Mathematics

MATH 453  **Elementary Theory of Numbers**  credit: 3 OR 4 hours.

Basic introduction to the theory of numbers. Core topics include divisibility, primes and factorization, congruences, arithmetic functions, quadratic residues and quadratic reciprocity, primitive roots and orders. Additional topics covered at the discretion of the instructor include sums of squares, Diophantine equations, continued fractions, Farey fractions, recurrences, and applications to primality testing and cryptography. 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 241 or equivalent.

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

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<th>CRN</th>
<th>Type</th>
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<th>Time</th>
<th>Days</th>
<th>Location</th>
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<tr>
<td>32140</td>
<td>Lecture-Discussion</td>
<td>E13</td>
<td>01:00 PM - 01:50 PM</td>
<td>MWF</td>
<td>143 - Altgeld Hall</td>
<td>Luu, M</td>
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<td>Credit Hours: 3 hours</td>
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| 32144| Lecture-Discussion | E14     | 01:00 PM - 01:50 PM | MWF  | 143 - Altgeld Hall | Luu, M     |
|      | Credit Hours: 4 hours  |          |                    |      |                |            |
|      | Quant Reasoning II course. |      |                    |      |                |            |
|      | Instructor Approval Required |      |                    |      |                |            |
|      | Restricted to Graduate - Urbana-Champaign. |      |                    |      |                |            |
|      | Instructor approval forms available in 313 Altgeld Hall beginning on the first day of Fall semester. |      |                    |      |                |            |

| 32147| Lecture-Discussion | M13     | 09:30 AM - 10:50 AM | TR   | 447 - Altgeld Hall | Zaharescu, A|
|      | Credit Hours: 3 hours  |          |                    |      |                |            |
|      | Quant Reasoning II course. |      |                    |      |                |            |

| 32150| Lecture-Discussion | M14     | 09:30 AM - 10:50 AM | TR   | 447 - Altgeld Hall | Zaharescu, A|
|      | Credit Hours: 4 hours  |          |                    |      |                |            |
|      | Quant Reasoning II course. |      |                    |      |                |            |
|      | Instructor Approval Required |      |                    |      |                |            |
|      | Restricted to Graduate - Urbana-Champaign. |      |                    |      |                |            |
|      | Instructor approval forms available in 313 Altgeld Hall beginning on the first day of Fall semester. |      |                    |      |                |            |