

**SU DEPARTMENT OF COMPUTER SCIENCE SYLLABUS**  
**COSC401/501 *Methods of Teaching Computer Science***

**Description:** This course introduces methods of teaching computer science at the K-12 level using an activity-based approach. Topics include history, social impacts, and contemporary fields of computer science; Fundamental computer science concepts; Problem solving strategies; K-12 computer science curriculum and classroom activity development. Students will develop and explore materials appropriate for use in the K-12 setting. Three hobiaand one hour enhancement

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<p><b>Unit # 4 Strategies for formative summative assessment</b>  Exploration of formative techniques, question types, designing exams and grading rubrics; Introduction to array.</p> <p><b>Unit # 5 Learners' alternative concepts, CS education research and more CS concepts</b>  Discussion on learners' alternative conceptions a</p>	2.0 summative

<p style="text-align: center;"><b>Capstone projects on lesson development</b></p> <p>Introduction to team project management using Scrum; Working on a team project to develop a lesson plan for a selected topic, teach it to peers and provide feedback to peer teaching.</p>	2.0
<p><b>Unit # 8 Advanced CS topics (optional)</b></p> <p>Introduction to algorithm analysis, object-oriented design and development and AP Computer Science exams.</p>	1.0
<p><b>Test</b></p> <p>Take regular final exam or pass Praxis II computer science test.</p>	1.0
<b>Total</b>	<b>14.0</b>

## EVALUATION

Homework (4 and 2 *extra for graduate students*) - 15%

Programming projects (3 and 2 *extra for graduate students*) - 25%

Writing and presentation projects (3 and 2 **extra research-based projects for graduate students**) - 20%

Midterm exams (*extra one challenging questions for graduate students*) - 20%

Final Exam (*extra two challenging questions for graduate students*) - 20%

**Policy for determining letter grade for the course**