CHEMICAL ENGINEERING - PHARM TRACK (GIEP) - CLASS OF 2021

Freshman Year Fall Semester

Course Code	Description	Cr	
CHM 101	General Chemistry Lec I (A1)	3	
CHM 102	General Chemistry I Lab	1	
EGR 105	Foundations of Engineering I (A4)	1	
MTH 141	Intro Calculus w/ Analytical Geo (A1, B3)	4	
PHY 203	Elementary Physics I (A1)	3	
PHY 273	Elementary Physics Lab I (A1)	1	
GER 111	Intensive Beginning German I	4	
		17	

Freshman Year Spring Semester

Course Code	Description	Cr	
BIO 101	Principles of Biology I (A1)	3	
BIO 103	Principles of Biology I Lab (A1)	1	
CHM 112	General Chemistry II Lec	3	
CHM 114	General Chemistry II Lab	1	
EGR 106	Foundations of Engineering II (A4)	2	
MTH 142	Intermed Calc with Analytic Geom (B3)	4	
GER 112	Intensive Beginning German II	4	
		18	

Sophomore Year Fall Semester

Course Code	Description	Cr	
CHE 212	Chemical Process Calculations	3	
CHM227	Organic Chemistry Lec I	3	
ECN 201	Principles of Microeconomics (A2)	3	
MTH 243	Calculus for Funcs. of Sev. Vars. (A1, B3)	3	
CMB 211	Intro Microbiology	4	
GER 113	Intensive Intermediate German I	4	
		20	

Sophomore Year Spring Semester

Course Code	Description	Cr	
CMB 311 ***or*** BIO 341	Intro Biochemistry ***or*** Cell Biology	3	
CHE 232	Materials Science and Engineering	3	
CHE 272	Intro to Chemical Engineering Calculations	3	
CHE 313	Chemical Engineering Themodynamics I	3	
MTH 244	Differential Equations	3	
GER 114	Intensive Intermediate German II	4	
		19	

Junior Year Fall Semester

Course Code	Description	Cr	
CMB 311 or BIO 341	Intro Biochemistry or Cell Biology	3	
BPS 301	Dosage Forms I	2	
BPS 303	Dosage Forms II	2	
BPS 305	Dosage Forms III	2	
CHE 314	Chemical Engineering Thermodynamics II	3	
CHE 347	Transfer Operations I	3	
GER 205	Conversation and Composition	3	
		18	

Junior Year Spring Semester

Course Code	Description	Cr	
BPS 425	Current Good Manufacturing Processes	3	
CHE 348	Transfer Operations II	3	
CHE 364	Chemical Kinetics and Reactor Design	3	
PHY 204	Elementary Physics II (A1)	3	
PHY 274	Elementary Physics Lab II (A1)	1	
	General Education Outcome(s)*	3	
GER 206	Conversation and Composition	3	
		19	

Semester Abroad

Course Code	Description	Cr	
GER/EGR 411	Technical German/Professional Elective**	3	
GER 3XX		4	
GER 3XX or GER 4XX		3	
	General Education Outcome(s)*	3	
	General Education Outcome(s)*	3	
		16	

International Internship Semester

Course Code	Description	Cr	
GER 315-316	Language Study Abroad	3-6	
		3-6	

Senior Year Fall Semester

Course Code	Description	Cr	
CHE 345	Chemical Engineering Lab I	2	
CHE 425	Process Dynamics and Control	3	
CHE 428	Professional Experience	1	
CHE 449	Transfer Operations III	3	
CHE 451	Plant Design and Economics I	3	
	General Education Outcome(s)*	3	
GER 4XX		3	
		18	

Senior Year Spring Semester

Course Code	Description	Cr	
CHE 346	Chemical Engineering Lab II	2	
CHE 452	Plant Design and Economics II (D1, C2)	3	
	Approved Professional Elective**	3	
	Approved Track Elective***	3-4	
	General Education Outcome(s)*	3	
GER 4XX		3	
		17-18	

