Mathematics

MATH 417  Intro to Abstract Algebra  credit: 3 OR 4 hours.
Fundamental theorem of arithmetic, congruences. Permutations. Groups and subgroups, homomorphisms. Group actions with applications. Polynomials. Rings, subrings, and ideals. Integral domains and fields. Roots of polynomials. Maximal ideals, construction of fields. 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: Either MATH 416 or one of MATH 410, MATH 415 together with one of MATH 347, MATH 348, CS 373; 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>37997</td>
<td>Lecture-Discussion</td>
<td>D13</td>
<td>11:00 AM - 11:50 AM</td>
<td>MWF</td>
<td>147 - Altgeld Hall</td>
<td>Nevins, T</td>
</tr>
</tbody>
</table>

Credit Hours: 3 hours
Quant Reasoning II course.
The math major restriction will be removed during the day of December 2, 2014. Other students are welcome to add the course once the restrictions are removed.

| 37999| Lecture-Discussion    | D14     | 11:00 AM - 11:50 AM | MWF  | 147 - Altgeld Hall| Nevins, T      |

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 beginning on the first day of spring semester.

| 57716| Lecture-Discussion    | M13     | 09:30 AM - 10:50 AM | TR   | 2 - Illini Hall   | Loja Fernandes, R |

Credit Hours: 3 hours
Quant Reasoning II course.
The math major restriction will be removed during the day of December 2, 2014. Other students are welcome to add the course once the restrictions are removed.

| 57717| Lecture-Discussion    | M14     | 09:30 AM - 10:50 AM | TR   | 2 - Illini Hall   | Loja Fernandes, R |

Credit Hours: 4 hours
Quant Reasoning II course.
Departmental Approval Required
Not intended for Undergrad - Urbana-Champaign.
Instructor approval forms available in 313 Altgeld Hall beginning on the first day of spring semester.

| 37996| Lecture-Discussion    | X13     | 12:00 PM - 12:50 PM | MWF  | 147 - Altgeld Hall| Rezk, C         |

Credit Hours: 3 hours
Quant Reasoning II course.
The math major restriction will be removed during the day of December 2, 2014. Other students are welcome to add the course once the restrictions are removed.
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</thead>
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Credit Hours: 4 hours
Quant Reasoning II course.
Departmental Approval Required
Not intended for Undergrad - Urbana-Champaign.
Instructor approval forms available in 313 Altgeld Hall beginning on the first day of spring semester.