**Mathematics**

**MATH 484  Nonlinear Programming**  credit: 3 OR 4 hours.
Iterative and analytical solutions of constrained and unconstrained problems of optimization; gradient and conjugate gradient solution methods; Newton's method, Lagrange multipliers, duality and the Kuhn-Tucker theorem; and quadratic, convex, and geometric programming. 3 undergraduate hours. 3 or 4 graduate hours. 4 hours of credit requires approval of the instructor and completion of additional work of substance. Prerequisite: MATH 241 (formerly MATH 243) or MATH 242; MATH 347 or MATH 348; or equivalent; MATH 415 or equivalent; or consent of instructor.

This course satisfies the General Education Criteria for a:
Quantitative Reasoning II

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<tr>
<th>CRN</th>
<th>Type</th>
<th>Section</th>
<th>Time</th>
<th>Days</th>
<th>Location</th>
<th>Instructor</th>
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<tbody>
<tr>
<td>38092</td>
<td>Lecture-Discussion</td>
<td>C13</td>
<td>10:00 AM - 10:50 AM</td>
<td>MWF</td>
<td>140 - Henry Administration Bldg</td>
<td>Lauber, A</td>
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<tr>
<td>38093</td>
<td>Lecture-Discussion</td>
<td>C14</td>
<td>10:00 AM - 10:50 AM</td>
<td>MWF</td>
<td>140 - Henry Administration Bldg</td>
<td>Lauber, A</td>
</tr>
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</table>

Credit Hours: 3 hours
Quant Reasoning II course.
Open to both undergraduate and graduate students.

Credit Hours: 4 hours
Quant Reasoning II course.
Instructor Approval Required
Not intended for Undergrad - Urbana-Champaign.
Instructor approval forms available in 313 Altgeld Hall.