## Mathematics

**MATH 461  Probability Theory**  credit: 3 OR 4 hours.

Introduction to mathematical probability; includes the calculus of probability, combinatorial analysis, random variables, expectation, distribution functions, moment-generating functions, and central limit theorem. 3 or 4 undergraduate hours. 3 or 4 graduate hours. Credit is not given for both MATH 461 and either MATH 408 or ECE 313. 4 hours of credit requires approval of the instructor and department with completion of additional work of substance. Prerequisite: MATH 241 or equivalent.

<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>31859</td>
<td>Online</td>
<td>EGR</td>
<td>ARRANGED -</td>
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<td>Carpenter, B</td>
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Credit Hours: 3 hours  
Restricted to MS: Civil Engr - Online - UIUC, MCS:Computer Sci Online -UIUC, MS:Mechanical Engineerng -UIUC, MS: Aerospace Engr-Online-UIC, or MCS: Computer Sci Online-UIC.  
Restricted to online MCS, online MSME, and online MSCEE students. Center for Innovation in Teaching & Learning (CITL) restrictions and assessments apply, see http://www.oce.illinois.edu. For more details on this course section, please see http://engineering.illinois.edu/online/courses/. Online non-degree students are not eligible to register for this section.

| 38314| Online| ONL    | ARRANGED -   | -    | -        | Carpenter, B |

Credit Hours: 3 hours  
This section has an online format and requires access to Mathematica-based courseware. Students will be given information about how to sign up for an account in Mathable ($89) after enrollment in the course. Off-campus students must arrange for a proctor and must have the proctor approved during the first week of class. Please see https://netmath.illinois.edu/offcampus for proctor eligibility guidelines.