

## CHEMICAL ENGINEERING Research & Development Concentration

	Session	Course	Course Name	SH	P:Prerequisite (in general C or better); C:Corequisite
1 <sup>st</sup> Yr Fall	F	CHE 1101	Intro to Chem & Petr Engr	1	C:CH 1213; C:(MA 1323 or MA 1453)
	ALL	CH 1213	Chemistry I	3	ACT Math subscore 24 or P:MA 1313
	ALL	CH 1211	Invst In Chemistry I	1	C:CH 1213
	ALL	MA 1713	Calculus I	3	ACT Math subscore 26 or P:(MA 1323 or MA 1453)
	ALL	EN 1103	En Composition I	3	ACT English subscore 17 or P:EN 0103
	ALL		Social Science Elective	3	
	ALL		Humanities Elective	3	
<b>Total</b>				<b>17</b>	
1 <sup>st</sup> Yr Spring	Sp	CHE 2213	Chemical Eng Analysis	3	P:CH 1213; C:MA 1713
	ALL	CH 1223	Chemistry II	3	P:CH 1213
	ALL	CH 1221	Invst Chemistry II	1	P:CH 1211; C:CH 1223
	ALL	MA 1723	Calculus II	3	P:MA 1713
	ALL	PH 2213	Physics I	3	P:MA 1713
	ALL	EN 1113	En Composition II	3	P:(EN 1103, EN 1163, or EN 1183)
<b>Total</b>				<b>16</b>	
2 <sup>nd</sup> Yr Fall	F/Su	CHE 2114	Mass & Energy Balances	4	P:CH 1223; C:MA 1723
	Sp/Su	CHE 3203	Fluid Flow Op	3	P:PH 2213; C:CHE 2114; C:MA 1723
	ALL	MA 2733	Calculus III	3	P:MA 1723
	ALL	MA 3113	Intro Linear Algebra	3	P:MA 1723
	ALL		Humanities Elective	3	
<b>Total</b>				<b>16</b>	
2 <sup>nd</sup> Yr Spring	ALL	CHE 3113	Chem En Thermo I	3	P:CH 1223; P:PH 2213; C:CHE 2114; C:MA 2733
	ALL	IE 3913	Engr Economy I	3	P:MA 1713
	ALL	MA 2743	Calculus IV	3	P:MA 2733
	ALL	MA 3253	Diff Equations	3	C:MA 2743
	ALL		Fine Arts Elective	3	
<b>Total</b>				<b>15</b>	
3 <sup>rd</sup> Yr Fall	ALL	CHE 3123	Chem En Thermo II	3	P:MA 2743; P:CHE 2114; P:CHE 3113
	F/Su	CHE 3413	Eng Materials	3	P:CH 1223; P:PH 2213
	ALL	CH 4513	Organic Chemistry I	3	P:(CH 1223 or CH 1244)
	ALL	CH 4511	Org Chem Lab I	1	P:CH 1221; P:CH 1223; C:CH 4513
	F	MA 3353	Diff Equations II	3	P:MA 3253
	ALL		Social Science Elective	3	
<b>Total</b>				<b>16</b>	
3 <sup>rd</sup> Yr Spring	ALL	CH 4523	Organic Chemistry II	3	P:(CH 4513/6513 or CH 4554)
	Sp/Su	CHE 3213	Heat Transfer Op	3	P:MA 2743; P:(CHE 3203 or EM 3313); C:CHE 3113; C:MA 3253
	Sp	CHE 3222	Chem Eng Lab I	2	P:(CHE 3203 or EM 3313); C:CHE 3213
	F/Su	CHE 3223	Separation Processes	3	P:CHE 3203; C:CHE 3213; C:CHE 3123
	Sp	CHE 3331	Prof Develop Seminar	1	P:Chemical Engineering majors with Junior Standing
	ALL	GE 3513	Technical Writing	3	P:EN 1103; P:EN 1113; Junior Standing
<b>Total</b>				<b>15</b>	
4 <sup>th</sup> Yr Fall	F	CHE 3232	Chem Eng Lab II	2	P:CHE 3203; P:CHE 3213; P:CHE 3223
	F	CHE 4113	Chem Reactor Design	3	P:CHE 3123; P:MA 3253
	F	CHE 4134	Process Design	4	P:IE 3913; P:CHE 3123; P:CHE 3213; P:CHE 3223
	F/Sp		CHE or Chemistry Elective	3	
	Choose one	F	MA 4543	Intro Math Stat I	3
	ALL	IE 4613	Eng Statistics I	3	P:MA 1723
<b>Total</b>				<b>15</b>	
4 <sup>th</sup> Yr Spring	Sp	CHE 4223	Pro Instr & Con	3	P:CHE 4113; P:CHE 3223
	Sp	CHE 4233	Chemical Plant Design	3	P:CHE 4134; P:CHE 4113
	Sp	CHE 4633	Chemical Pro Safety	3	P:CHE 2114; P:CHE 3203; P:MA 1723
	Sp	CHE 4313	Transport Phenomena	3	P:CHE 3213; P:MA 3253; P:(CHE 3203 or EM 3313)
	ALL	PH 2223	Physics II (or approved substitute <sup>1</sup> )	3	P:PH 2213; P:MA 1723
	Sp	CH 4423	Quantum Mech & Spect	3	P:(PH 2213 or PH 1113); P:MA 1723; P:CH 1223
<b>Total</b>				<b>18</b>	

<sup>1</sup> Approved substitutes for PH 2223 are IE 4613, IE 4623, MA 4373, MA 4523, MA 4533, MA 4543, MA 4573 or CHE 4313