COMPUTATIONAL SCIENCE MINOR - CHEMISTRY (CHEMISTRY)

Core Courses for Chemistry Emphasis

Chemistry Major

Code	Title	Units
Lower-Division Requirements		
CHE 1052 and CHE 1052L	General Chemistry I (FE) and General Chemistry I Lab (FE)	5
CHE 1053 and CHE 1053L	General Chemistry II and General Chemistry II Lab	4
CSC 1043 and CSC 1043L	Introduction to Computer Programming and Introduction to Computer Programming Lab	3
MTH 1064 and MTH 1064L	Calculus I (FE) and Calculus I Lab (FE)	4
Upper-Division Requirements		
CSC 3002	UNIX and Python Scripting for Computational Science	2
CSC 3011	Machine Learning and Multivariate Modeling in R	1
or CSC 3031	Data Visualization and Communication with R	
Project		
Choose one (1) of the following:		3
CSC 4133	Service Learning in Computer Science	
HON 4098 and HON 4099	Honors Project I and Honors Project II	
MTH 4133	Service Learning in Mathematics	
Chemistry Major - Required Courses		
CHE 2013	Analytical Chemistry	3
CHE 3025 and CHE 3025L	Physical Chemistry I and Physical Chemistry I Lab	4
CSC 3022	Data Management for Computational Science	2
MTH 3063	Calculus Based Statistics with R	3
or MTH 3083	Mathematical Probability and Statistics	
Total Units		**34**

Computer Science Major

Code	Title	Units
Lower-Division Requirements		
CHE 1052 and CHE 1052L	General Chemistry I (FE) and General Chemistry I Lab (FE)	5
CHE 1053 and CHE 1053L	General Chemistry II and General Chemistry II Lab	4
CSC 1043 and CSC 1043L	Introduction to Computer Programming and Introduction to Computer Programming Lab	3
MTH 1064 and MTH 1064L	Calculus I (FE) and Calculus I Lab (FE)	4
Upper-Division Requirements		
CSC 3002	UNIX and Python Scripting for Computational Science	2
CSC 3011	Machine Learning and Multivariate Modeling in R	1
or CSC 3031	Data Visualization and Communication with R	
Project		
Choose one (1) of the following:		3
CSC 4133	Service Learning in Computer Science	
HON 4098 and HON 4099	Honors Project I and Honors Project II	
MTH 4133	Service Learning in Mathematics	
Computer Science Major - Required Courses		
ISS 4014	Data Base Systems and Web Integration	4
MTH 3063	Calculus Based Statistics with R	3
or MTH 3083	Mathematical Probability and Statistics	
Total Units		**29**

Mathematics Majors

Code	Title	Units
Lower-Division Requirements		
CHE 1052 and CHE 1052L	General Chemistry I (FE) and General Chemistry I Lab (FE)	5
CHE 1053 and CHE 1053L	General Chemistry II and General Chemistry II Lab	4
CSC 1043 and CSC 1043L	Introduction to Computer Programming and Introduction to Computer Programming Lab	3
MTH 1064 and MTH 1064L	Calculus I (FE) and Calculus I Lab (FE)	4
Upper-Division Requirements		
CSC 3002	UNIX and Python Scripting for Computational Science	2
CSC 3011	Machine Learning and Multivariate Modeling in R	1
or CSC 3031	Data Visualization and Communication with R	
Project		
Choose one (1) of the following:		3
CSC 4133	Service Learning in Computer Science	
HON 4098 and HON 4099	Honors Project I and Honors Project II	
MTH 4133	Service Learning in Mathematics	
Mathematics Major - Required Courses		
CHE 2013	Analytical Chemistry	3
CHE 3025 and CHE 3025L	Physical Chemistry I and Physical Chemistry I Lab	4
CSC 3022	Data Management for Computational Science	2
MTH 3083	Mathematical Probability and Statistics	3
Total Units		**34**