Specified Math, Science, and Engineering Courses

Introductory Engineering					
Sem	Course	Cr	Grade	QP	Note
	EGR 105 (A4)	1			
	EGR 106 (A4)	2			
		3			

Mathematics					
	MTH 141 (A1 & B3)	4			
	MTH 142 (B3)	4			
	MTH 243 (A1 & B3)	3			
	MTH 244	3			
		14			

Natural Sciences					
	BIO 101 (A1)	3			
	BIO 103 (A1)	1			
	BIO 341	3			
	CHM 101 (A1)	3			
	CHM 102	1			
	CHM 112	3			
	CHM 114	1			
	CHM 227	3			
	CMB 211	4			
	CMB 311	3			
	PHY 203 (A1)	3			
	PHY 273 (A1)	1			
	PHY 204 (A1)	3			
	PHY 274 (A1)	1			
		33			

Engineering Science and Design (Major)					
Sem	Course	Cr	Grade	QP	Note
	CHE 212	3			
	CHE 232 (332)	3			
	CHE 272	3			
	CHE 313	3			
	CHE 314	3			
	CHE 345 [capstone]	2			
	CHE 346 [capstone]	2			
	CHE 347	3			
	CHE 348	3			
	CHE 349	3			
	CHE 364 (464)	3			
	CHE 425	3			
	CHE 428 (328)	1			
	CHE 451 (351) [capstone]	3			
	CHE 452 (352) [capstone]	3			
		41			

**Professional Elective					
		3			
		3			
		6			

***Track Elective					
		3			

Pharmacy					
	BPS 301	2			
	BPS 303	2			
	BPS 305	2			
	BPS 425	3			

* **General Education Outcomes**: at least 40 credits must be completed. (A1-D1) must be met by at least three credits. A single course may satisfy one or two outcomes, and at least one course must be a "Grand Challenge". No more than twelve credits can be from the same course code except HPR (ie: only four 3-credit GER classes OR three 4-credit GER classes may be used to fulfill General Education Outcomes). General education courses may also by used to meet requirements of your major(s) or minor(s) when appropriate.

****Professional Elective:** Half of the Professional Electives are to be 400- level or higher CHE courses taken at URI. In addition EGR 325 and EGR 326 are permissible approved professional electives. The remaining courses are to be 300-level or higher 400-level or higher in engineering (BME, CHE, CPE, CVE, ELE, ISE, MCE, OCE), or 400-level or higher in MTH

*****Track Elective:** CHE 466, 548, 550, 574; BPS 503, 542; PHY 430, 545 . ***All professional and track electives require prior approval by CHE advisor.***

German Language Requirements				
GER 101, 102, & 111 will not count toward major requirements.				
Sem	**Course**	**Cr**	**Gr**	**QP**
	GER ____			
	GER ____			
	GER ____			
	GER ____			
	GER ____			
	GER ____			
	GER ____			
	GER ____			
	GER ____			
	GER ____			
	GER ____			
	GER 4___	3		
6 Credits in Literature, at least 3 at 400-level				
	GER ____	3		
	GER 4___	3		
		30		

General Education Outcome Audit		
	Course	Credit
Knowledge		
A1. STEM	CHM & PHY (see above)	11
A2. Social & Behavioral Sciences	ECN 201	3
A3. Humanities	GER 205/206 (suggested)	3
A4. Arts & Design	EGR 105 & 106	3
Competences		
B1. Write Effectively		
B2. Communicate Effectively		
B3. Mathematical, statistical, or computational stategies	MTH (see above)	11
B4. Information literacy		
Responsibilities		
C1. Civic knowledge & responsibilities		
C2. Global responsibilities	GER 205/206 (suggested)	3
C3. Diversity and Inclusion		
Inegrate & Apply		
D1. Ability to synthesize	CHE 452	3
Grand Challenge		
G. Check that at least one course of your 40 credits is an approved "G" course		
Total General Education Outcome Credits		40