B.S. Applied Physics

Notes:
1. Math 112 (Calculus I) preparation is assumed in high school. If you studied differentiation and integration in high school, move on to Math 113.
2. If you want a more formal versus applied math preparation, and perhaps a math minor, take the math sequence on the right. It requires 1-2 more hours than the left track. Both tracks are good.
3. Senior Thesis is required; join research group as early as possible. Credit in Sr. year in 498R.
4. Physics 416, Writing in Physics, can replace Engl 316, and can help you write your thesis. Take it when your research is essentially complete.
5. Color code: blue = math & CS, orange = introductory sequence, purple = lab, yellow = careers, green = computational, red = upper level.

High school calc. or Math 112

Freshman

MATH 113 Calculus II

MATH 302 Adv Eng. Math

MATH 313 Linear Alg

MATH 314 Calculus many variables

MATH 303 OR 334 Diff. Equations

Sophomore

MATH 303 OR 334 Diff. Equations

PHYS 220 Elec & Mag

PHYS 222 Modern Phys

PHYS 230 Computational Physics 1 (1.0 hr)

PHYS 240 Sci Apparatus Design, Fab (2.0 hr)

PHYS 318 Math Phys Take 318 as soon as you have prereqs

PHYS 321 Mechanics

PHYS 320 Adv Eng. Math

PHYS 330 Computational Physics 2 (1.0 hr)

PHYS 360 Statistical/Thermal

PHYS 410 Electronics (1.0 hr)

PHYS 415 Expt. Phys (1.0 hr)

PHYS 420 Elec & Mag 1

PHYS 421 Modern Phys

PHYS 430 Computational Physics 3 (1.0 hr)

PHYS 431 Math Phys Take 318 as soon as you have prereqs

PHYS 440 Experiment in Contemp Phys (2.0 hr)

PHYS 441 Elec & Mag 1

PHYS 442 Elec & Mag 2

Capstone Project/Senior Thesis - Begin research in Jr year or before, sign up for 492R or 498R your last semester

Junior

Take 12 hours of electives in your chosen emphasis, see note to the right. Clear with advisor.

PHYS 321 Mechanics

PHYS 430 Computational Physics 3 (1.0 hr)

PHYS 440 Experiment in Contemp Phys (2.0 hr)

Senior

EE 466 Intro Optical Eng

PHYS 471 Optics Prereq: 123, 220, Math 302 or 314.

PHYS 472 Quantum 2

EE 466 Intro Optical Eng

Other courses recommended by alumni
Stat 201 (Stat for Eng. & Sci)
Math 410 (Numerical Methods)
Mech Eng 273 (Intro to Sci Comp & Comp Aid

Applied Physics elective courses
There is great flexibility for a choice of emphasis: acoustics, engineering, computer science, biophysics, business, pre-law, pre-med., etc. As soon as possible, meet with your departmental advisor to define an emphasis and choose 12 hours of electives in this emphasis. These 12 hours must consist of a coherent set of courses with an identified educational goal. At least nine hours must be 300-level or above; up to three hours can be 200-level.

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