

## Michigan Technological University

### Minor in Physics

Program Code SPHM, Academic Year 2024-25

Department of Physics

Total Credits Required: 18

#### Required Courses: 6 to 18 credits

- PH 2100 University Physics I – Mechanics (3)  
*Prereqs: PH1100 C and (MA1160 or MA1161 or MA1121 or MA1135) and PH2110 C and (MA2160 C or MA3160 C)*  
**or** PH 1160 Honors Physics I – Mechanics (4)  
*Prereqs: MA1160 C or MA1161 C or MA1121 C or MA 2160 C*
- PH 2200 University Physics II - Electricity & Magnetism (3)  
*Prereqs: (PH1200 C or PH2261 C) and (PH2100 or PH1160) and MA2160*  
**or** PH 2260 Honors Physics III (4)  
*Prereqs: (PH1160 or PH2100) and (PH1200 C or PH2261 C) and MA2160*

#### Upper-level Elective Courses: 9 credits

*Select at least one of the following three physics courses:*

- PH 3110 Theoretical Mechanics I (3) *Prereqs: (PH2200 or PH2260) and (MA3520 or MA3521 or MA3530 or MA3560)*
- PH 3410 Quantum Physics I (3) *Prereqs: PH2400 and (MA3520 or MA3521 or MA3530 or MA3560)*
- PH 4210 Electricity and Magnetism I (3) *Prereqs: (PH2200 or PH2260) and PH3110 and (MA3520 or MA3521 or MA3530 or MA3560)*

*Select additional courses from the following list to bring the total credits in this upper-level section to 9*

- PH 3111 Theoretical Mechanics II (3) *Prereqs: PH3110*
- PH 3210 Optics (3) *Prereqs: MA3520 or MA3521 or MA3530 or MA3560 C*
- PH 3300 Thermodynamics and Statistical Mechanics (3) *Prereqs: PH2300 or PH1360*
- PH 3320 Methods of Theoretical Physics (3) *Prereqs: MA3160 and (MA3520 or MA3521 or MA3530 or MA3560) and (PH2200 or PH2260)*
- PH 3411 Quantum Mechanics II (3) *Prereqs: PH 3410*
- PH 3480 Advanced Physics Laboratory (3) *Prereqs: PH3210*
- PH 4080 Senior Research I (3) *Prereqs: PH3480*
- PH 4211 Electricity and Magnetism II (3) *Prereqs: PH4210*
- PH 4292 Light and Photonic (3) Materials *Prereqs: PH2200*
- PH 4390 Computational Methods in Physics (3) *Prereqs: PH1600 and PH2400 and (MA3520 or MA3521 or MA3530 or MA3560)*
- PH 4395 Computer Simulation in Physics (3) *Prereqs: PH3300 and PH4390 and (PH2400 or PH3410)*
- PH 4510 Intro to Solid State Physics (3) *Prereqs: (PH2300 or PH1360) and PH2400 and (CH1150 and CH1151) and (MA3520 or MA3521 or MA3530 or MA3560)*
- PH 4610 Stellar Astrophysics (3) *Prereqs: PH1600 and PH2400 and (MA3520 or MA3521 or MA3530 or MA3560)*
- PH 4620 Galactic Astrophysics (3) *Prereqs: PH1600 and PH2400 and (MA3520 or MA3521 or MA3530 or MA3560)*
- PH 4630 Particle Astrophysics (3) *Prereqs: PH2400 and (MA3520 or MA3521 or MA3530 or MA3560)*

**Additional Physics (PH) courses at the 1000- level or higher may be selected to bring total credits to 18**

- PH XXXX