

# Michigan Technological University – Department of Physics

## Typical Schedule: BS Applied Physics Major (SAP)

**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.

<b>Year 1</b>	
<p><b>Fall Semester</b></p> <p>PH1160 Honors Physics I- Mechanics (4)            PH1161 Intro to Experimental Physics I (1)            MA1160/1 Calculus with Technology I (4-5)<sup>†</sup>            CH1150 University Chemistry I (3)            CH1151 University Chemistry Lab (1)            [CH1153 University Chemistry Recitation (1)]<sup>‡</sup>            UN1015 Composition (3)</p> <p style="text-align: right;"><b>Total Credits: 16-18</b></p>	<p><b>Spring Semester</b></p> <p>PH1360 Honors Physics II (2)*            PH1361 Intro to Experimental Physics II (1)            PH2300 Univ Phys III – Fluids &amp; Thermal (2)*            MA2160 Calculus with Technology II (4)            MA2320 Elementary Linear Algebra (2)            UN1025 Global Issues (3)            Elective or General Education elective (3)<sup>§</sup></p> <p style="text-align: right;"><b>Total Credits: 17</b></p>
<b>Year 2</b>	
<p><b>Fall Semester</b></p> <p>PH2020 Sci Programming &amp; Error Analysis (2)            PH2260 Honors Physics III- Electricity &amp; Magnetism (4)            PH2261 Intro to Experimental Physics III (1)            MA3530 Intro to Differential Equations (3)            Gen Ed<sup>§</sup> Critical &amp; Creative Thinking or Social Responsibility &amp; Ethical Reasoning core course (3)            Elective or General Education elective (3)<sup>§</sup>            Co-curricular (0.5 - 1)</p> <p style="text-align: right;"><b>Total Credits: 16</b></p>	<p><b>Spring Semester</b></p> <p>PH2230 Electronics (4)            PH2400 Univ Physics IV- Waves &amp; Modern Physics (3)            MA3160 Multivariable Calculus (4)            Elective (3)            Gen Ed<sup>§</sup> Critical &amp; Creative Thinking or Social Responsibility &amp; Ethical Reasoning core course (3)            Co-curricular (0.5 - 1)</p> <p style="text-align: right;"><b>Total Credits: 17</b></p>
<b>Year 3</b>	
<p><b>Fall Semester</b></p> <p>PH3110 Theoretical Mechanics I (3)            PH3210 Optics (3)            PH3320 Methods of Theoretical Physics (3)            Application elective** (3-6)            General Education elective (3)<sup>§</sup>            Co-curricular (0 - 1)</p> <p style="text-align: right;"><b>Total Credits: 15-18</b></p>	<p><b>Spring Semester</b></p> <p>PH3300 Thermo &amp; Statistical Physics (3)            PH3410 Quantum Mechanics I (3)            PH3480 Advanced Physics Laboratory (2)            Elective or 2<sup>nd</sup> semester PH*** (3)            General education elective (3)<sup>§</sup>            Application elective** (3)</p> <p style="text-align: right;"><b>Total Credits: 17</b></p>
<b>Year 4</b>	
<p><b>Fall Semester</b></p> <p>PH4010 Senior Colloquium (1)            PH4050 Qualitative Methods (1)            PH4080 Senior Research I (3)            PH4210 Electricity &amp; Magnetism I (3)            PH4390 Computational Methods in Physics (2)            Application elective** or 2<sup>nd</sup> semester PH*** (3)            General Education elective (3)<sup>§</sup></p> <p style="text-align: right;"><b>Total Credits: 16</b></p>	<p><b>Spring Semester</b></p> <p>PH4011 Senior Colloquium II (1)            PH4081 Senior Research II (3)            Application elective** (3)            Elective and/or 2<sup>nd</sup> semester PH*** (3-6)            Application or General Education elective (3)            Co-curricular (0 - 1)</p> <p style="text-align: right;"><b>Total Credits: 13-17</b></p>

<sup>†</sup> Physics majors are expected to be calculus ready upon entering this program. Students who are placed in MA1032 based on their math ACT score should contact Dr. John Jaszczak ([jaszczak@mtu.edu](mailto:jaszczak@mtu.edu)) to discuss several options.

<sup>‡</sup> Recommended but not required for students seeking more practice in chemistry problem solving.

\*Half semester courses.

\*\* 13 credits in an appropriate APPLICATION AREA or UNIVERSITY MINOR. Some courses may substitute for certain physics courses. See your advisor for planning.

\*\*\* Only one of PH3111 Theoretical Mechanics II, PH3411 Quantum Physics II, or PH4211 E & M II is required.

<sup>§</sup>For General Education requirements see <http://www.mtu.edu/registrar/faculty-staff/advisors/gen-ed/>