

# ENGINEERING PHYSICS

## CHEMICAL SYSTEMS CONCENTRATION

Information appearing in this guide is subject to change. Please talk with your departmental adviser about degree requirements on a regular basis.

### freshman year – fall

	hours
CHEM 170 <sup>H</sup> Chemistry for Chemical Sciences**	5
ENGL 101 Composition (or any KU Core GE 2.1)	3
MATH 125 <sup>H</sup> Calculus I	4
PHSX 150 Seminar in Phys., Astr., & Engineering Physics	.5
KU Core Electives* <sup>H</sup>	3
<b>TOTAL HOURS</b>	<b>15.5</b>

### freshman year – spring

CHEM 175 <sup>H</sup> Chemistry for Chemical Sciences II*	5
ENGL 102 <sup>H</sup> Critical Reading & Writing (or any KU Core GE 2.1)	3
MATH 126 <sup>H</sup> Calculus II	4
PHSX 211 General Physics I, and	4
PHSX 216 General Physics I Laboratory	1
-or-	
PHSX 213 General Physics I Honors	5
<b>TOTAL HOURS</b>	<b>17</b>

### sophomore year – fall

C&PE 121 Introduction to Computers in Engineering	3
C&PE 211 Material & Energy Balances	3
MATH 127 <sup>H</sup> Calculus III	4
MATH 290 <sup>H</sup> Elementary Linear Algebra	2
PHSX 212 General Physics II, and	3
PHSX 236 General Physics II Laboratory	1
-or-	
PHSX 214 General Physics II Honors	4
<b>TOTAL HOURS</b>	<b>16</b>

### sophomore year – spring

CHEM 330 <sup>H</sup> Organic Chemistry I	3
C&PE 221 Chemical Engineering Thermodynamics I	3
MATH 220 <sup>H</sup> Applied Differential Equations, or ...	
MATH 320 Elementary Differential Equations	3
PHSX 313 General Physics III	3
PHSX 316 Intermediate Physics Lab	1
KU Core Electives* <sup>H</sup>	3
<b>TOTAL HOURS</b>	<b>16</b>

### junior year – fall

	hours
CHEM 530 Introduction to Physical Chemistry	3
C&PE 511 Momentum Transfer	3
C&PE 512 Process Engineering Thermodynamics II	3
C&PE 522 Economic Appraisal of C&PE Projects	2
EPHX 521 Mechanics I	3
<b>TOTAL HOURS</b>	<b>14</b>

### junior year – spring

C&PE 521 Heat Transfer	3
C&PE 523 Mass Transfer	4
C&PE 524 Kinetics & Reactor Design	3
EPHX 536 Electronic Circuit Measurement & Design	4
KU Core Electives* <sup>H</sup>	3
<b>TOTAL HOURS</b>	<b>17</b>

### senior year – fall

C&PE 613 Chemical Engineering Design I	4
C&PE 615 Introduction to Process Dynamics & Control	3
C&PE 616 Chemical Engineering Lab I	3
EPHX 516 Physical Measurements	4
EPHX 531 Electricity & Magnetism	3
<b>TOTAL HOURS</b>	<b>17</b>

### senior year – spring

C&PE 623 Chemical Engineering Design II	2
EPHX 511 Introductory Quantum Mechanics	3
EPHX 601 Design of Physical and Electronic Systems	4
KU Core Electives* <sup>H</sup>	6
<b>TOTAL HOURS</b>	<b>15</b>

## ENGINEERING PHYSICS: CHEMICAL SYSTEMS KU CORE DISTRIBUTION



#### CRITICAL THINKING & QUANTITATIVE LITERACY

GE 1.1 CRITICAL THINKING: PHSX 211  
GE 1.2 QUANTITATIVE LITERACY: MATH 125



#### COMMUNICATION

GE 2.1 WRITTEN COMMUNICATION:  
MEET VIA KU CORE REQUIREMENTS  
GE 2.2 ORAL COMMUNICATION:  
MEET VIA KU CORE REQUIREMENTS



#### BREADTH OF KNOWLEDGE

GE 3H ARTS & HUMANITIES:  
1 COURSE FROM KU CORE LIST  
GE 3N NATURAL SCIENCES: CHEM 170  
GE 3S SOCIAL SCIENCES:  
MEET VIA KU CORE REQUIREMENTS



#### CULTURE & DIVERSITY

AE 4.1 DIVERSITY IN UNITED STATES:  
MEET VIA KU CORE REQUIREMENTS  
AE 4.2 GLOBAL AWARENESS:  
MEET VIA KU CORE REQUIREMENTS



#### SOCIAL RESPONSIBILITY & ETHICS

AE 5 ETHICS & SOCIAL RESPONSIBILITY:  
PHSX 216, 316 AND EPHX 516 (pending approval)



#### INTEGRATION & CREATIVITY

AE 6 CAPSTONE: PHSX / EPHX 601

ENGINEERING PHYSICS SPECIFIC GENERAL EDUCATION  
REQUIREMENTS: When not specified visit [kucore.ku.edu/courses](http://kucore.ku.edu/courses)  
for approved courses and activities.

### CURRICULUM NOTES

\* Students must ensure the electives they choose fulfill all remaining KU Core requirements.

\*\*CHEM130<sup>H</sup>/135<sup>H</sup> can be substituted for CHEM 170/175.

<sup>H</sup> Honors equivalent course is available.