

Sample Four-Year Plan for a BS in Engineering Physics Applied Physics Concentration

	Fall Semester	Spring Semester
Freshman Year	Math 140 – 4 cr Physics 101** - 1 cr Physics 113 & 181 – 6 cr English 101 - 3cr Gen Ed: SBS I - 3 cr (17 credits)	Math 141 – 4 cr Physics 114 & 182 – 6 cr First Year Seminar – 4 cr English 102 – 3 cr (17 credits)
Sophomore Year	* Physics 211 – 3 cr * Physics 281 – 3 cr Math 242 – 4 cr Chemistry 115 & 117 - 5cr (15 credits)	* Physics 214 – 3 cr Math 270 – 3 cr Chemistry 116 & 118 – 5 cr Engineering 104 – 3 cr Intermediate Seminar – 3 cr (17 credits)
Junior Year †	Engineering 231 & 271 – 4 cr CS 110 – 4 cr Gen Ed: Humanities – 3 cr Engineering Elective I - 3cr (14 credits)	Engineering 232 & 272 – 4 cr * Physics 312 – 3 cr * Physics 382 – 3 cr Applied Physics Elective I - 3cr Gen Ed: Arts – 3 cr (16 credits)
Senior Year	* Physics 321 – 3 cr * Physics 421 – 3 cr Engineering Elective II – 3 cr Applied Physics Elective II – 3 cr Gen Ed: SBS II – 3 cr (15 credits)	* Physics 322 – 3 cr Engineering Elective III – 3 cr Applied Physics Elective III – 3 cr Gen Ed: World Culture – 3 cr Lab elective - 4cr (16 credits)

* - Class may be offered only once a year.

** - Recommended.

† - The Writing Proficiency Requirement (WPR) is recommended to be completed at 60-75 credits. Please consult the WPR website:

www.umb.edu/academics/vpass/undergraduate_studies/writing_proficiency

- This document is a suggested plan for the major. Students must meet with their faculty advisor each semester and refer to their degree audit to ensure adequate progress toward their degree.
- Students are strongly advised to select general education course that also satisfy their International and US Diversity requirements
See reverse side for more detailed information

Engineering Physics - Applied Physics Concentration

BS Course Number Guide

This course guide provides the detailed names of courses listed by number on the four-year plans. It is not a comprehensive list of courses for your major, or a substitute for an advising appointment! Consult with your faculty advisor when choosing courses, and check your degree audit regularly.

Chemistry 115 & 117 – Chemical Principles I Lecture & Lab
Chemistry 116 & 118 – Chemical Principles II Lecture & Lab
CS 110 – Introduction to Computing
ENGIN 104 – Intro to Electrical and Computer Engineering
ENGIN 231 & 271 – Circuit Analysis I and Circuit Lab I
ENGIN 232 & 272 – Circuit Analysis II and Circuit Lab II
Math 140 – Calculus I
Math 141 – Calculus II
Math 242 – Multivariable and Vector Calculus
Math 270 – Applied Ordinary Differential Equations
Physics 113 & 181 – Fundamentals of Physics I Lecture & Lab
Physics 114 & 182 – Fundamentals of Physics II Lecture & Lab
Physics 211 & 281 – Introduction to Contemporary Physics & Physics
Lab I Physics 214 – Thermodynamics
Physics 312 - Mechanics
Physics 321 – Theory of Electricity and Magnetism I
Physics 322 – Theory of Electricity and Magnetism II
Physics 382 – Intermediate Laboratory
Physics 421 – Atomic Physics and Introduction to Quantum Mechanics

APPLIED PHYSICS ELECTIVE - Select 3 from:

PHYSIC 247 Fundamentals of Quantum Physics
PHYSIC 297 Special Topics in Physics
PHYSIC 331 Optics
PHYSIC 347 Quantum Information II: Quantum Computation
PHYSIC 350 Statistical Physics
PHYSIC 351 Quantum Information III: Physics and Information
PHYSIC 362 Computational Science
PHYSIC 397 Special Topics in Physics
PHYSIC 447 Quantum Information IV: Quantum Science Applications
PHYSIC 479 Readings in Physics I
PHYSIC 480 Readings in Physics II
PHYSIC 487 Research in Physics I
PHYSIC 488 Research Physics II
PHYSIC 497 Special Topics in Physics
PHYSIC 498 Special Topics Laboratory

Consult your advisor if you are interested in taking any graduate level courses

LAB ELECTIVE - Select 1 from:

ENGIN 241 Digital Systems with Lab
ENGIN 304 Engineering Design
ENGIN 365 Electronics I with Lab
PHYSIC 298 Special Topics Laboratory
PHYSIC 398 Special Topics Laboratory

ENGINEERING ELECTIVES - Select 3 from:

ENGIN 202 Statics (Mechanical Engineering)
ENGIN 211L Engineering Mathematics
ENGIN 221 Strength of Materials I
ENGIN 321 Signals and Systems
ENGIN 322 Probability and Random Processes
ENGIN 331 Fields & Waves
ENGIN 332 Fields and Waves II
ENGIN 346 Microcontrollers
ENGIN 351 Fundamentals of Semiconductor Devices
ENGIN 362 Fluid Mechanics
ENGIN 366 Electronics II with Lab

Additional resources:

www.umb.edu/academics/vpass/undergraduate_studies/general_education_requirements
www.umb.edu/academics/course_catalog/search
www.umb.edu/academics/csm/student_success_center/degree_planning/math_placement