# MATHEMATICAL PHYSICS OPTION

This option is offered within the following major(s):

- Physics - College of Science (http://catalog.oregonstate.edu/college-departments/science/physics/physics-ba-bs-hba-hbs)

**Option Code: 587**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Math</strong></td>
<td></td>
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</tr>
<tr>
<td>MTH 251</td>
<td>*DIFFERENTIAL CALCULUS</td>
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<td>MTH 252</td>
<td>INTEGRAL CALCULUS</td>
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<tr>
<td>MTH 253</td>
<td>INFINITE SERIES AND SEQUENCES</td>
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<tr>
<td>or MTH 306</td>
<td>MATRIX AND POWER SERIES METHODS</td>
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<td>MTH 254</td>
<td>VECTOR CALCULUS I</td>
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<tr>
<td>MTH 255</td>
<td>VECTOR CALCULUS II</td>
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<td>MTH 256</td>
<td>APPLIED DIFFERENTIAL EQUATIONS</td>
<td>4</td>
</tr>
<tr>
<td>MTH 341</td>
<td>LINEAR ALGEBRA I</td>
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<tr>
<td><strong>Chemistry</strong></td>
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<tr>
<td>CH 231 &amp; CH 261</td>
<td>GENERAL CHEMISTRY and *LABORATORY FOR CHEMISTRY 231</td>
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<td>CH 232 &amp; CH 262</td>
<td>GENERAL CHEMISTRY and *LABORATORY FOR CHEMISTRY 232</td>
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<td>CH 233 &amp; CH 263</td>
<td>GENERAL CHEMISTRY and *LABORATORY FOR CHEMISTRY 233</td>
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<tr>
<td><strong>Physics Core</strong></td>
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<td>PH 211 &amp; PH 221</td>
<td>*GENERAL PHYSICS WITH CALCULUS and RECITATION FOR PHYSICS 211</td>
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<tr>
<td>PH 212 &amp; PH 222</td>
<td>*GENERAL PHYSICS WITH CALCULUS and RECITATION FOR PHYSICS 212</td>
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<td>PH 213 &amp; PH 223</td>
<td>*GENERAL PHYSICS WITH CALCULUS and RECITATION FOR PHYSICS 213</td>
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<td>PH 315</td>
<td>PHYSICS OF CONTEMPORARY CHALLENGES</td>
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<td>PH 335</td>
<td>TECHNIQUES OF THEORETICAL MECHANICS</td>
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<tr>
<td>PH 365 &amp; PH 366 &amp; PH 367</td>
<td>COMPUTATIONAL PHYSICS LAB and COMPUTATIONAL PHYSICS LAB and COMPUTATIONAL PHYSICS LAB</td>
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<td>PH 411</td>
<td>ELECTRONICS</td>
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<tr>
<td>PH 422</td>
<td>PARADIGMS IN PHYSICS: STATIC FIELDS</td>
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<td>PH 423</td>
<td>PARADIGMS IN PHYSICS: ENERGY AND ENTROPY</td>
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<tr>
<td>PH 424</td>
<td>PARADIGMS IN PHYSICS: OSCILLATIONS AND WAVES</td>
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<tr>
<td>PH 425</td>
<td>PARADIGMS IN PHYSICS: QUANTUM FUNDAMENTALS</td>
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<tr>
<td>PH 426</td>
<td>PARADIGMS IN PHYSICS: CENTRAL FORCES</td>
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<td>PH 427</td>
<td>PARADIGMS IN PHYSICS: PERIODIC SYSTEMS</td>
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<td><strong>Senior-level Physics</strong></td>
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<tr>
<td>PH 401</td>
<td>RESEARCH</td>
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<td>PH 403</td>
<td>*THESIS</td>
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<td>Select two of the following:</td>
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<td>PH 431</td>
<td>CAPSTONES IN PHYSICS: ELECTROMAGNETISM</td>
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<tr>
<td>PH 441</td>
<td>CAPSTONES IN PHYSICS: THERMAL AND STATISTICAL PHYSICS</td>
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<td>PH 451</td>
<td>CAPSTONES IN PHYSICS: QUANTUM MECHANICS</td>
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<tr>
<td><strong>Mathematical Physics Electives</strong></td>
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<tr>
<td>Select 15 credits</td>
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**Total Hours: 114**

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1. **15 credits of approved upper-division courses in physics or mathematics at the 400 level or beyond, including at least one laboratory course, which form a coherent set. At least 8 of these credits must be in mathematics.**