# 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. Three units of Co-Curricular activities are also required.

### Year 1 – Fall Semester
- **PH1160** Honors Physics I - Mechanics (4)
- **PH1161** Intro to Experimental Physics 1 (1)
- **MA1160/1** Calculus with Technology I (4-5)*
- **CH1150** University Chemistry I (3)
- **CH1151** University Chemistry Lab (1)
- **[CH1153 University Chemistry Recitation (1)]†**
- **UN1015** Composition (3)

**Total Credits: 16-18**

### Year 1 – Spring Semester
- **PH1360** Honors Physics II (2)‡
- **PH1361** Intro to Experimental Physics II (1)
- **MA2160** Calculus with Technology II (4)
- **MA2320 or 2330** Elem./Intro. Linear Algebra (2-3)
- **UN1025** Global Issues (3)
- Elective or Physics elective (3)◊

**Total Credits: 15-18**

### Year 2 – Fall Semester
- **PH2020** Sci. Programming & Error Analysis (2)
- **PH2260** Honors Physics III - Electricity & Magnetism (4)
- **PH2261** Intro to Experimental Physics III (1)
- **MA3530** Intro to Differential Equations (3)
- Gen Ed Critical & Creative Thinking or Social Responsibility & Ethical Reasoning core course (3)§
- Elective or Physics elective (3)◊
- Co-curricular (0.5-1)

**Total Credits: 16.5-17**

### Year 2 – Spring Semester
- **PH2230** Electronics (4)
- **PH2400** Univ Physics IV - Waves & Modern Phys. (3)
- **MA3160** Multivariable Calculus (4)
- Gen Ed Critical & Creative Thinking or Social Responsibility & Ethical Reasoning core course (3)§
- Elective or Physics elective (3)◊
- Co-curricular (0-1)

**Total Credits: 17-18**

### Year 3 – Fall Semester
- **PH3110** Theoretical Mechanics I (3)
- **PH3210** Optics (3)
- **PH3320** Methods of Theoretical Physics (3)
- Gen Ed HASS course (3)§
- Electives and/or Physics electives (3-6)◊
- Co-curricular (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)
- Gen Ed HASS 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)
- Gen Ed HASS course (3)§

**Total Credits: 17**

### Year 4 – Spring Semester
- **PH4011** Senior Colloquium II (1)
- **PH4081** Senior Research II (3)
- **PH4211** Electricity & Magnetism II (3)
- Gen Ed HASS course (3)§
- Electives and/or Physics electives (6)◊
- Co-curricular (0.5-1)

**Total Credits: 16.5-17**

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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. Katrina Black (keblack@mtu.edu) or Dr. John Jaszczak (jaszczak@mtu.edu) to discuss several options.

† Recommended but not required for students seeking more practice in chemistry problem solving

‡ Half semester course

◊ 11 or 12 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 General Education requirements see [https://www.mtu.edu/registrar/faculty-staff/advisors/gen-ed/](https://www.mtu.edu/registrar/faculty-staff/advisors/gen-ed/)