Course Title: Intermediate Differential Equations
Abbreviated Course Title: Intermediate Differential Equations
Course Subject: MATH
Course Number: 125
School Submitting Request: Natural Sciences
Division: Upper Division
Effective Term: Fall 2010
Discontinuance Term: ----
Lower Unit Limit: 4
Upper Unit Limit: 4
Prerequisites: MATH 23, MATH 24
Prerequisites with a Concurrent Option
Corequisites
Major Restrictions
Class Level Restrictions

Course Description:
This course introduces advanced solution techniques for ordinary differential equations (ODE) and elementary solution techniques for partial differential equations (PDE). Specific topics include higher-order linear ODE, power series methods, boundary value problems, Fourier series, Sturm-Liouville theory, Laplace transforms, Fourier transforms, and applications to one-dimensional PDE.

TIE Code:
T: Lecture plus Supplementary Activity

Reasons for Request:
New Course Number
New Title
New Description
Replaces Course #
This course, which replaces MATH 121, will be required for applied math majors. It will also be of interest to other majors in the Schools of Natural Sciences and Engineering. In addition to Math 125’s merits on its own, the syllabus has been designed to be well-integrated with the sequel course, Math 126. Together, Math 125 and Math 126 will form a one-year comprehensive sequence on ordinary and partial differential equations.

Brief Explanation of Change(s)

Total Contact/Non-contact Hours Per Week
Lecture: 3 contact, 4 non-contact
Lab: 0 contact, 0 non-contact
Seminar: 0 contact, 0 non-contact
Discussion: 1 contact, 4 non-contact
<table>
<thead>
<tr>
<th><strong>Total Hours Per Week</strong></th>
<th>12</th>
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</thead>
<tbody>
<tr>
<td><strong>Grading Options</strong></td>
<td>Letter Grade Only</td>
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<tr>
<td><strong>In Progress Grading</strong></td>
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<tr>
<td><strong>Maximum Enrollment</strong></td>
<td>30</td>
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<tr>
<td><strong>Maximum Enrollment Reason</strong></td>
<td>----</td>
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<tr>
<td><strong>Cross-listing</strong></td>
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<tr>
<td><strong>Conjoined</strong></td>
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<tr>
<td><strong>Cross-listed Schools</strong></td>
<td>Natural Sciences</td>
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<tr>
<td><strong>Can this course be repeated?</strong></td>
<td>No</td>
</tr>
<tr>
<td><strong>How many times?</strong></td>
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<tr>
<td><strong>Resource Requirements</strong></td>
<td>Requires a classroom with a whiteboard in addition to an LCD projector and screen.</td>
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</tbody>
</table>

**Does this satisfy a General Education Requirement?** No

**Course Outline and/or Additional Documentation** [math125syllabus.pdf (46Kb)]