

## Sample Plan and Course Flow Chart Template – Chem-Materials

Year 1	Semester 1 (14 Units)	CHEM 02/02H General Chemistry I (4 units)	SPARK Seminar (4 units)	MATH 21 Calculus I for Physical Sciences & Engineering (4 units)	CSE 005/020 Computer Science Requirement (2 units)	
	Semester 2 (16 Units)	CHEM 10 General Chemistry II (4 units)	WRI 10 College Reading & Composition (4 units)	MATH 22 Calculus II for Physical Sciences & Engineering (4 units)	PHYS 08/08H & 08L Introductory Physics I & Lab (4 units)	
Year 2	Semester 3 (16 Units)	CHEM 08/08H & 08L Organic Chemistry I (4 units)	Approaches to Knowledge Area B (4 units)	MATH 023 Vector Calculus (4 units)	PHYS 09/09H & 09L Introductory Physics II & Lab (4 units)	
	Semester 4 (15 Units)	CHEM 100 Organic Synthesis and Mechanism (3 units)	Approaches to Knowledge Area B (4 units)	MATH 024 Linear Algebra & Differential Equations (4 units)	MATH 032 Probability and Statistics (4 units)	
Year 3	Semester 5 (15 Units)	CHEM 101L Advanced Synthetic Lab (2 units)	CHEM 112 Quantum Chemistry and Spectroscopy (4 units)	ENGR 45 Introduction to Materials (4 units)	BIO 01 & 01L Contemporary Biology and Lab (5 units)	
	Semester 6 (14 Units)	CHEM 113 Chemical Thermodynamics and Kinetics (4 units)	CHEM 153 Physical Chemistry Lab (2 units) <b>*Writing in Discipline</b>	Free Elective (4 units)	Approaches to Knowledge Area B (4 units)	
Year 4	Semester 7 (16 Units)	CHEM 115 Instrumental Analysis (3 units)	CHEM 111/BIO 101 Biochemistry I (4 units) <b>*Crossroads Course</b>	CHEM 120 Inorganic Chemistry (3 units)	CHEM 155 Instrumental Lab (2 units)	UD Materials Science Emphasis Elective (4 units)
	Semester 8 (15 Units)	CHEM 150 Inorganic Lab (2 units)	CHEM 194 Ethics and Communications (1 unit) <b>*Integrative Culminating Experience</b>	UD In-Depth Emphasis Elective (4 units)	Free Elective (4 units)	Free Elective (4 units)

Major Requirement Only  
 General Education Requirement Only  
 Major Requirement and General Education Requirement Free  
 Elective units Meets Badge

- This sample plan demonstrates the recommended sequencing and timing of the required and elective components within the major.
- In many cases, a student's academic background will require variations in the timing of the coursework listed in the plan.
- All students are expected to work with their academic advisor to find their best pathway through the degree requirements of their chosen program.