ES - Nanomedicine Curriculum

by semester

Total credits: 129

revised Decemeber 2018

First Semester

APMA 1110	Single Variable Calculus	4
CHEM 1610	Intro Chemistry for Engineers I	3
CHEM 1611	Intro Chemistry Lab	1
ENGR 1624	Intro to Engineering	4
STS 1500	Sci, Tech and Contemp Issues	3
		15

Second Semester

APMA 2120	Multivariate Calculus	4
PHYS 1425	General Physics I	3
PHYS 1429	Physics Workshop	1
CS 111x	Intro to Programming	3
MSE 2090	Intro to Materials Sci (Math/Sci Elec)[1]	3
CHEM 1620/1	Chemisty II & Lab (Sci elective)[2]	4
		18

Third Semester

APMA 2130	Ordinary Differential Equations	4
PHYS 2415	General Physics II	3
PHYS 2419	Physics Workshop	1
CHEM 2410	Organic Chemistry I	3
CHEM 2311	Organic Chemistry Lab	1
BME 2101	Physiology I for Engineers	3
	HSS elective[3]	3
		18

Fourth Semester

BME 2102	Physiology II	3
BME 2104	Cell and Molecular Bio for Eng	3
MSE 3101	Materials Science Investigations	3
STS	STS 2XXX/3XXX elective	3
	Technical elective[4]	3
	HSS Elective[3]	3
		18

Fifth Semester

BME 2315	Computational Biomedical Eng	3
BME 4414	Biomaterials	3
MSE 3670	EMOP	3
	Technical elective[4]	3
	HSS elective[3]	3
		15

Sixth Semester

BME 3240	Biotransport	3
BME 4xxx	Nanomed Lab	3
MSE 3050	Thermo and Kinetics of Materials	3
	Advanced Math/CS elective[5]	3
	Unrestricted elective[6]	3
		15

Seventh Semester

STS 4500	STS and Engineering Practice	3
	Advanced Independent Project[7]	3
BME 4890	Nanomed Engineering	3
MSE 4055	Nanoscale Science and Tech	3
	Technical elective[4]	3
		15

Eighth Semester

STS 4600	Eng, Ethics & Prof Responsibility	3
	Advanced Independent Project[7]	3
	Technical elective[4]	3
	Unrestricted elective[6]	3
	Unrestricted elective[6]	3
		15

1 - Math and Science Elective - Chosen from the SEAS Undergraduate Dean's Office Approved List of Math and Science Electives, available online and in Thronton A-122.

2 - Science elective 2: Either CHEM 1620 with lab or PHYS 2620 (Fall course) is required.

3 - HSS electives are chosen from the approved list available in A122 Thornton Hall.

4 - Technical electives (2xxx level) and advanced techincal electives (3xxx) are electives in math, science or engineering courses.

5 - Advanced math/CS elective: One 3xxx-level or higher mathematics courses in SEAS or CLAS; or one 2xxx-level or higher course in computer science.

6 - Unrestricted electives may be chosen from any graded course in the University except mathematics courses below MATH 1310, including STAT 1110 and STAT 1112, and courses that substantially duplicate others used for the student's degree.

7 - The Advanced Independent Project is a graded research, independent study, or design course. Individual or group projects are possible. Engineering in Context (EIC) courses may substitute.