

# CHEMICAL ENGINEERING - Catalog Year 2026

Total Credits = 120-125

## Freshman Year, Fall Semester

Course Code	Description	Cr	Grade
EGR 101	Intro. to Eng. Design & Innov. (A4)	2	
MTH 141 +	Calculus I (A1, B3)	4	
CHM 101	General Chemistry Lec I (A1)	3	
CHM 102	General Chemistry I Lab	1	
PHY 203	Elementary Physics I (A1)	3	
PHY 273	Elementary Physics Lab I (A1)	1	

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## Freshman Year, Spring Semester

Course Code	Description	Cr	Grade
EGR 106	Matlab for Engineering Applications (A4)	2	
MTH 142 +	Calculus II (A1, B3)	4	
CHM 112 +	General Chemistry II Lec	3	
CHM 114	General Chemistry II Lab	1	
PHY 204	Elementary Physics II (A1)	3	
PHY 274	Elementary Physics Lab II (A1)	1	
ECN 201	Principles of Microeconomics (A2)	3	

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## Sophomore Year, Fall Semester

Course Code	Description	Cr	Grade
CHE 212	Chemical Process Calculations	3	
CHM 227 +	Organic Chemistry Lec I	3	
MTH 243 +	Calculus for Functions of Several Vars (A1, B3)	3	
	General Education Outcome(s)1	3	

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## Sophomore Year, Spring Semester

Course Code	Description	Cr	Grade
CHE 213 +	Chemical Engineering Thermodynamics I	3	
CHE 232	Materials Science and Engineering	3	
CHE 272 +	Intro to Chemical Engineering Calculations	3	
CHM 228 + or CMB 311	Organic Chemistry Lec II or Introductory Biochemistry	3	
MTH 244	Differential Equations	3	

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## Junior Year, Fall Semester

Course Code	Description	Cr	Grade
CHE 314 +	Chemical Engineering Thermodynamics II	3	
CHE 347	Transfer Operations I	3	
CHM 335	Physical Chemistry Lab	2	
CHM 431 +	Physical Chemistry I	3	
	Approved Mathematics Elective2	3	
	General Education Outcome(s)1	3	

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## Junior Year, Spring Semester

Course Code	Description	Cr	Grade
CHE 348	Transfer Operations II	3	
CHE 364 +	Chemical Kinetics and Reactor Design	3	
CHM 432 + or Science Elective	Physical Chemistry II or Science Elective3	3	
CHE 445	Chemical Engineering Lab I [capstone]	2	
	General Education Outcome(s)1	3	

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## Senior Year, Fall Semester

Course Code	Description	Cr	Grade
CHE 425	Process Dynamics and Control	3	
CHE 428	Professional Experience	1	
CHE 446	Chemical Engineering Lab II [capstone]	2	
CHE 449	Transfer Operations III	3	
CHE 451	Plant Design and Economics I [capstone]	3	
	Professional Elective4	3	
	General Education Outcome(s)1	3	

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## Senior Year, Spring Semester

Course Code	Description	Cr	Grade
CHE 452	Plant Design and Economics II [capstone] (D1, C2)	3	
	General Education Outcome(s)1	3	
	General Education Outcome(s)1	3	
	Professional Elective4	3	
	Professional Elective4	3	
	Professional Elective4	3	

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### Notes:

+ Course pre-requisites include grade requirements in previous coursework, see catalog or eCampus course description for details.

1) General Education Outcomes (A1-D1): if all outcomes are satisfied in fewer spaces than provided, you must take a course(s) of your choice (Free Elective) to ensure you have earned at least 120 credits as required to earn a BS degree. A complete detailing of these requirements are listed in the college's curriculum requirements section of this catalog.

2) Mathematics Elective Requirement: MTH 215 or any 300-, 400-, or 500-level MTH course except MTH 381.

3) CHM 432 or Science Elective: BIO 341, 352, 437; BPS 312, 446; CMB 311, 320, 341, 352, 421, 437, 464, 482; CHM 427, 521; PHY 540

4) Professional Elective Requirements: At least half of the professional electives are to be 400-level or higher CHE coursework taken at URI. A maximum of 6 credits in CHE 491 and 492; other research credits may be applied instead with approved petition within this 6 credit limit. The remaining courses are to be 300-level or higher in natural science (AFS, AVS, BES, BIO, CHM, CMB, EVS, GEO, NEU, NRS, PLS, PHY, SAF), 400-level or higher in engineering (BME, CHE, CVE, EGR, ELE, ISE, MCE, OCE), or 400-level or higher in MTH, or 300-level or higher in BPS. In addition EGR 325, EGR 326, NUE 391, and NUE 392 are approved options.

EGR101 is intended for and required of all first-year engineering students. Course substitution is considered only on an exception basis for transfer students with 24 or more earned credits, or for students with unique circumstances, and requires prior approval of the Assistant Dean for Undergraduate Affairs.