Mathematics

MATH 412  **Graph Theory**  credit: 3 OR 4 hours.
Examines basic concepts and applications of graph theory, where graph refers to a set of vertices and edges that join some pairs of vertices; topics include subgraphs, connectivity, trees, cycles, vertex and edge coloring, planar graphs and their colorings. Draws applications from computer science, operations research, chemistry, the social sciences, and other branches of mathematics, but emphasis is placed on theoretical aspects of graphs. 3 or 4 undergraduate hours. 3 or 4 graduate hours. 4 hours of credit requires approval of the instructor and department with completion of additional work of substance. Prerequisite: MATH 347 or MATH 348 or equivalent experience or CS 373.

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>30348</td>
<td>Lecture-Discussion</td>
<td>X13</td>
<td>12:00 PM - 12:50 PM</td>
<td>MWF</td>
<td>341 - Altgeld Hall</td>
<td>Kostochka, A</td>
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</tbody>
</table>

Credit Hours: 3 hours
Quant Reasoning II course.
This course is restricted to Mathematics and Math&CS majors initially, but the restriction will be removed during business hours on April 20, 2015.

| 39116| Lecture-Discussion| X14     | 12:00 PM - 12:50 PM | MWF  | 341 - Altgeld Hall | Kostochka, A   |

Credit Hours: 4 hours
Quant Reasoning II course.
Instructor Approval Required
Restricted to Mathematics or Math & Computer Science major(s). Restricted to Graduate - Urbana-Champaign.
Instructor approval forms available in 313 Altgeld Hall beginning on the first day of Fall semester.