

Cleveland State University
Washkewicz College of Engineering
Bachelor of Chemical Engineering (CHE)
Fall 2022

CHE Degree Map for students immediately eligible for College Writing I, General Chemistry I, and Calculus I

First Year								
Fall Semester	Credits	Major	Gen. Ed.	Spring Semester	Credits	Major	Gen. Ed.	
ENG 100 Intensive Writing or ENG 101 Writing I	3		W/C	ESC 102 Technical Writing & Prof. Comm.	3	X	W/C	
MTH 181 Calculus I	4	X	M	OR ENG 102 College Writing II				
CHM 261 General Chemistry I	3	X	NS	MTH 182 Calculus II	4	X	M	
CHM 266 General Chemistry Lab I	1	X	NS&LAB	PHY 241 University Physics	5	X	NS	
ESC 120 Introduction to Engineering Design	2	X		CHM 262 General Chemistry II	3	X	NS	
ESC 100 New Student Orientation	1	X	Intro	CHM 267 General Chemistry Lab II	1	X	NS	
Semester Total	14			Semester Total	16			

Second Year								
Fall Semester	Credits	Major	Gen. Ed.	Spring Semester	Credits	Major	Gen. Ed.	
PHY 242 University Physics II	5	X	NS	CHE 300 Chemical Engineering Principles	4	X		
ESC 130 Engineering Co-Op Orientation*	1			ESC 301 Fluid Mechanics	3	X		
ESC 151 C Programming	3	X		ESC 310 Engineering Statistics & Probability	3	X		
OR ESC 152 Programming with MATLAB				ESC 350 Linear Algebra for Engineers	3	X		
ESC 250 Differential Equations for Engineers	3	X		MTH 283 Multivariable Calculus for Engineers	2	X		
ESC 270 Materials Science & Engineering	3	X		OR MTH 281 Multivariable Calculus	4			
ESC 321 Engineering Thermodynamics I	3	X		General Education Elective**	3		A&H	
Semester Total	18			Semester Total	18 or 20			

Third Year								
Fall Semester	Credits	Major	Gen. Ed.	Spring Semester	Credits	Major	Gen. Ed.	
CHE 302 Chemical Engineering Thermodynamics	4	X		CHE 404 Chemical Reactor Design	4	X	WAC	
CHE 306 Transport Phenomena	4	X		CHE 408 Separation Processes	4	X		
CHE 307 Chemical Engineering Methods	3	X	WAC	PHL 215 Engineering Ethics OR	3	X	WAC & A&H	
CHM 331 Organic Chemistry I	3	X	NS	PHL 213H Environmental Ethics-Honors				
CHM 336 Organic Chemistry Lab I	1	X	NS	CHM 322 Physical Chemistry II	3	X	NS	
				ESC 282 Engineering Economy	3	X	SS	
Semester Total	15			Semester Total	17			

Fourth Year								
Fall Semester	Credits	Major	Gen. Ed.	Spring Semester	Credits	Major	Gen. Ed.	
CHE 430 Process Control	4	X		CHE 420 Senior Chemical Engineering Lab	4	X		
CHE 440 Process Design I	3	X	CAP&WAC	CHE 441 Process Design II	3	X		
CHE Senior Elective	3	X		CHE Senior Elective	3	X		
Adv. Science Elective (See Dept/Program List)	3	X		General Education Elective**	3		SS	
General Education Elective	3		AA DIV	General Education Elective	3		US DIV	
Semester Total	16			Semester Total	16			

Degree Total Hours: 129 or 130 with ESC 130 (+2 with MTH 281 Multivariable Calculus)

Assumption: University Requirement of Foreign Language has been met by either successfully completing two (2) years of the same language in high school; or two (2) semesters of the same language in college; or passing CSU's language placement test in reading, writing, and speaking of a second language other than English.

Suggested if room in schedule (not required, does not count towards degree): MCE 180 & 181 Computer Aided Engineering I & II and IST 203 Software Tools.

College/Program Notes:

The plan above is a suggested guide to ensure that all General Education, College, University, and Major requirements are met within 4 years of study. Students may deviate from the suggested placement of General Education courses, although the M and W/C requirements should be completed during the first year of study. General Electives ensure that a student accumulates the minimum credit hour totals needed for graduation. Students must have a **minimum of 129 total credit hours**, of which a **minimum of 42 credit hours** must be upper division (300 or 400-level courses). Depending upon other elective choices made, students may not need as many general electives as indicated above or may need additional electives. For information about acquiring a Math Minor by substituting only one (1) ESC Math course, visit [CHE Math Minor](http://CHE.Math.Minor) or email: jmpt.engr.info@csuohio.edu to request guidance.

University Notes:

General Education Key + Notes	
INTRO = Introduction to University Life Requirement (one course)	SS = Social Sciences Requirement (2 courses, one of which must be focused outside the US)
W/C = Writing/Composition Requirement (two courses; C or better required)	A&H = Arts & Humanities Requirement (2 courses, one must be focused outside the US)
M = Mathematics Requirement (minimum two courses required; each C or better)	DIV = Social Diversity Requirement (2 courses; one US Diversity and one African American Experience)
NS = Natural Sciences (minimum two courses, one of which must have a lab – NS&LAB)	WAC/SPAC = Writing/Speaking Across the Curriculum Requirement (3 courses, one in the major)
ESC 100 = waived for transfer students enrolling with 60 credit hours or more	CAP = Capstone Requirement
* Introduction to Co-op Orientation is highly recommended, yet not required	** of the SS and A&H courses focused outside the US, one must be focused on Africa, Latin America, Asia or the Middle East (ALAAME)

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