

COMPUTATIONAL SCIENCE MINOR - CHEMISTRY (MATHEMATICS AND COMPUTER SCIENCE)

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 or CSC 3031	Machine Learning and Multivariate Modeling in R Data Visualization and Communication with R	1
Project		
Choose at least three (3) units from 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 or MTH 3083	Calculus Based Statistics with R Mathematical Probability and Statistics	3
Total Units		34

Computer Science 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 or CSC 3031	Machine Learning and Multivariate Modeling in R Data Visualization and Communication with R	1
Project		
Choose at least three (3) units from 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 Majors - Required Courses		
ISS 4014	Data Base Systems and Web Integration	4
MTH 3063 or MTH 3083	Calculus Based Statistics with R Mathematical Probability and Statistics	3
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 or CSC 3031	Machine Learning and Multivariate Modeling in R Data Visualization and Communication with R	1
Project		
Choose at least three (3) units from 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 Majors - 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