

**SUGGESTED PROGRAM OF STUDY**  
**Bachelor of Science - Major in Chemistry<sup>1</sup>**  
**Engineering Concentration Track 3 - Materials and Instrumentation**  
with MATH 141 Placement APHY211/212 2018 bulletins

**First Year**

**Fall Semester**

CHEM 111	(General Chem. I) <sup>1</sup>	(4)___
MATH 141	(Calc. I)	(4)___
ENGL 101	(Composition) <sup>2</sup>	(3)___
BIOL 121	(Biology I)	(4)___
AFCI 101	(Critical Inquiry)	(1)___

16 credit hours

**Spring Semester**

CHEM 112	(General Chem. II) <sup>1</sup>	(4)___
MATH 142	(Calc. II)	(4)___
ENGL 102	(Comp. and Lit.) <sup>2</sup>	(3)___
	History of Civ. (either HIST 101 or 102)	(3)___
	Humanities or Social Science <sup>3</sup>	(3)___

17 credit hours

**Second Year**

**Fall Semester**

CHEM 331	(Org Chem. I) <sup>1</sup>	(3)___
CHEM 331L	(Org. I Lab) <sup>1</sup>	(1)___
PHYS 211	(Essentials Physics I) <sup>4</sup>	(4)___
ENCP 200	(Statics) <sup>4</sup>	(3)___
	Communications (COMM 201 or 241)	(3)___

15 credit hours

**Spring Semester**

CHEM 332	(Org Chem. II) <sup>1</sup>	(3)___
CHEM 332L	(Org. Lab II) <sup>1</sup>	(1)___
PHYS 212	(Essentials Physics II) <sup>4</sup>	(4)___
CHEM 310	(Research Meth.) <sup>1</sup>	(1)___
MATH 241	(Calculus III) <sup>4</sup>	(4)___
	Amer. Gov't (HIST 201 or 202 or POLI 201)	(3)___

16 credit hours

**Summer**

ENCP 260 (Intro Mech Solids)<sup>4</sup> (3)\_\_\_

**Third Year**

**Fall Semester**

CHEM 321	(Quant. Analysis) <sup>1</sup>	(3)___
CHEM 321 L	(Quant. Anal. Lab) <sup>1</sup>	(1)___
CHEM 541	(Phys. Chem I) <sup>1</sup>	(3)___
CHEM 541 L	(Phys Chem I Lab) <sup>1</sup>	(1)___
ENCP 371	(Engr Materials) <sup>4</sup>	(3)___
	Humanities or Social Science <sup>3</sup>	(3/4)___

14/15 credit hours

**Spring Semester**

CHEM 311	(Intro Inorg. Chem.) <sup>1</sup>	(3)___
CHEM 311L	(Intro Inorg. Chm Lab)	(1)___
CHEM 542	(Phys. Chem II) <sup>1</sup>	(3)___
CHEM 542L	(Phys Chem. II Lab) <sup>1</sup>	(1)___
STAT 509	(Statistics) <sup>4</sup>	(3)___
	Second Language 1 <sup>5</sup>	(4)___

15 credit hours

**Fourth Year**

**Fall Semester**

CHEM 499	(Senior Res.) <sup>1,7</sup>	(2)___
CHEM 511	(Advanced Inorg. Chem.) <sup>1,6</sup>	(4)___
ENCP 361	(Inst. Meas. Stats.) <sup>4</sup>	(3)___
BIOL 541	(Prncpl. Biochemistry)	(4)___
	Second Language 2 <sup>5</sup>	(4)___

14-17 credit hours

**Spring Semester**

CHEM 499	(Senior Res) <sup>1,7</sup>	(1/2)___
CHEM 522	(Instrumental Analysis) <sup>1,6</sup>	(5)___
	Humanities or Social Science <sup>3</sup>	(3/4)___
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15-18 credit hours

