

NANOSCIENCE MINOR CURRICULUM SEQUENCE

Table 1 provides a breakdown of courses that students may take to earn the minor in nanoscience. It has been constructed to show mandatory courses and optional courses that encourage students to learn about nanoscience from the perspectives of their STEM major and a discipline outside of their major.

Table 1. Proposed Minor Sequence:

		Course Number	Course Name	Pre/Co-requisite	Semester Fall	Semester Spring	Credit Hours
A	CORE REQUIREMENT	SCI 203	Introduction to Nanoscience	none	x	x	3
B	SELECT TWO courses outside of student's own major	PHY 202	Introductory Physics II	PHY 201	x	x	4
		PHY 204	Introductory Physics II (with Calculus)	PHY 203	x	x	4
		CHE 201	General Chemistry and Qualitative Analysis II	MAT 117		x	4
		BIO 105	Introduction to Biology I	none	x	x	4
		MES 130	Introduction to Environmental Science	None	x		3
C	SELECT TWO courses, with at least one course outside of student's own major	CSC 204	Computer Architecture, Systems and Organization	CSC 152	x		3
		PHY 211	Modern Physics I	PHY 220 PHY 330	x		3
		PHY 212	Modern Physics II	PHY 220-221 PHY 330-331		x	3
		PHY 526	Topics in Contemporary Physics	Consent of Mentor			3
		CHE 401	Physical Chemistry I	CHE 201-202 CHE 301-302 MAT 151 PHY 201-202 or 203-204	x		4
		CHE 402	Physical Chemistry II	CHE 401		x	4
		CHE 408	Advanced Analytical Chemistry	CHE 313 CHE 401-402		x	4
		CHE 421	Physical Methods in Forensic Chemistry	CHE 420		x	4
		CHE 505	Molecular Spectroscopy	Consent of Mentor	x		3
		CHE 510	Polymer Chemistry	CHE 301-302			3
		BIO 224	Anatomy and Physiology	BIO 103	x	x	4
		BIO 412	Gene Expression and Control	BIO 305 CHE 201-202		x	3
		BIO 502	Advanced Genetics	BIO 210, 220, 305, 1 year of Chemistry	x		3
		BIO 503	General and Cellular Physiology	BIO 210, 220 and Organic Chemistry or consent of instructor	x	x	4
		MAT 512	Elements of Mathematical Modeling	MAT 260			3
		EGR 406	Survey of Nanotechnology	CHE 202, MAT 152, PHY 202 or Consent of mentor			3
D	SELECT ONE Take two semesters of	PHY 491	Senior Research Topics in Physics	Consent of Mentor	x	x	2-12
		CHE 314-315	Introduction to Chemical Research	Consent of Mentor	x	x	3

research credits, each semester 2-12 research credits, with a minimum of 4 total research credits. Upon conclusion of the second research course, the student is required to submit a comprehensive project report based on nanoscience-related research.	CHE 414-415	Chemical Research Applications	Consent of Mentor	x	x	3
	BIO 408	Research Problems	Consent of Mentor	x	x	2-4
	BIO 505	Research Problems	Consent of Chair	x	x	2-6
	MAT 424	Research Problems	Consent of Chair			2-4
	EGR 391	Intermediate Research Topics in Engineering	Consent of Mentor	x	x	2-9
	EGR 491	Senior Research Topics in Engineering	Consent of Mentor	x	x	2-12
	CSC 291	Basic Research Topics in Computer Science - Introduction to Robotics	CSC 152	x		3
	CSC 391	Intermediate Research Topics in Computer Science	Consent of Mentor	x	x	3

Description of minor for the academic catalog

The School of Science provides an interdisciplinary undergraduate minor in Nanoscience which prepares graduates with sufficient scientific content and experience in nanoscience to pursue interdisciplinary related programs in graduate school or employment.* The minor in Nanoscience requires 20 credit hours from the following list of courses:

- 3 credit hours - SCI 203
- 7-8 credit hours selected in courses outside of student's own major from: PHY 202, PHY 204, CHE 201, BIO 105, MES 130
- 6-8 credit hours with at least 3 credit hours outside of student's own major, selected from: PHY 211, PHY 212, PHY 526, CHE 401, CHE 402, CHE 408, CHE 421, CHE 505, CHE 510, CSC 204, BIO 224, BIO 412, BIO 502, BIO 503, MAT 512, EGR 406
- 4 credit hours minimum of research related to nanoscience, divided between two semesters, selected from: BIO 408, BIO 505, CHE 314-315, CSC 291, CSC 391, EGR 391, EGR 491, MAT 424, PHY491. The student is required to submit a comprehensive project report based on nanoscience-related research.

*Note: The Office of the Dean in the School of Science will appoint a faculty mentor who will serve as the advisor for the minor.

The student pursuing said minor is required to attend **four** nanoscience-related seminars/presentations/talks per semester and submit a 1-page report on each.