Computer Science

CS 498  **Special Topics**  credit: 0 TO 4 hours.
Subject offerings of new and developing areas of knowledge in computer science intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary.

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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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</thead>
<tbody>
<tr>
<td>40109</td>
<td>Lecture</td>
<td>EA3</td>
<td>11:00 AM - 12:15 PM</td>
<td>TR</td>
<td>1111 - Siebel Center for Comp Sci</td>
<td>Amir, E</td>
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</tbody>
</table>

Credit Hours: 3 hours
Topic: Reasoning in Artificial Intelligence. Prerequisites: CS473 or CS573. This class concerns reasoning techniques used and developed in Artificial Intelligence. It will include topics from reasoning with graphical probabilistic representations, sampling and variational inference, logical inference (propositional and FOL), combinations of logical and probabilistic inference techniques, and applications in natural-language processing, vision, robotics, and others. The class is suitable for graduate students and undergraduate students interested in AI and machine learning. This section is for undergraduate or graduate students.

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<tr>
<td>52640</td>
<td>Lecture</td>
<td>EA4</td>
<td>11:00 AM - 12:15 PM</td>
<td>TR</td>
<td>1111 - Siebel Center for Comp Sci</td>
<td>Amir, E</td>
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Credit Hours: 4 hours
Restricted to Graduate - Urbana-Champaign.
Topic: Reasoning in Artificial Intelligence. Prerequisites: CS473 or CS573. This class concerns reasoning techniques used and developed in Artificial Intelligence. It will include topics from reasoning with graphical probabilistic representations, sampling and variational inference, logical inference (propositional and FOL), combinations of logical and probabilistic inference techniques, and applications in natural-language processing, vision, robotics, and others. The class is suitable for graduate students and undergraduate students interested in AI and machine learning. This section is for GRADUATE students only.

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<tbody>
<tr>
<td>42391</td>
<td>Lecture</td>
<td>JH3</td>
<td>12:30 PM - 01:45 PM</td>
<td>TR</td>
<td>1103 - Siebel Center for Comp Sci</td>
<td>Hockenmaier, J</td>
</tr>
</tbody>
</table>

Credit Hours: 3 hours
Topic: Introduction to Natural Language Processing This course will provide an introduction to computational linguistics, from morphology (word formation) and syntax (sentence structure) to semantics (meaning) and natural language processing applications such as parsing, machine translation, generation and dialog systems. Prerequisites: Formal language and automata theory (CS373 or equivalent). Programming experience is necessary for the assignments. Prior exposure to linguistics is not required. This section is for either undergraduate or graduate students.

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<tr>
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<td>Lecture</td>
<td>JH4</td>
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<td>TR</td>
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Credit Hours: 4 hours
Restricted to Graduate - Urbana-Champaign.
Topic: Introduction to Natural Language Processing This course will provide an introduction to computational linguistics, from morphology (word formation) and syntax (sentence structure) to semantics (meaning) and natural language processing applications such as parsing, machine translation, generation and dialog systems. Prerequisites: Formal language and automata theory (CS373 or equivalent). Programming experience is necessary for the assignments. Prior exposure to linguistics is not required. This section is for graduate students only.
### 42700: Lecture-Discussion

**LA**

**ARRANGED - ARR - Siebel Center for Comp Sci**

Angrave, L

Credit Hours: 3 hours  
Restricted to Undergrad - Urbana-Champaign.  
Topic: Undergraduate Research Laboratory In this apprenticeship-style, hands-on laboratory, students discover what it means to be a CS researcher. Students will learn to: i) Pose testable research questions; ii) Write competitive grant proposals; iii) Create novel solutions using software and/or hardware; iv) Draw valid scientific conclusions; and v) Present and publish results, conclusions and other materials. This team-based undergraduate-only course requires the consent of the instructor. See the course website (http://www.cs.uiuc.edu/class/cs498la) for more details, enrollment restrictions and requirements. Prerequisites: Credit or concurrent registration in CS241.

### 54283: Lecture

**MC3**

09:30 AM - 10:45 AM

**TR**

1302 - Siebel Center for Comp Sci

Caesar, M

Credit Hours: 3 hours  
Topic: Networking Laboratory. This course aims to teach an understanding of software systems design through hands-on construction and experimentation with real-world implementations. This course will teach the internals of underlying technologies that make up modern wide-area, data-center, and enterprise networks. Students will perform bi-weekly projects in building, analyzing, evaluating, and deploying the communication protocols and server software that make up these systems. Special emphasis will be placed on design experience to identify a problem, propose alternative solutions, implement a prototype, and evaluate the results. Prerequisite: CS 241 (Systems Programming), or equivalent course on operating systems or networking.

### 54284: Lecture

**MC4**

09:30 AM - 10:45 AM

**TR**

1302 - Siebel Center for Comp Sci

Caesar, M

Credit Hours: 4 hours  
Topic: Networking Laboratory. This course aims to teach an understanding of software systems design through hands-on construction and experimentation with real-world implementations. This course will teach the internals of underlying technologies that make up modern wide-area, data-center, and enterprise networks. Students will perform bi-weekly projects in building, analyzing, evaluating, and deploying the communication protocols and server software that make up these systems. Special emphasis will be placed on design experience to identify a problem, propose alternative solutions, implement a prototype, and evaluate the results. Prerequisite: CS 241 (Systems Programming), or equivalent course on operating systems or networking.

### 52151: Lecture

**SNK**

09:30 AM - 10:45 AM

**TR**

1129 - Siebel Center for Comp Sci

Kamin, S

Credit Hours: 3 hours  
Topic: Generative Programming. Generative programming is programming by writing programs that produce other programs. It can be used to increase programmer productivity and program efficiency. Researchers are concerned about efficiency (especially for run-time program generation) and type-correctness; also, applications of the technique in different domains can present different challenges. We will review the research in these three areas: efficiency, type-checking, and applications. Students will apply generative programming in an application area of their own choosing. Prerequisite: CS 421