

College of Science
Bachelor of Science in NANOSCIENCE
Major in NANOMEDICINE
For students graduating in calendar year 2020

I. Curriculum for Liberal Education (38 credit hours)

All courses used for the Curriculum for Liberal Education must be on the University's approved list.

Area 1 - Writing and Discourse (6 credit hours)

_____ 3__ _____ 3__

Area 2 - Ideas, Cultural Traditions, and Values (6 credit hours)

_____ 3__ _____ 3__

Area 3 - Society and Human Behavior (6 credit hours)

_____ 3__ _____ 3__

Area 4 - Scientific Reasoning and Discovery (8 credit hours)

PHYS 2205 General Physics*	3__	PHYS 2206 General Physics*	3__
PHYS 2215 General Physics Laboratory*	1__	PHYS 2216 General Physics Laboratory*	1__

Area 5 - Quantitative and Symbolic Reasoning (6 credit hours)

MATH 1025 Elementary Calculus*	3__	MATH 1026 Elementary Calculus*	3__
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Area 6 - Creativity and Aesthetic Experience (3 credit hours)

_____ 3__

Area 7 - Critical Issues in a Global Context (3 credit hours)

_____ 3__

II. Nanoscience Degree Core Requirements (35 credit hours)

FALL#		SPRING#	
NANO 1015 Introduction to Nanoscience*	3__	NANO 1016 Introduction to Nanoscience*	3__
NANO 2114 Nanoscience Research Seminar*	1__	NANO 2024 Quantum Physics of Nanostructures*	4__
NANO 3015 Nanoscale Synthesis, Fabrication, and Characterization*	4__	NANO 3016 Nanoscale Synthesis, Fabrication, and Characterization*	4__
NANO 3114 Professional Dissemination of Nanoscience Research*	1__	NANO 3124 Nanoscience and the Environment*	3__
NANO 4314 Nanomedicine*	4__		
	NANO 4994 Undergraduate Research**	8__	

III. Nanomedicine Major Requirements (26 credit hours)

FALL#		SPRING#	
CHEM 1035 General Chemistry*	3__	CHEM 1036 General Chemistry*	3__
CHEM 1045 General Chemistry Lab*	1__	CHEM 1046 General Chemistry Lab*	1__
CHEM 2535 Organic Chemistry	3__	CHEM 2536 Organic Chemistry	3__
CHEM 2545 Organic Chemistry Lab	1__	CHEM 2546 Organic Chemistry Lab	1__
BIOL 1105 Principles of Biology*	3__	BIOL 1106 Principles of Biology*	3__
BIOL 1115 Principles of Biology Laboratory*	1__	BIOL 1116 Principles of Biology Laboratory*	1__
BIOL 2124 Cell and Molecular Biology for Engineers*	2__		

IV. Restricted Electives (9 credit hours):

Pick 3 of the following courses.

BCHM 3114 Biochemistry for Biotechnology & the Life Sciences*	3	_____	BCHM/BIOL 4784 Applications in Molecular Life Science*	3	_____
BIOL 3404 Introductory Animal Physiology**	3	_____	BIOL 3774 Molecular Biology**	3	_____
BIOL 4664 Virology**	3	_____	BIOL 4674 Pathogenic Bacteriology**	3	_____
BIOL 4704 Immunology**	3	_____	BIOL 4874 Cancer Biology**	3	_____
BIOL 4884 Cell Biology**	3	_____	CHEM 4514 Green Chemistry*	3	_____
CHEM 4554 Drug Chemistry*	3	_____	NEUR 2025 Introduction to Neuroscience*	3	_____
NEUR 2026 Introduction to Neuroscience*	3	_____	NEUR 3914 Neuroscience of Drug Addiction*	3	_____
NEUR 4034 Diseases of the Nervous System*	3	_____	SYSB 2026 Introduction to Systems Biology*	3	_____
SYSB 3035 Systems Biology of Genes & Proteins*	4	_____	SYSB 3036 Systems Biology of Genes & Proteins*	4	_____
SYSB 3115 Network Dynamics & Cell Physiology*	4	_____	SYSB 3116 Network Dynamics & Cell Physiology*	4	_____

V. Free Electives (12 credit hours)

Prerequisites

Some courses on this checksheet have prerequisites. Students are required to double check course prerequisites and equivalents. Please see your advisor or consult the Undergraduate Course Catalog for more information.

Acceptable Substitutions

- BIOL 2124: BIOL 2104 Cell & Molecular Biology OR BIOL 2134 Cell Function Differentiation OR NEUR 3044 Cell Molecular Neuroscience
- CHEM 1035/1036: CHEM 1055/1056 General Chemistry for Majors
- CHEM 1045/1046: CHEM 1065/1066 General Chemistry Lab for Majors
- CHEM 2535/2536: CHEM 2565/2566 Principles of Organic Chemistry
- CHEM 2545/2546: CHEM 2555/2556 Organic Synthesis & Techniques Lab
- MATH 1025/1026: MATH 1225/1226 Calculus of a Single Variable
- NANO 2024: PHYS 3324 Modern Physics
- PHYS 2205/2215: PHYS 2305 Foundations of Physics I
- PHYS 2206/2216: PHYS 2306 Foundations of Physics I
- BIOL 1105/1115 CHEM 1035/1045/1036/1046, MATH 1025/1026, PHYS 2305/2306:
ISC 1105/1115, 1106/1116, 2105/2115, 2106/2116 Integrated Science I-II and Integrated Science Lab I-II

Foreign Language Requirement

Students who did not successfully complete at least two years of a single foreign, classical, or sign language during high school must successfully complete six semester hours of a single foreign, classical, or sign language at the college level. Courses taken to meet this requirement do not count toward the hours required for graduation. Please consult the Undergraduate Catalog for details.

Satisfactory Progress Towards Degree

Upon having attempted 72 credit hours, the student will have completed NANO 1015-1016, MATH 1025-1026, CHEM 1035-1036, CHEM 1045-1046, PHYS 2205-2206, PHYS 2215-2216, BIOL 1105, BIOL 1106, BIOL 1115, & BIOL 1116

Graduation Requirements

120 credit hours are required for graduation. These credits must include the courses required for the major (see above sections). To graduate, a student must have at least a 2.0 in-major GPA and overall GPA.

* *In Major GPA: Courses marked with * will be used for computing the "in major" GPA.*
 # *Fall/Spring Course Offerings: Please consult with your advisor to ensure the courses are offered in the semester you intend to take them.*
 ^ *Undergraduate Research: All 8 credits are not taken in one semester. They are often split among different semesters.*
 ° *BIOL 2124 is not an accepted prerequisite for BIOL courses that require BIOL 2134. Students wishing to take BIOL courses from the restricted electives list should take BIOL 2134. Please consult your advisor as to which course is right for you.*