once a year (Analytical Chemistry only in Fall and Biochemistry only in Spring). Therefore, plan your course sequence accordingly.
- **You need to ensure you have met the pre-requisites, before registering for any course.**
- *See the document “Can you graduate in Two Years?” We also recommend that you complete Self-evaluation forms A and B to plan your program path.*
- **Contact the designated Science Advisor [Sandra.Castro-pearson@minneapolis.edu](mailto:Sandra.Castro-pearson@minneapolis.edu) for more information.**
- If necessary, you may also contact the faculty member Rekha Ganaganur ([Rekha.Ganaganur@minneapolis.edu](mailto:Rekha.Ganaganur@minneapolis.edu)) for questions about specific courses or the program or transfer.

Depending on your future Career interests and transfer necessities, **the program provides two options for physics and math courses.** In **option-1**, you choose calculus courses and calculus-based higher Physics courses (Physics for Science and Engineering). In **option-2**, lower level Physics and Math courses are included.

**See the Full Curriculum Document for Further Details**

**Recommended Semester Sequence for OPTION-1:** If you are pursuing chemistry, pharmacy, engineering or other majors for four-year program that requires calculus and higher Physics courses:

The sequence shown here is recommended sequence. It might vary depending on in which semester you start the program, or which courses you may have already completed.

<b>Year-1: Fall</b>	<b>Year-1 Summer</b>	<b>Year-1: Spring</b>
Principles of Chemistry 1 ( <b>CHEM 1151</b> ) ( 5 Cr)	Plan to take a General Education Elective or a science course, to reduce your load in regular semesters; Or take a course needed for transfer to a four-year program which might not be part of the 2-year program at MCTC	Principles of Chemistry 2 ( <b>CHEM 1152</b> ) ( 5 Cr)
Calculus-I ( <b>MATH 1180</b> ) (5 Cr)		Calculus-2 (MATH 1190) (5 Cr)
College English ( <b>ENGL 1110</b> ) OR other General Education electives if you have already completed ENGL 1110 ( 3 Cr)		Regulatory Affairs and Quality Control ( <b>CHEM 2320 or also known as BIOT 2320</b> ) (meets ACS guidelines and industry standards) ( 4 Cr)
<b>Total 13 Cr</b>		<b>Total 14 Cr</b>

<b>Year-2: Fall</b>	<b>Year-2 Summer</b>	<b>Year-2: Spring</b>
Organic Chemistry-1 ( <b>CHEM 2204 lecture</b> ) ( 4 Cr)	Plan to take General Education Elective or science course, to reduce your load in regular semesters; Or take a course needed for transfer to a four-year program	Organic Chemistry-2 ( <b>CHEM 2205 lecture</b> ) ( 4 Cr)
Organic Chemistry-1 lab ( <b>CHEM 2224 lab</b> ) ( 2 Cr)		Organic Chemistry-2 ( <b>CHEM 2225 lab</b> ) ( 2 Cr)
Physics for Science and Engineering-1 ( <b>PHYS 1211</b> ) (should substitute for PHYS 1131) (6Cr)		Physics for Science and Engineering-2 ( <b>PHYS 1221</b> ) (should substitute for PHYS 1131) (6 Cr)
Analytical Chemistry and Instrumentation Lecture ( <b>CHEM 2410</b> ) ( <i>offered only in Fall</i> ) (3Cr)		General Education Electives ( 4 Cr)
Analytical Chemistry and Instrumentation Lab ( <b>CHEM 2420</b> ) ( <i>offered only in Fall</i> ) (2Cr)		
<b>Total 17 Cr</b>		<b>Total 16 Cr</b>

Depending on your transfer needs and other interests, special electives include Biochemistry Lecture (**CHEM 2610**) and Lab (**CHEM 2620**); Forensic Science (**CHEM 1145**), Undergraduate Research (**CHEM 2722** thesis-based, **CHEM 2723** lab-based starting Fall 11). See the Full Curriculum Document for Further Details.

**Recommended Semester Sequence for OPTION-2: If you are pursuing careers that do not require calculus or calculus-based higher Physics courses**

<b>Year-1: Fall</b>	<b>Year-1: Summer</b>	<b>Year-1: Spring</b>
Principles of Chemistry 1 <b>(CHEM 1151)</b> ( 5 Cr)	Plan to take a General Education Elective or a science course, to reduce your load in regular semesters; Or take a course needed for transfer to a four-year program which might not be part of the 2-year program at MCTC	Principles of Chemistry 2 (CHEM 1152) ( 5 Cr)
College Physics-1 ( <b>PHYS 1131</b> ) ( 5 cr) (if already completed PHYS 1211, no need to take this)		College Physics-2 ( <b>PHYS 1132</b> ) ( 5 Cr) (if already completed PHYS 1221, no need to take this)
College English ( <b>ENGL 1110</b> ) OR other Gen Ed if you have already completed ENGL 1110 ( 3 cr)		Regulatory Affairs and Quality Control ( <b>CHEM 2320 or also known as BIOT 2320</b> ) ( 4 Cr) (meets ACS guidelines and industry standards)
<b>Total 13 Cr</b>		<b>Total 14 Cr</b>

<b>Year-2: Fall</b>	<b>Year-2 Summer</b>	<b>Year-2: Spring</b>
Organic Chemistry-1 ( <b>CHEM 2204</b> lecture) ( 4 cr)	Plan to take a General Education Elective or a science course, to reduce your load in regular semesters; Or take a course needed for transfer to a four-year program which might not be part of the 2-year program at MCTC	Organic Chemistry-2 ( <b>CHEM 2205</b> lecture) ( 4 cr)
Organic Chemistry-1 lab (CHEM 2224 lab) ( 2 cr)		Organic Chemistry-2 ( <b>CHEM 2225</b> lab) ( 2 cr)
Analytical Chemistry and Instrumentation Lecture ( <b>CHEM 2410</b> ) ( <i>offered only in Fall</i> ) ( 3 Cr)		Calculus for Business and Social Sciences ( 4 Cr) (MATH 1170) (or any other MATH higher should substitute)
Analytical Chemistry and Instrumentation Lab ( <b>CHEM 2420</b> ) ( <i>offered only in Fall</i> ) ( 2 Cr)		General Education Elective or Chemistry Electives ( 6 Cr)
General Education Elective or Chemistry Electives ( 6) ( <b>or take it in summer</b> )		
<b>Total 17 Cr</b>		<b>Total 16 Cr</b>

Depending on your transfer needs and other interests, special electives include Biochemistry Lecture (CHEM 2610) and Lab (CHEM 2620); Forensic Science (CHEM 1145), Undergraduate Research (CHEM 2722 thesis-based, CHEM 2723 lab-based. See the Full Curriculum Document for Further Details.