

Curriculum Map – Physics Area (Computational Physics Track)

Effective Fall 2020

NOTE: If you are required to complete any developmental courses, you may not be able to complete the degree in four years. This curriculum map assumes that you have not transferred in any previously completed college level courses.

All students must have 36 hours of general education courses which include:

FYS – First Year Seminar	ENG 100 – Core Writing I
COMS 108 – Fund. Of Speech Communication	ENG 200 – Core Writing II
MATH 131, 135, 152, 174 or 175 - CORE Math	Capstone

One 3 credit hour course from each of the following categories

HUM I	SBS I	NSC I
HUM II	SBS II	NSC II

The approved course list may be accessed through the current MSU Undergraduate Catalog.

FIRST YEAR COURSE SCHEDULE									
✓	Fall Semester	Code	Credits		✓	Spring Semester	Code	Credits	
	CHEM 111/111L Principles of Chemistry I & Lab	R	4			CHEM 112/112L Principles of Chemistry II & Lab	R	4	
	MATH 175 Calculus I	G/R	4			ENG 100 Writing I	G	3	
	MATH 170 Introduction to Computer Science	R	4			COMS 108 Fundamentals of Speech	G	3	
	PHYS 105 Introduction to Physics & Engineering Professions	R	1			PHYS 181 Introduction to Scientific Computing	R	3	
	FYS 101 First Year Seminar	G	3			MATH 275 Calculus II	R	4	
Total Credit Hours				16	Total Credit Hours				17

SECOND YEAR COURSE SCHEDULE									
✓	Fall Semester	Code	Credits		✓	Spring Semester	Code	Credits	
	MATH 276 Calculus III	R	4			MATH 363 Differential Equations	R/U	3	
	PHYS 231/231L Engineering Physics I & Lab	R	5			PHYS 232/232L Engineering Physics II & Lab	R	5	
	ENG 200 Writing II	G	3			MATH 301 Elementary Linear Algebra	R/U	3	
	NSC I Natural Sciences - Elective	G	3			CIS 205 Intro to Programming – C++	R	3	
Total Credit Hours				15	Total Credit Hours				14

THIRD YEAR COURSE SCHEDULE									
✓	Fall Semester	Code	Credits		✓	Spring Semester	Code	Credits	
	PHYS 353 Concepts of Modern Physics I	R/U	4			PHYS 354 Concepts of Modern Physics II	R/U	3	
	PHYS 340 Experimental Physics	R/U	3			CS 310 Algorithms & Adv. Data. Str.	R/U	3	
	SBS I Social/Behavioral Sciences - Elective	G	3			PHYS 332 Electricity and Magnetism	R/U	4	
	PHYS 481 Mathematics for Scientists & Engineers	R/U	3			PHYS 381 Computer Solutions to Engineering and Science Problems	R/U	3	
	CS 303 Data Structures	R/U	3			HUM I Humanities - Elective	G	3	
Total Credit Hours				16	Total Credit Hours				16

FOURTH YEAR COURSE SCHEDULE									
✓	Fall Semester	Code	Credits		✓	Spring Semester	Code	Credits	
	PHYS 391 Dynamics	R/U	3			PHYS 499D Capstone & Senior Thesis II	G/U	1	
	PHYS 499C Capstone & Senior Thesis I	G/U	2			PHYS 493 Quantum Mechanics	R/U	3	
	SBS II Social/Behavioral Sciences - Elective	G	3			CS 420 Data Mining Concepts	R/U	3	
	NSC II Natural Sciences - Elective	G	3			HUM II Humanities - Elective	G	3	
	Free Elective	E/U	2			Free Elective	E/U	3	
Total Credit Hours				13	Total Credit Hours				13

(E) Elective
(P) Pre-requisite

(G) General Education Course
(R) Required Course

(U) Upper Division Course 300-400 level (you must have 42 hours)