

ACADEMIC ROADMAP

Buffalo State Physics BS + Other University Engineering BS 3+2 Option
Fall 2024 (rev 3/19/2024)

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
Freshman Physics Seminar 1cr	PHY 189	
Calculus I 4cr	MAT 161	
Buff State GE23 3cr	varies	

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 4cr	MAT 162	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 4cr	MAT 263	MAT 162
Fund. Chemistry II + L (3+1)cr	CHE 112 + CHE 114	CHE 111
Buff State GE23 3cr	varies	

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
Buff State GE23 3cr	varies	

Notes and recommendations:

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

Junior Year (90 credits)

FIFTH SEMESTER

Course Title	Catalog Number	Prerequisite(s)
Modern Physics II + Lab (3+1)cr	PHY 306 + PHY 307	PHY 305
Electric Circuit Analysis 3cr	PHY 324	PHY 108 or PHY 112
Differential Equations 3cr	MAT 315	MAT 263
Electricity & Magnetism 3cr	PHY 440	PHY 320
Classical Mechanics 3cr (not required for 3-2)	PHY 310 + PHY320	
Buff State GE23 3cr	varies	

SIXTH SEMESTER

Course Title	Catalog Number	Prerequisite(s)
Advanced Physics Lab 3cr	PHY 410	PHY 305
Quantum Mechanics 3cr (not required for 3-2)	PHY 435	PHY 310, 320, 305
Buff State GE23 3cr	varies	
Buff State GE23 3cr	varies	

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

Course Title	Catalog Number	Prerequisite(s)
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