## Computer Science

**CS 199  Undergraduate Open Seminar in Computer Science**  credit: 0 TO 5 hours.  Topics vary. Approved for Letter and S/U grading. May be repeated.

<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>39380</td>
<td>Online</td>
<td>GAM</td>
<td>ARRANGED -</td>
<td>-</td>
<td>-</td>
<td>Angrave, L</td>
</tr>
<tr>
<td>39428</td>
<td>Lecture</td>
<td>REU</td>
<td>ARRANGED -</td>
<td>-</td>
<td>-</td>
<td>Katz, D</td>
</tr>
</tbody>
</table>

Credit Hours: 2 hours
Elements of Game Design
Using a professional game development platform this hands-on online course focuses on structural aspects of modern game development. Students will be able to describe, identify and use the main structural components that comprise modern 2D and 3D video game development and design, create and publish simple 2D or 3D games using an industry-standard video game development environment, test, and debug simple and common game bugs and development issues, understand at a basic level, the 3D rendering pipeline, including camera, lighting and effects, and describe the commercial, legal, human factors and technical challenges that shape game design.

Credit Hours: 3 hours
INCLUSION project
Instructor Approval Required
This course is intended for those participating in the INCLUSION project, a 10-week software-in-research training experience. Pairs of students will work on socially-impactful research centered around open source software, guided by pairs of mentors.