Michigan Technological University
Minor in Astrophysics
Program Code SPHA, Academic Year 2026-2027
Department of Physics
Minimum Credits Required: 18

Required Courses: 12 credits

- PH 1600 Introductory Astronomy (2) *Prereqs: none*
- PH 1610 Introductory Astronomy Lab (1) *Prereqs: none*
- PH 2400 University Physics IV – Waves and Modern Physics (3) *Prereqs: PH2200 or PH2260*
- PH 4620 Galaxies and Cosmology (3) *Prereqs: PH1600 and PH2400 and (MA3520 or MA3521 or MA3530 or MA3560)*
- PH 4630 High-Energy Astrophysics (3) *Prereqs: PH2400 and (MA3520 or MA3521 or MA3530 or MA3560)*

Elective Courses: minimum 6 credits

Select additional courses to bring total credits to 18

- AE 2550 Space Environment & Operation (3) *Prereqs: ENG1102 and PH2200*
- EE 3160 Signals and Systems (3) *Prereqs: (EE2110 or EE2112() and (MA2320 or MA2321 or MA2330) and (MA3520 or MA3521 or MA3530 or MA3560)*
- EE 3190 Optical Sensing and Imaging (3) *Prereqs: MA3520 or MA3521 or MA3530 or MA3560*
- EE 4250 Modern Communication Systems (3) *Prereqs: EE3160 and EE3131 and EE3180*
- EE 4252 Digital Signal Processing and its Applications (4) *Prereqs: EE3160*
- FW 4540 Remote Sensing of the Environment (3) *Prereqs: none*
    or GE 4250 Fundamentals of Remote Sensing (3) *Prereqs: PH2200 and MA2160*
- GE 2000 Understanding the Earth (3) *Prereqs: None*
- GE 2010 Introduction to Geographic Information Systems (3) *Prereqs: MA1160 or MA1161 or MA1121*
- GE 3320 Earth History (3) *Prereqs: GE2000 or GE2100*
- MA 2720 Statistical Methods* (4) *Prereqs: MA1020 or MA1030 or MA1031 or MA1032 or MA1120*
- MA 3560 Mathematical Modeling with Differential Equations (3) *Prereqs: MA1135 or MA1160 or MA1161 or MA1121 or MA2160(C) or MA3160(C)*
- MA 3710 Engineering Statistics* (3) *Prereqs: MA2160 or MA3160*
- MA 4620 Numerical Methods for PDEs (3) *Prereqs: (MA3520 or MA3521 or MA3530 or MA3560) and MA3160*
- PH 4211 Electrical and Magnetism II (3) *Prereqs: PH4210*
- PH 4390 Computational Methods in Physics (3) *Prereqs: (PH2021 or PH2020) and PH3410*
- PH 5640 Atmospheric Physics (3) *Prereqs: PH2300 and (MA3520 or MA3521 or MA3530 or MA3560)*