

# Cleveland State University

## Degree Map

### Bachelor of Chemical Engineering

SEMESTER 1	CREDITS		SEMESTER 2	CREDITS
ENG 100 or ENG 101 English I	3		ESC 102 Technical Writing, or	
MTH 181 Calculus I	4		ENG 102 English II	3
CHM 261 General Chemistry I	3		MTH 182 Calculus II	4
CHM 266 General Chemistry Laboratory I	1		PHY 241 University Physics I	5
ESC 120 Intr. to Engineering Design	2		CHM 262 General Chemistry II	3
ESC 100 New Student Orientation	1		CHM 267 General Chemistry Laboratory II	1
Total Hours	14		Total Hours	16
SEMESTER 3	CREDITS		SEMESTER 4	CREDITS
PHY 242 University Physics II	5		CHE 300 Chemical Engineering Principles	4
ESC 152 Programming with MATLAB	3		General Education Elective	3
			ESC 301 Fluid Mechanics	3
MTH 283 Multivariable Calculus for Eng, or			ESC 350 Linear Algebra for Engineers	3
MTH 281 Multivariable Calculus	2 or 4		ESC 270 Materials Science	3
ESC 250 Differential Equations for Engrs.	3		Engineering Science Elective	
ESC 321 Thermodynamics 1	3		ESC 201, ESC 310, or ESC 315	3
Total Hours	16		Total Hours	19
SEMESTER 5	CREDITS		SEMESTER 6	CREDITS
CHE 302 Chemical Engr Thermodynamics	4		CHE 404 Chemical Reactor Design (Writing)	4
CHE 306 Transport Phenomena	4		CHE 408 Separation Processes	4
CHE 307 Chemical Engineering			CHM 322 Physical Chemistry II	3
Methods (Writing)	3		PHL 215 Engineering Ethics (Writing, A&H)	3
CHM 331 Organic Chemistry I	3		ESC 282 Engineering Economy (SS)	3
CHM 336 Organic Chemistry Lab I	1			
Total Hours	15		Total Hours	17
SEMESTER 7	CREDITS		SEMESTER 8	CREDITS
CHE 430 Process Control	4		CHE 420 Chemical Engineering Capstone	
CHE 440 Process Design I (Writing)	3		Laboratory (Writing)	4
CBE Senior Elective	3		CHE 441 Process Design II (Writing)	3
Advanced Science Elective	3		CBE Senior Elective	3
[See Department/Program List]			General Education Elective (A&H, non-US) **	3
General Education Elective (AAE)	3		General Education Elective (USD)	3
Total Hours	16		Total Hours	16

**Minimum Total Hours Required for the Degree**

**128-129**

**Residency Requirements**

**42**