### 1. Didactic Course Credits:

<table>
<thead>
<tr>
<th>Code</th>
<th>Course</th>
<th>Hours</th>
<th>Completed</th>
<th>Grade</th>
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</thead>
<tbody>
<tr>
<td>GS616</td>
<td>Foundations of Molecular and Cellular Biology</td>
<td>4</td>
<td></td>
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</tr>
<tr>
<td>MPHP602-002</td>
<td>Principles of Biostatistics</td>
<td>3</td>
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<tr>
<td>GS637</td>
<td>Responsible conduct of Science Research (Research Ethics)</td>
<td>2</td>
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<tr>
<td>GS892</td>
<td>Introduction to the presentation and Analysis of Scientific Literature: Journal club</td>
<td>1</td>
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<tr>
<td>PHA645</td>
<td>Pharmacology Seminar (one per academic year)</td>
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</tbody>
</table>

#### A. Required Courses:
- GS616 Foundations of Molecular and Cellular Biology
- MPHP602 Principles of Biostatistics
- GS637 Responsible conduct of Science Research (Research Ethics)
- GS892 Introduction to the presentation and Analysis of Scientific Literature: Journal club
- PHA645 Pharmacology Seminar (one per academic year)

#### B. Elective Advanced Pharmacology Courses:
- PHA610 Principles of Pharmacology*
- PHA617 Methods of Pharmacology Research
- PHA612 Cardiovascular Physiology and Pharmacology*
- PHA602 Cell Physiology of Excitable cells*
- PHA615 Apoptosis and Cancer Pharmacology*
- PHA618 Current Topics in Pharmacology*
- PHA622 Principles and Practices of Drug Discovery and Development*
- PHA623 Grant Writing

**Minimum of 20 didactic course credits are required for all M.S. students in the Department of Pharmacology. Of the 20 didactic course credits, GS616, MPHP602-002, GS637, GS892, and PHA645 are required. All M.S. students are also required to take a minimum of 4 advanced Pharmacology Course credits (including PHA610) indicated with an asterisk. Students can take other elective courses offered by the Department of Pharmacology or by other Departments to fulfill the didactic course requirement. It is suggested that students take Methods of Pharmacology Research (PHA617) in the first year (no more than 4 credits).**

### 2. Research Credits

**Minimum 10 research credits are required for Pharmacology M.S. students.**

- PHA 700 Research in Pharmacology