BS Chemistry: STEM Education

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Chemistry Courses (40-42hrs)			
CHEM 1110/1110L	General Chemistry I & lab	4	
CHEM 1120/1120L	General Chemistry II & lab	4	
CHEM 2810	Scientific Communication	2	
CHEM 3010/3010L	Organic Chemistry I & lab (Fall semesters only)	4	
CHEM 3020/3020L	Organic Chemistry II & lab (Spring semesters only)	4	
CHEM 3210/3210L	Quantitative Analysis & lab (offered in the Fall and Summer)	4	
CHEM 3310	Inorganic Chemistry (Fall semesters only)	3	
CHEM 3710/3710L	Physical Chemistry & lab (Fall semesters only)	4	
CHEM 3820	Chemical Literature (Fall semesters only)	1	
CHEM 4510	Biochemistry	3	
CHEM 4830	Seminar	1	
CHEM 3720/3720L *or* CHEM 4230/4230L	Physical Chemistry II (Spring semesters only) *or* Instrumental Analysis (Fall semesters only)	4	
CHEM 4030/4030L *or* CHEM 4220/4220L *or* CHEM 4997r	Advanced Organic Chemistry *4hrs* (Fall semesters only) *or* Methods of Environmental Analysis *4hrs* (Spring even years semesters only) *or* Research *2hrs*	2 or 4	
Related Courses (33hrs)			
PHYS 1030/1030L *and* PHYS 1040/1040L or PHYS 2300/2300L *and* PHYS 2310/2310L	General Physics M&H/Lab *and* General Physics E&O/ Lab *or* Principles of Physics M&H/Lab *and* Principles of Physics E&M/Lab	8	
MATH 1710	Precalculus I	3	
MATH 1720	Precalulus II	3	
MATH 1950	Calculus I	4	
MATH 1960	Calculus II	4	
MATH 2100 *or* MATH 3100	Introduction to Statistics *or* Applied Statistics	3	
BIOL 1110/1110L	Principles of Biology I & lab	4	
BIOL 1120/1120L	Principles of Biology II & lab	4	
General Education (beyond what is above) (27hrs)			
ENGL 1010 and 1020	Rhetoric & Composition I and II	3, 3	
	Behavioral and Social Science	6	
	* Complete Gen Ed below with older or **newer (using Catalog 2014-15 or later)**		
Older Catalog	**OLDER** Humanities and Fine Arts, Cultures and Civilizations	6, 9	
Catalog 2014-or later	or **NEWER** Humanities and Fine Arts (*4 categories- 1 in STEM #)*, Non-Western	9, 3	
UTC STEM Courses (23hrs)			
STEM 1010	Step 1: Inquiry Approaches to Teaching Mathematics and Science	1	
STEM 1020	Step 2: Inquiry Based Lesson Design in Mathematics and Science	1	
STEM 2010	Knowing and Learning in Mathematics and Science	3	
STEM 2020	Classroom Interactions	3	
STEM 3010	Perspectives on Science and Math (# meets new Hum/FineArts:Thought/Values)	3	
STEM 3020	Research Methods in Science	3	
STEM 4010	Project-Based Instruction	3	
STEM 4020	Apprentice Teaching in Secondary Mathematics and Science	6	
	TOTAL	**120 or 122**	

This form should be used for planning purposes only. Consult Advisor and MyMocsDegree. Please refer to your year Catalog, for requirements, prerequisite,s and course descriptions.

B.S. Chemistry: STEM Education *Sample Schedule*

FRESHMAN YEAR										
ENGL 1010	Rhet & Comp 1	3		ENGL 1020	Rhet & Comp 2	3				
BIOL 1110	Principles of Bio 1	3		BIOL 1120	Principles of Bio 2	3				
BIOL 1110L	Principles of Bio 1 Lab	1		BIOL 1120L	Principles of Bio 2 Lab	1				
MATH 1710	Precalculus I	3		MATH 1720	Precalculus 2	3				
CHEM 1110	General Chemistry 1	3		CHEM 1120	General Chemistry 2	3				
CHEM 1110L	General Chem 1 Lab	1		CHEM 1120L	General Chem 2 Lab	1				
STEM 1010	Step 1	1		STEM 1020	Step 2	1				
Total		15		Total		15				
SOPHOMORE YEAR										
CHEM 3010	Organic Chem 1	3		CHEM 3020	Organic Chemistry 2	3		CHEM 3210	Quant.	3
CHEM 3010L	Organic Chem 1 Lab	1		CHEM 3020L	Organic 2 Lab	1		CHEM 3210L	Quant.Lab	1
MATH 1950	Calculus 1	4		PHYS 1040 PHYS 2310	Physics	3				
PHYS 1030 or PHYS 2300	Physics	3		PHYS 1040L or PHYS 2310L	Physics	1				
PHYS 1030L or PHYS 2300L	Physics	1		STEM 2020	Classroom Interactions	3				
STEM 2010	Know & Learn	3		MATH 1960	Calculus 2	4				
Total		15		Total		15		Total		4
JUNIOR YEAR										
CHEM 3310	Inorganic Chemistry	3		CHEM 4510	Biochemistry	3				
MATH 2100 or 3100	Intr. Stat. or Appl. Stat.	3		CHEM 2810	Scientific Communication	2				
CHEM 3710	Physical Chemistry 1	3		Chem elective	Select from list	4				
CHEM 3710L	Physical Chemistry 1 Lab	1		*FA & HUM	FA/HUM list	3				
CHEM 3820	Chemical Literature	1		STEM 3020	Research Methods	3				
STEM 3010	*counts FA/HUM	3		**(Praxis to be taken after CHEM 3710)						
Total		14		Total		15				
SENIOR YEAR										
CHEM elective	Select from list	2-4		STEM 4020	Apprentice Teaching	6				
* FA & HUM	FA/HUM list	3		* FA & HUM	FA/HUM list	3				
Beh/Social Sci	Select Beh/SS	3		*NonWestern	Non-Western list	3				
CHEM 4830	Seminar	1								
STEM 4010	PBI	3								
Beh/Social Sci	Beh/SS list	3								
Total	**(RETAKE PRAXIS if needed)	15-17		Total		12		**Total Hours 120-122**		

* Above for 2014-15 Catalog or later. Different General Education requirements for older Catalog.

** Complete CHEM 3710: Physical Chemistry before taking the Praxis