Michigan Technological University – Department of Physics
Typical Schedule: BS Physics Major (SPH)

Note: The following is intended to serve as a guide. This is not an official list of degree requirements. Adjustments may be required due to curriculum changes. Students are encouraged to discuss and review their schedules with their advisors.

Year 1 – Fall Semester

PH1160 Honors Physics I- Mechanics (3)
PH1161 Intro to Experimental Physics 1 (1)
PH1162 Intro to Physics Seminar (1)
MA1160/1 Calculus with Technology I (4-5)[*]
CH1150 University Chemistry I (3)
CH1151 University Chemistry Lab (1)
UN1015 Composition (3)

Total Credits: 16-17

Year 1 – Spring Semester

PH1360 Honors Physics II (2)[‡]
PH1361 Intro to Experimental Physics II (1)
PH2300 Univ Phys III – Fluids & Thermal (2)[‡]
MA2160 Calculus with Technology II (4)
MA2320 or 2330 Elem./Intro. Linear Algebra (2-3)
Ess. Ed. Foundations of the Human World (3)
Elective or Physics elective (3)[◊ #]

Total Credits: 15-18

Year 2 – Fall Semester

PH2021 Intro to Programming in Physics (1)
PH2260 Honors Physics III- Electricity & Magnetism (4)
PH2261 Intro to Experimental Physics III (1)
MA3530 Intro to Differential Equations (3)
Ess. Ed. Distribution or Minor course (3)[§]
Elective or Physics elective (3) [◊ #]
Ess. Ed. Well-being (1) [§]

Total Credits: 16

Year 2 – Spring Semester

PH2230 Electronics (4)
PH2400 Univ Physics IV- Waves & Modern Phys. (3)
MA3160 Multivariable Calculus (4)
Ess. Ed. Distribution or Minor course (3)[§]
Elective or Physics elective (3) [◊ #]
Ess. Ed. Well-being (0-1) [§]

Total Credits: 17-18

Year 3 – Fall Semester

PH3110 Theoretical Mechanics I (3)
PH3210 Optics (3)
PH3320 Methods of Theoretical Physics (3)
Ess. Ed. Distribution or Minor course (3)[§]
Electives and/or Physics electives (3-6) [◊ #]
Ess. Ed. Well-being (0-1) [§]

Total Credits: 15-18

Year 3 – Spring Semester

PH3111 Theoretical Mechanics II (3)
PH3300 Thermo & Statistical Physics (3)
PH3410 Quantum Physics I (3)
PH3480 Advanced Physics Laboratory (2)
Ess. Ed. Distribution or Minor course (3) [§]
Elective or Physics elective (3) [◊#]

Total Credits: 17

Year 4 – Fall Semester

PH3411 Quantum Physics II (3)
PH4010 Senior Colloquium (1)
PH4050 Qualitative Methods (1)
PH4080 Senior Research I (3)
PH4210 Electricity & Magnetism I (3)
PH4390 Computational Methods in Physics (3)
Ess. Ed. Distribution or Minor course (3) [§]

Total Credits: 17

Year 4 – Spring Semester

PH4011 Senior Colloquium II (1)
PH4081 Senior Research II (3)
PH4211 Electricity & Magnetism II (3)
Ess. Ed. Distribution or Minor course (3) [§]
Electives and/or Physics electives (6) [◊ #]
Ess. Ed. Well-being (1) [§]

Total Credits: 17

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[*] Physics majors are expected to be calculus ready upon entering this program. Students who are placed in MA1032 should contact Dr. John Jaszczak (jaszczak@mtu.edu) or Dr. Katrina Black (keblack@mtu.edu) to discuss several options.

[‡] Half semester course

[◊] 12 or 13 total credits of free electives

[#] 6 credits physics electives (or cognates approved by advisor; may not include PH1110/1210/1140/1240 and labs) are required

[§] For Essential Education requirements see https://www.mtu.edu/registrar/essential-education/program-requirements/