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. 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>
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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>57716</td>
<td>Lecture-Discussion</td>
<td>B13</td>
<td>09:00 AM - 09:50 AM</td>
<td>MWF</td>
<td>347 - Altgeld Hall</td>
<td>Lerman, E</td>
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<tr>
<td>57717</td>
<td>Lecture-Discussion</td>
<td>B14</td>
<td>09:00 AM - 09:50 AM</td>
<td>MWF</td>
<td>347 - Altgeld Hall</td>
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<td>2 - Illini Hall</td>
<td>Loja Fernandes, R</td>
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<td>12:00 PM - 12:50 PM</td>
<td>MWF</td>
<td>1028 - Lincoln Hall</td>
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<td>12:00 PM - 12:50 PM</td>
<td>MWF</td>
<td>1028 - Lincoln Hall</td>
<td>Kedem, R</td>
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Credit Hours: 3 hours
Quant Reasoning II course.
Credit Hours: 4 hours
Quant Reasoning II course.
Departmental Approval Required
Not intended for Graduate - Urbana-Champaign.
Instructor approval forms available in 313 Altgeld Hall.
Credit Hours: 3 hours
Quant Reasoning II course.
Credit Hours: 4 hours
Quant Reasoning II course.
Departmental Approval Required
Not intended for Graduate - Urbana-Champaign.
Instructor approval forms available in 313 Altgeld Hall.
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.