- 1 - A grade of C or higher is required in all chemistry courses counting toward the degree. Students placing in Mathematics 108 or below will successfully complete these courses before enrolling in any chemistry course.
- 2 - Students must complete English 101/102 with a grade of C or better in order to fulfill general education requirements. Students must complete ENGL 102 with a grade of C or better before taking other English courses and for any course to count as Writing Intensive including CHEM 541L, 542L, and 511L
- 3 - At least three (3) credit hours of the degree must be in non-Western studies. See the bulletin for a complete list.
- 4 - PHYS 211/212, MATH 241, ENCP 200/260/371/377 are part of the Engineering Concentration which also meets the cognate.
- 5 - Two (2) semesters of the same language are required.
- 6 - The two 500 Level Chemistry Electives required for the Engineering Concentration are CHEM 511 Adv. Inorg. (4) in Fall and CHEM 522 Inst. Anal. (5) in Spring.
- 7 - Completion of a thesis and seminar on the research project are required for graduation.

green – Engineering Concentration  
purple – Chemistry Electives

brown – general education courses can be swapped with each other in order

(last updated May 2018)

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**Fall Semester**

CHEM 111	(General Chem. I) <sup>1</sup>	(4)___
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ENGL 101	(Composition) <sup>2</sup>	(3)___
BIOL 121	(Biology I)	(4)___
AFCI 101	(Critical Inquiry)	(1)___

16 credit hours

**Spring Semester**

CHEM 112	(General Chem. II) <sup>1</sup>	(4)___
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ENGL 102	(Comp. and Lit.) <sup>2</sup>	(3)___
	History of Civ. (either HIST 101 or 102)	(3)___
	Humanities or Social Science <sup>3</sup>	(3)___

17 credit hours

**Second Year**

**Fall Semester**

CHEM 331	(Org Chem. I) <sup>1</sup>	(3)___
CHEM 331L	(Org. I Lab) <sup>1</sup>	(1)___
PHYS 211	(Essentials Physics I) <sup>4</sup>	(4)___
ENCP 200	(Statics) <sup>4</sup>	(3)___
Communications	(COMM 201 or 241)	(3)___

15 credit hours

**Spring Semester**

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CHEM 332L	(Org. Lab II) <sup>1</sup>	(1)___
PHYS 212	(Essentials Physics II) <sup>4</sup>	(4)___
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CHEM 321 L	(Quant. Anal. Lab) <sup>1</sup>	(1)___
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CHEM 541 L	(Phys Chem I Lab) <sup>1</sup>	(1)___
BIOL 541	(Prncpl. Biochemistry)	(4)___
Humanities or Social Science <sup>3</sup>		(3/4)___

14/15 credit hours

**Spring Semester**

CHEM 311	(Intro Inorg. Chem.) <sup>1</sup>	(3)___
CHEM 311L	(Intro Inorg. Chm Lab)	(1)___
CHEM 542	(Phys. Chem II) <sup>1</sup>	(3)___
CHEM 542L	(Phys Chem. II Lab) <sup>1</sup>	(1)___
ENCP 260	(Intro Mech Solids) <sup>4</sup>	(3)___
STAT 509	(Statistics) <sup>4</sup>	(3)___

15 credit hours

**Summer**

Second Language 1<sup>5</sup> (4)\_\_\_

**Fourth Year**

**Fall Semester**

CHEM 499	(Senior Res.) <sup>1,7</sup>	(2)___
CHEM 511	(Advanced Inorg. Chem.) <sup>1,6</sup>	(4)___
ENCP 361	(Inst. Meas. Stats.) <sup>4</sup>	(3)___
ENCP 371	(Engr Materials) <sup>4</sup>	(3)___
Second Language 2 <sup>5</sup>		(4)___

14-17 credit hours

**Spring Semester**

CHEM 499	(Senior Res) <sup>1,7</sup>	(1/2)___
CHEM 522	(Instrumental Analysis) <sup>1,6</sup>	(5)___
Humanities or Social Science <sup>3</sup>		(3/4)___
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