CHEMICAL ENGINEERING - PHARM TRACK (FLAGSHIP TRACK A) - CLASS OF 2021

******Flagship students see http://web.uri.edu/chineseflagship/academics/ for curriculum requirements******

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	
CHN 111	Intensive Beginning Chinese 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	
CHN 112	Intensive Elementary Chinese II	4	
		18	

Summer Semester

CHN 113	Intensive Intermediate Chinese I	4
CHN 114	Intensive Intermediate Chinese II	4
		8

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	
	General Education Outcome(s)*	3	
CHN 215	Intensive Conversation and Comp. I	4	
		19	

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	
CHN 215	Intensive Conversation and Comp. II	4	
		19	

Junior Year Fall Semester

Course Code	Description	Cr	
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	
CMB 211	Intro Microbiology	4	
CHN 315	Intensive Adv.CHN for the Chinese Flag. I	4	
		20	

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	
CHN 316	Intensive Adv.CHN for the Chinese Flag. II	4	
		17	

Semester Abroad

Course Code	Description	Cr	
CHN 4XX		8	
	Approved Professional Elective***	3	
	General Education Outcome(s)*	3	
	General Education Outcome(s)*	3	
		17	

International Internship Semester

Course Code	Description	Cr	
CHN 497/498	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	
CMB 311 or BIO 341	Intro Biochemistry or Cell Biology	3	
EGR 413	Advanced Technical Chinese	4	
		19	

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	
CHN 4XX or EGR	professional elective**	3-4	
		17-19	

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	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] (D1 & C2)	3			
		41			

**Professional Elective					
		3			
		3			
		6			

***Track Elective					
		3-4			

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. 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.***

Chinese Language Requirements				
Sem	**Course**	**Cr**	**Gr**	**QP**
Six (6) credits in Chinese Literature and Civilization. At least 3 of these credits must be at the 400-level. Students in the Chinese Language Flagship Program may take CHN 315 and 316 or CHN 315H and 316H in lieu of the 6 credits at the 400-level and 6 credits in literature and civilization requirement.				
	CHN ___	3		
	CHN 4___	3		
18 Credits of CHN electives to reach 30 major credits				
	CHN ___	3		
	CHN ___	3		
	CHN ___	3		
	CHN ___	3		
	CHN ___	3		
	CHN ___	3		
Choose six (6) credits in Chinese/Asian History, Politics, Philosophy, or Arts from: HIS 171, 374; PHL 331; PSC 116*, 377; RLS 131; THE 382				
		3 or 4		
		3 or 4		
CHN 101, 102, and 111 will not count toward major requirements. At least 6 CHN credits must be at the 400-level.				
*** PSC 116 approved for general education credit**				

General Education Outcome Audit		
	Course	Credit
Knowledge		
A1. STEM	CHM & PHY (see above)	11
A2. Social & Behavioral Sciences	ECN 201	
A3. Humanities	CHN 205/206 (suggested)	3
A4. Arts & Design	EGR 105 & 106	3
Competences		
B1. Write Effectively		
B2. Communicate Effectively		
computational stategies	MTH (see above)	11
B4. Information literacy		
Responsibilities		
C1. Civic knowledge & responsibi		
C2. Global responsibilities	CHN 205/206 (suggested)	--
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