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

	Fall Semester	Spring Semester
Freshman Year	Math 140 – 4 cr Physics 101** - 1 cr Physics 113 & 181 – 6 cr Gen Ed: WorldCulture – 3 cr English 101 – 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 Chemistry 251 & 255 – 5 cr CS 110 - 4cr Gen Ed: Arts – 3 cr (16 credits)	Engineering 232 & 272 – 4 cr Chemistry 252 & 256 - 5 cr * Physics 312 – 3 cr * Physics 382 – 3 cr (15 credits)
Senior Year	* Physics 321 – 3 cr * Physics 421 – 3 cr * Chemistry 351 – 3 cr Engineering Elective I - 3 cr Gen Ed: SBS I – 3 cr (15 credits)	* Physics 322 – 3 cr Lab Elective - 4 cr Engineering Elective II - 3 cr Gen Ed: Humanities – 3 cr Gen Ed: SBS II – 3 cr (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 courses which also satisfy the US and International diversity requirements
  See reverse side for more detailed information

Engineering Physics - *Organic Chemistry 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

Chemistry 251 & 255 - Organic Chemistry I & Lab

Chemistry 252 & 256 - Organic Chemistry II & Lab

Chemistry 351 - Organic Qualitative Analysis

CS 110 – Introduction to Computing

ENGIN 104 – Introduction 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

LAB ELECTIVE - Select 1 from:

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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 2 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