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. 4 hours of credit requires approval of the instructor and department with completion of additional work of substance. Prerequisite: MATH 241; 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

<table>
<thead>
<tr>
<th>CRN</th>
<th>Type</th>
<th>Section</th>
<th>Time</th>
<th>Days</th>
<th>Location</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>30809</td>
<td>Lecture-Discussion</td>
<td>D13</td>
<td>11:00 AM - 11:50 AM</td>
<td>MWF</td>
<td>443 - Altgeld Hall</td>
<td>Vijay, S</td>
</tr>
</tbody>
</table>

Credit Hours: 3 hours
Quant Reasoning II course.

| 39140   | Lecture-Discussion  | D14     | 11:00 AM - 11:50 AM | MWF  | 443 - Altgeld Hall | Vijay, S   |

Credit Hours: 4 hours
Quant Reasoning II course.
Instructor Approval Required
Restricted to Graduate - Urbana-Champaign.