PHYSICS - M.S.

College of Arts and Sciences
Department of Physics
103 Smith Hall
Kent Campus
330-672-2246
physics-web@kent.edu
www.kent.edu/physics

Description
The Master of Science (M.S.) in Physics consists of graduate coursework and a research project taking one or two semesters. The research project should result in a written report. Students may choose to complete a thesis which is to be defended orally. This degree provides entry-level qualifications for team research employment or a high school teaching career.

FULLY OFFERED AT:
• Kent Campus

Admission Requirements
• Official transcript(s)
• 3.0 GPA (for unconditional admissions)
• goal statement
• three letters of recommendation
• resume or vita
• general GRE test scores
• A physics subject GRE test score is highly recommended to ensure an application for the Ph.D. program is competitive

English Language Proficiency Requirements for International Students: All international students must provide proof of English language proficiency (unless they meet specific exceptions) by earning a minimum 550 TOEFL score (79 on the Internet-based version), minimum 77 MELAB score, minimum 6.5 IELTS score or minimum 58 PTE Academic score. For more information on international admission, visit the Office of Global Education's admission website. Effective spring 2018.

For more information about graduate admissions, please visit the Graduate Studies website.

Thesis
Candidates may choose to complete a thesis by registering for 6 credit hours of PHY 60199. The thesis topic is chosen together with the research advisor and must be defended to a committee of physics graduate faculty.

Program Learning Outcomes
Graduates of these programs will be able to:
1. Demonstrate cognitive skills important to a physicist, including the following:
   a. Think critically and analytically
   b. Define and solve problems in physics
   c. Conduct quantitative research in a contemporary area of physics
2. Demonstrate a core knowledge and understanding of the foundations of physics.
3. Communicate results of their work to peers, to various target groups within the physics community, and to people outside the discipline. Teaching skills also come under this heading.

Program Requirements

Major Requirements
[AS-MS-PHY]

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHY 65101</td>
<td>CLASSICAL MECHANICS</td>
<td>3</td>
</tr>
<tr>
<td>PHY 66161</td>
<td>QUANTUM MECHANICS I</td>
<td>3</td>
</tr>
<tr>
<td>Choose from the following:</td>
<td></td>
<td>6-8</td>
</tr>
<tr>
<td>PHY 55201</td>
<td>ELECTROMAGNETIC THEORY</td>
<td></td>
</tr>
<tr>
<td>PHY 55301</td>
<td>THERMAL PHYSICS</td>
<td></td>
</tr>
<tr>
<td>PHY 55401</td>
<td>MATHEMATICAL METHODS IN PHYSICS</td>
<td></td>
</tr>
<tr>
<td>PHY 65203</td>
<td>CLASSICAL ELECTRODYNAMICS I</td>
<td></td>
</tr>
<tr>
<td>PHY 65301</td>
<td>STATISTICAL MECHANICS I</td>
<td></td>
</tr>
<tr>
<td>Choose from the following:</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>PHY 60098</td>
<td>RESEARCH 1</td>
<td></td>
</tr>
<tr>
<td>PHY 60199</td>
<td>THESIS I 2</td>
<td></td>
</tr>
</tbody>
</table>

Electives 3  12-14

Minimum Total Credit Hours: 32

1. Non-thesis option: Written research report is required.
2. Thesis option: Thesis and oral defense is required.
3. Electives are selected in consultation with the student’s faculty advisor and approved by the department.

Graduation Requirements
A total of 32 credit hours of graduate credit beyond the baccalaureate degree is required. Students are required to complete 18 - 20 credit hours of core graduate physics courses and 12-14 credit hours of electives to be selected in consultation with the student's faculty advisor and approved by the department. Students must also take at least 6 credit hours of research or thesis. A research project resulting in a written report is also required, and this may take the form of a thesis to be defended orally.