

## ACADEMIC ROADMAP

Physics BS + BEng 3+2 Option

Fall 2024 (rev 2/14/24)

### Freshman Year (30 credits)

#### FIRST SEMESTER

Course Title	Catalog Number	Prerequisite(s)
College Writing I 3cr	CWP 101	
University Physics I 5cr	PHY 111	Co-req is MAT 161 or MAT126
Calculus I + Lab (4+1)cr	MAT 161 + MAT 163	
Physics Freshman Seminar 1cr	PHY 189	

#### SECOND SEMESTER

Course Title	Catalog Number	Prerequisite(s)
College Writing II 3cr	CWP 102	CWP 101
University Physics II 5cr	PHY 112	PHY 111
Calculus II + Lab (4+1)cr	MAT 162 + MAT 164	MAT 161
Fund. Chemistry I + lab (3+1)cr	CHE 111 + CHE 113	

### Notes and recommendations:

Attend at least one faculty office hour; visit Academic Commons (Math & Writing Centers, tutoring); view your degree audit sheet in Degree Works

### Sophomore Year (60 credits)

#### THIRD SEMESTER

Course Title	Catalog Number	Prerequisite(s)
Univ Physics III + Lab (3+1)cr	PHY 213 + PHY 214	PHY 108 or PHY112
Calc III + Lab (4+1)cr	MAT 263 + MAT 264	MAT 162
Fund. Chemistry II + L (3+1)cr	CHE 112 + CHE 114	CHE 111

#### FOURTH SEMESTER

Course Title	Catalog Number	Prerequisite(s)
Modern Physics I 3cr	PHY 305	PHY 213 + CHE 112
Computational Physics 3cr	PHY 310	PHY 107 or PHY 111
Intro to Theoretical Physics 3cr	PHY 320	PHY108 or 112; MAT127 or 162

### Notes and recommendations:

Form a study group; consider enrolling in a minor or certificate program

**Junior Year (90 credits)****FIFTH SEMESTER**

<b>Course Title</b>	<b>Catalog Number</b>	<b>Prerequisite(s)</b>
Modern Physics II + Lab (3+1)cr	PHY 306 + PHY 307	PHY 305
Electric Circuit Analysis 3cr	PHY 324	PHY 108 or PHY 112
Classical Mechanics 3cr <b>OR</b>	PHY 425	PHY 310 + PHY320
Electricity & Magnetism 3cr	PHY 440	PHY 320

**SIXTH SEMESTER**

<b>Course Title</b>	<b>Catalog Number</b>	<b>Prerequisite(s)</b>
Advanced Physics Lab 3cr	PHY 410	PHY 305
Differential Equations	MAT 315	MAT 263

**Notes and recommendations:**

Visit the Career and Professional Education Center; talk to your faculty advisor about graduate school options. Choose an Engineering (Physics, Mechanical, Electrical, Computer, Chemical, Materials, Aerospace etc.) major at a cooperating Engineering program and school. Eg.. <https://engineering.buffalo.edu>

**Fourth and Fifth Years at non-Buff State Engineering School (120 credits for Buffalo State degree)****SEVENTH - TENTH SEMESTERS**

<b>Course Title</b>	<b>Catalog Number</b>	<b>Prerequisite(s)</b>
Engineering courses at a cooperating institution		

**Notes and recommendations:**

Apply for graduation; apply to graduate school, if applicable; visit the Career and Professional Education Center to have your resume reviewed