

Bridge to Nanoscale Science and Nanoscale Engineering degree plans

Year 1 Program

For students with AP Calc I credit

**for students without AP Calc I credit*

NENG - Bridge	
Fall Semester	Cred
CHE 130T,L - Introductory Chemistry	4
MAT 152 - Calculus II	4
PHY 201T,L - Physics I	4
ESC 110 – Intro to Engineering	3
Total	15

NSCI - Bridge	
Fall Semester	Cred
CHE 130T,L - Introductory Chemistry	4
MAT 152 - Calculus II	4
PHY 201 - Physics I	4
ETC 101 – Fundamentals of Eng. Technolog	3
Total	15-16

NENG - Bridge	
Fall Semester	Cred
CHE 130T,L - Introductory Chemistry	4
MAT 151 - Calculus I	4
Gen Ed	3 or 4
ESC 110 – Intro to Engineering	3
Total	14-15

NSCI - Bridge	
Fall Semester	Cred
CHE 130T,L - Introductory Chemistry	4
MAT 151 - Calculus I	4
Gen Ed	3 or 4
ETC 101 – Fundamentals of Eng. Technology	3
Total	15-16

Spring Semester	
	Cred
CHE 131T,L - Introductory Chemistry	4
MAT 260 – Ordinary Differential Equations	4
PHY 202T, L Physics II	4
Gen Ed.	3 or 4
Total	15-16

Spring Semester	
	Cred
CHE 131T,L - Introductory Chemistry	4
MAT 260 – Ordinary Differential Equations	4
PHY 202T, L Physics II	4
Gen Ed.	3 or 4
Total	15-16

Spring Semester	
	Cred
CHE 131T,L - Introductory Chemistry	4
MAT 152 - Calculus II	4
PHY 201T, L Physics I	4
Gen Ed.	3 or 4
Total	15-16

Spring Semester	
	Cred
CHE 131T,L - Introductory Chemistry	4
MAT 152 - Calculus II	4
PHY 201T, L Physics I	4
Gen Ed.	3 or 4
Total	15-16

Year 2 Program (years 2-4 are same for all students if either of year 1 plans are followed)

For students with AP Calc I credit

***for students without AP Calc I credit**

NENG - Bridge	
Fall Semester	Cred
PHY 203A - Physics IIIA	2
Design & Skills elective	3 or 4
MAT 253 - Calculus III	4
GE or Elective (if all GE have been completed)	4
Total	13-14
Spring Semester	Cred
PHY 203B - Physics IIIB	2
Design & Skills	3
MAT 280 - Linear Algebra	4
GE or Elective (if all GE have been completed)	3 or 4
Total	13-14

NSCI - Bridge	
Fall Semester	Cred
PHY 203A - Physics IIIA	2
BIOL 103 T&L OR Sci. and Tech. Skills elective	4 or 3
MAT 253 - Calculus III	4
GE or Elective (if all GE have been completed)	4
Total	13-14
Spring Semester	Cred
PHY 203B - IIIB	2
GE or Elective (if all GE have been completed)	3 or 4
MAT 280 - Linear Algebra	4
BIOL 104 T&L OR Sci. and Tech. Skills elective	4 or 3
Total	12-14

NENG - Bridge	
Fall Semester	Cred
PHY 203A - Physics IIIA	2
Design & Skills elective	3 or 4
MAT 260 - Ordinary Differential Equations	4
PHY 202T, L Physics II	4
Total	13-14
Spring Semester	Cred
PHY 203B - Physics IIIB	2
Design & Skills	3
MAT 253 - Calculus III	4
MAT 280 - Linear Algebra	4
GE or Elective (if all GE have been completed)	3 or 4
Total	16-17

NSCI - Bridge	
Fall Semester	Cred
PHY 203A - Physics IIIA	2
BIOL 103 T&L OR Sci. and Tech. Skills elective	4 or 3
MAT 260 - Ordinary Differential Equations	4
PHY 202T, L Physics II	4
Total	13-14
Spring Semester	Cred
PHY 203B - IIIB	2
MAT 253 - Calculus III	4
MAT 280 - Linear Algebra	4
BIOL 104 T&L OR Sci. and Tech. Skills elective	4 or 3
Total	14-15

Year 3 Program Albany

NENG Combined	
Fall Semester	Cred
NENG 301 -Thermo & Kinetics of Nanomaterials*	3
NENG 302 – Electronic, Optical and Magnetic Properties	3
NENG 303 – Mechanics of Nanomaterials	3
Gen. Ed./Elective	3
Unrestricted Elective	3
Total	15
Spring Semester	Cred
NENG 304 – Transport & Fluid Mechanics	3
NENG 4XX - Concentration	3
NENG/NSCI 3XX or 4XX – Topical Elective	3
NENG 390 Capstone I	3
Gen. Ed./Elective	3
Total	15

NSCI Combined**	
Fall Semester	Cred
NSCI 220 - Structure of Matter	3
NSCI 230 – Thermodynamics & Statistical Mechanics of Nanosystems*	3
NSCI 300 - Integrated NanoLaboratory I	3
NSCI 350 - Introduction to Quantum Theory for Nanoscale Systems	3
GE or Elective (if all GE have been completed)	3
Total	15
Spring Semester	Cred
NSCI 3XX or 4XX - Concentration Course	3
NSCI 305 - Integrated NanoLaboratory II	3
NSCI 360 - Nanoscale Molecular Materials and Soft Matter	3
NSCI 390 - Capstone I	3
NSCI 3XX or 4XX - Concentration Course	3
Total	15

N: * NENG 301 and NSCI 230 to be cross listed

Year 4 Program Albany

NENG Combined	
Fall Semester	Cred
NENG 405 – Nanomaterials Processing	4
NENG 406 – Fundamentals of Nanoelectronics	4
NENG 4XX - Concentration	3
NENG/NSCI 4XX – Topical Elective	3
NENG 490 – Capstone II	3
Total	17
Spring Semester	Cred
NENG 407 – Thin Film Characterization	4
NENG 408 – Industrial Nanomanufacturing	3
NENG 4XX - Concentration	3
NENG/NSCI 4XX – Topical Elective	3
NENG 492 – Capstone III	3
Total	16

NSCI Combined	
Fall Semester	Cred
NSCI 410 - Quantum Origins of Material Behavior	3
NSCI 490 or 491- Capstone II	3
NSCI 3XX or 4XX - Concentration Course	3
NSCI/NENG 4XX - Topical Elective Course	3
Unrestricted Elective	3 or 4
Total	15-16
Spring Semester	Cred
NSCI 4XX - Concentration Course	3
N SCI 492 or 493 - Capstone III	3
NSCI/NENG 4XX - Topical Elective Course	3
NSCI/NENG 4XX - Topical Elective Course	3
Unrestricted Elective	3 or 4
Total	15-16