Sample Four-Year Plan for a BS in Engineering Physics
Digital Electronics 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 CS 110 - 4cr (14 credits)	* Physics 214 – 3 cr Math 270 – 3 cr Chemistry 115 & 117 – 5 cr Engineering 104 – 3 cr Intermediate Seminar – 3 cr (17 credits)
Junior Year †	Engineering 231 & 271 – 4 cr Chemistry 116 & 118 – 5 cr CS 210 - 4cr Gen Ed: Arts – 3 cr (16 credits)	Engineering 232 & 272 – 4 cr * Physics 312 – 3 cr * Physics 382 – 3 cr CS 240 - 3 cr Gen Ed: SBS I – 3 cr (16 credits)
Senior Year	* Physics 321 – 3 cr * Physics 421 – 3 cr Engineering Elective I – 3 cr Lab elective - 4 cr Gen Ed: SBS II – 3 cr (16 credits)	* Physics 322 – 3 cr Engineering Elective II - 3cr Concentration Elective I – 3/4 cr Concentration Elective II - 3/4 cr Gen Ed: Humanities – 3 cr (15/17 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 - *Digital Electronics 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

CS 210 - Intermediate Computing with Data Structures

CS 240 - Programming in C

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:

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

CONCENTRATION ELECTIVE - Select 2 from:

ENGIN 341 Advanced Digital Design
ENGIN 346 Microcontrollers
ENGIN 351 Fundamentals of Semiconductor Devices
ENGIN 366 Electronics II with Lab
ENGIN 421 Radar Systems
ENGIN 441 Embedded Systems
ENGIN 446 Computer Architecture Design
ENGIN 451 Semiconductor Device Design, Simulation and Fabrication
PHYSIC 600 Electronic Instrumentation I: Analog
PHYSIC 601 Electronic Instrumentation II: Digital

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