

Nanomaterials Engineering Track for Chemical Engineering Curriculum  
(For Students Entering Fall of 2009)

Freshman Year/Fall Semester		Cr.	Freshman Year/Spring Semester		Cr.
___ 25.107	Intro to Engineering I	2	___ 25.108	Intro to Engineering II	2
___ 42.101	(Gen. Ed.) College Writing I+	3	___ 42.102	(Gen. Ed.) College Writing II+	3
___ 84.121	Chemistry I+	3	___ 84.122	Chemistry II+	3
___ 84.123	Chemistry I Lab	1	___ 84.124	Chemistry II Lab	1
___ 92.131	Calculus I*+	4	___ 92.132	Calculus II+	4
___ . . .	(Gen. Ed.) SS (Social Science)	<u>3</u>	___ 95.141	Physics I+	3
		<b>16</b>	___ 96.141	Physics I Lab	<u>1</u>
					<b>17</b>

Sophomore Year/Fall Semester		Cr.	Sophomore Year/Spring Semester		Cr.
___ 10.201	Material Balances	3	___ 10.202	Energy Balances & Intro to Thermodynamics	3
___ 10.205	Fundam. of Electricity	3	___ 84.205	Organic Chemistry Lab	1
___ 84.221	Organic Chemistry I <sup>1+</sup>	3	___ 84.222	Organic Chemistry II <sup>1+</sup>	3
___ 92.231	Calculus III+	4	___ 92.234/236	Differential Equations+	3
___ . . .	(Gen. Ed.) AH (Arts/Humanities)	<u>3</u>	___ 92.385	Applied Statistics	3
		<b>16</b>	___ 49.201/202	(Gen. Ed.)SS Economics I/II	<u>3</u>
					<b>16</b>

Junior Year/Fall Semester		Cr.	Junior Year/Spring Semester		Cr.
___ 10.303	Fluid Mechanics	3	___ 10.304	Heat Transfer	3
___ 10.311	Chem. Eng. Thermodynamics	3	___ 10.308	Intro to Material. Sci. & Eng	3
___ 10.315	Unit Operations Lab I	2	___ 10.310	Separation Proc. w/ Mass Transfer	3
___ 10.317	Appl. Eng. Prob. Solving/Matlab	3	___ 10.316	Unit Operations Lab II	2
___ 84.344	Physical Chemistry I <sup>2</sup>	3	___ 84.347	Physical Chemistry Lab	1
___ . . .	(Gen. Ed.) AH (Arts/Humanities)	<u>3</u>	___ 45.203/334	(Gen. Ed.) AH Ethics/Eng. Ethics	3
		<b>17</b>	___ . . .	(Gen. Ed.) SS (Social Science)	<u>3</u>
					<b>18</b>

Senior Year/Fall Semester		Cr.	Senior Year/Spring Semester		Cr.
___ 10.403	Chemical Reaction Engineering	3	___ 10.410	Plant Design	3
___ 10.409	Engineering Economics	3	___ 10. . .	Chem. Eng. Tech Elective <sup>4</sup>	3
___ 10.413	Process Dynamics & Control	3	___ 10. . .	Chem. Eng. Tech Elective <sup>4</sup>	3
___ 10.415	Processes & Controls Lab	2	___ . . .	Technical Elective <sup>3</sup>	3
___ 10.506	Colloidal Nanoscience & Nanoscale Eng.	3	___ . . .	Advanced Chemistry Elective	<u>3</u>
___ . . .	Chemical Eng. Technical Elective <sup>4</sup>	<u>3</u>			<b>15</b>
		<b>17</b>			

Total minimum credits: 132

**See reverse side for additional information.**

Refer to the yellow pages of the *Schedule of Classes* booklet for General Education requirements. The University General Education requirements must be satisfied. A General Education course that fulfills the Diversity requirement must be taken.

- <sup>(1)</sup> The listed co-requisite, 84.229 or 84.230, Organic Chemistry Lab, is not required for Chemical Engineering Majors. 84.205 is the required lab.
- <sup>(2)</sup> The listed co-requisite, 84.346, Physical Chemistry Lab, is not required for Chemical Engineering majors. 84.347 is the required lab.
- <sup>(3)</sup> Technical Electives and the Advanced Chemistry Elective should be chosen from an approved list. Consult with your advisor.
- <sup>(4)</sup> Two of the following courses must be taken: 10.523 Nanodevices and Electronic Materials, 10.524 Self-Assembly and Nanotechnology, 10.529 Advances in Nanotechnology and Green Chemistry, 10.541 Nanostructural Characterization by SEM, TEM and AFM.

\*Calculus I A and Calculus I B instead of Calculus I will be required for students that do not pass the Calculus Readiness Test.

+ Honors level courses may be taken instead