Mathematics

MATH 415  **Applied Linear Algebra**  credit: 3 OR 4 hours.
Introductory course emphasizing techniques of linear algebra with applications to engineering; topics include matrix operations, determinants, linear equations, vector spaces, linear transformations, eigenvalues, and eigenvectors, inner products and norms, orthogonality, equilibrium, and linear dynamical systems. 4 hours of credit requires approval of the instructor and department with completion of additional work of substance. Credit is not given for both MATH 415 and any of MATH 125, MATH 225, or MATH 410. Prerequisite: MATH 241 or consent of instructor.

<table>
<thead>
<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>37957</td>
<td>Lecture-Discussion</td>
<td>A13</td>
<td>08:00 AM - 08:50 AM</td>
<td>MWF</td>
<td>245 - Altgeld Hall</td>
<td>Sabok, M</td>
</tr>
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<td>56172</td>
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<tr>
<td>40670</td>
<td>Online</td>
<td>EGR</td>
<td>ARRANGED -</td>
<td>-</td>
<td>Carpenter, B Woods, D</td>
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Credit Hours: 3 hours
Open to both undergraduate and graduate students.

Credit Hours: 4 hours
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.
Restricted to online non-degree, online MCS, and online MSME students. Instructor approval and an extra substantive project is required for students enrolling for 4 hours. Academic Outreach restrictions and assessments apply, see http://www.outreach.uiuc.edu. For more details on this course section, please see http://online.engineering.illinois.edu/descriptions/spring2011.htm

OCE Tuition $925.00 per Bill Hour, and OCE Fees $50.00 per Bill Hour.

<table>
<thead>
<tr>
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<th>Time</th>
<th>Days</th>
<th>Location</th>
<th>Instructor</th>
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<tbody>
<tr>
<td>37980</td>
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<td>F13</td>
<td>02:00 PM - 02:50 PM</td>
<td>MWF</td>
<td>223 - Gregory Hall</td>
<td>Lamzouri, Y</td>
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</table>

Credit Hours: 3 hours
Open to both undergraduate and graduate students.

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<tbody>
<tr>
<td>37983</td>
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<th>Location</th>
<th>Instructor</th>
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<tbody>
<tr>
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<td>156 - Henry Administration Bldg</td>
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Credit Hours: 3 hours
Uses Mathematica courseware. See http://www.math.uiuc.edu/timetable/ for details. Open to both undergraduate and graduate students.

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<tr>
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<tbody>
<tr>
<td>37986</td>
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Credit Hours: 4 hours
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<th>Location</th>
<th>Instructor</th>
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</thead>
<tbody>
<tr>
<td>53682</td>
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<td>09:30 AM - 10:50 AM</td>
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<td>245 - Altgeld Hall</td>
<td>Haboush, W</td>
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Credit Hours: 3 hours

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<tr>
<th>Course #</th>
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<tr>
<td>53683</td>
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<td>TR</td>
<td>245 - Altgeld Hall</td>
<td>Haboush, W</td>
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Credit Hours: 4 hours
Instructor Approval Required
Instructor approval forms available in 313 Altgeld Hall beginning on the first day of spring semester.

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<th>Location</th>
<th>Instructor</th>
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<tbody>
<tr>
<td>37972</td>
<td>Lecture-Discussion</td>
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<td>11:00 AM - 12:20 PM</td>
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Credit Hours: 3 hours
Open to both undergraduate and graduate students.
<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Section</th>
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<th>Location</th>
<th>Instructor</th>
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<td>Haboush, W</td>
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| Credit Hours: 4 hours  
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. |
| 37976      | Lecture-Discussion | Q13     | 12:30 PM - 01:50 PM | TR   | 245 - Altgeld Hall | Dutta, S   |
|            |                   |         |               |      |            |            |
| Credit Hours: 3 hours  
Open to both undergraduate and graduate students. |
| 37979      | Lecture-Discussion | Q14     | 12:30 PM - 01:50 PM | TR   | 245 - Altgeld Hall | Dutta, S   |
|            |                   |         |               |      |            |            |
| Credit Hours: 4 hours  
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. |