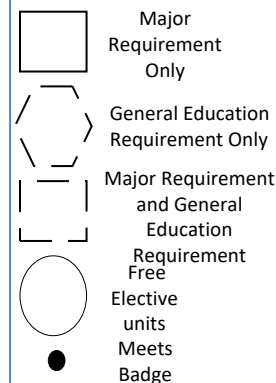


## Sample Plan and Course Flow Chart Template – Chem-Materials

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 Introductory Physics I (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 Introductory Physics II (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 (18 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 Contemporary Biology (4 units) <b>*Lab recommended, not required</b>	Free Elective (4 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)



- 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.