


“...To Achieve Excellence by Guiding Individuals as They Develop the Proficiency, Expertise, and Leadership Consistent with Their Professional Roles”

College of Education and Health Professions  
Department of Teacher Education

Columbus State University

### Course Information Sheet

Course:	EDUT 5125U – Methods of Teaching Computer Science (3 credit hours)		Semester:	Summer 2011
Instructor:	Wayne Summers / Jacob Crowder		Time:	Online
Office:	CCT 453		Day(s):	Online
Phone:	(706) 568-2410		Location:	Online
Email:	<a href="mailto:wsummers@columbusstate.edu">wsummers@columbusstate.edu</a> / <a href="mailto:crowder_jacob@columbusstate.edu">crowder_jacob@columbusstate.edu</a>		Teaching Schedule:	June 13-17 July 18-22
FAX:			Prerequisites:	CPSC2105 and CPSC 2108 with grades of C or better and CPSC 5135U or CPSC 5157U
Office Hours:	M-F 10-noon or via email		Corequisites:	EDUT 5455U Practicum in Computer Science

The College of Education and Health Professions at Columbus State University prepares highly qualified teachers, counselors, and leaders who promote high levels of learning for all P-12 students by demonstrating excellence in teaching, scholarship, and professionalism. Teachers, counselors, and leaders continually acquire, integrate, refine, and model these qualities as they develop proficiency, expertise, and leadership. COE faculty guide individuals in this developmental process.

Teaching, scholarship, and professionalism encompass the highest standards represented in the five (5) core assumptions of accomplished teaching of the National Board of Professional Teaching Standards (NBPTS). The Department of Teacher Education has adopted these principles and assumptions, which are listed below, as standards for advanced teachers.

#### NBPTS Core Assumptions:

1. Teachers are committed to students and their learning.
2. Teachers know the subjects they teach and how to teach those subjects to students.
3. Teachers are responsible for managing and monitoring student learning.
4. Teachers think systematically about their practice and learn from experience.
5. Teachers are members of learning communities.

#### ADA Compliance Statement

If you have a documented disability as described by the Rehabilitation Act of 1973 (P.L. 933-112 Section 504) and Americans with Disabilities Act (ADA) and would like to request academic and/or physical accommodations please contact Joy Norman at the Office of Disability Services in the Center for Academic Support and Student Retention, Tucker Hall (706) 568-2330, as soon as possible. Course requirements will not be waived but reasonable accommodations may be provided as appropriate.

### **Course Description:**

This course provides teaching methods, models, and experiences for teaching computer science in secondary schools. Topics discussed include teaching methods, learning, security and maintenance of equipment, professional journals, ethics, legal issues, diversity, and problem solving.

### **Course Goals and Objectives**

#### **Knowledge:**

Upon successful completion of this course students will:

1. demonstrate knowledge of the Computer Science curriculum with its goals and instructional outcomes
2. demonstrate knowledge of traditional vs. new learning environments as applied to Computer Science
3. demonstrate knowledge of various programming languages along with different tools for teaching programming
4. demonstrate knowledge of project-based learning
5. demonstrate knowledge of software design
6. demonstrate knowledge of different teaching techniques needed to support different learning styles, including those techniques needed to support English Language Learners
7. demonstrate knowledge of research on best practices in teaching Computer Science

#### **Skills:**

Upon successful completion of this course students will:

1. demonstrate the ability to plan and design instructional sequences for Computer Science curriculum
2. effectively demonstrate how to use and implement computer programs written in various programming languages
3. demonstrate the ability to design enrichment activities
4. demonstrate the ability to use project-based teaching
5. demonstrate the ability to use various tools that promote effective teaching of Computer Science
6. demonstrate the ability to implement different teaching techniques in support of different student learning styles, including those needed to support English Language Learners
7. demonstrate the ability to apply research-based practices in the teaching of Computer Science

### **Course Material:**

#### **Course Requirements:**

- Actively participate in online discussions.
- Complete reading assignments and other assignments given by the instructor.
- Check Columbus State e-mail account and CougarVIEW on a regular basis for class updates and other information.
- Plan a unit of instruction for a computer science class that makes use of the different techniques needed to support different learning styles, including those needed to support English Language Learners.
- Complete a portfolio documenting your professional growth over the course of the computer science endorsement program.

- Review the research literature on computer science teaching and learning and prepare a report summarizing your findings. Discuss how you will use what you learned as you plan and teach lessons in computer science.

**Evaluation:**

Participation	15%
Written assignments (book activities)	30%
Teaching unit	20%
Portfolio	25%
Literature review	10%

**Grading Scale:**

<b>90-100</b>	<b>A</b>
<b>80-89</b>	<b>B</b>
<b>70-79</b>	<b>C</b>
<b>60-69</b>	<b>D</b>
<b>Below 60</b>	<b>F</b>

**Instructional Strategies:** A variety of instructional strategies will be employed during the class. This will include: Discussions, demonstrations, lectures and media.

**Technologies and Technical Skill Set:**

- E-mail software
- Chat forum software
- Video Conferencing software
- Video Conferencing hardware (cameras, speakers, telephone)
- CD-ROM Production
- Internet Web Editor (WebCT)
- Live broadcasting using streaming video

**Cultural Diversity:** In keeping with the Columbus State University Creed, membership in our community of scholars obligates us to practice personal and academic integrity; respect the dignity of all persons; respect the rights and property of others; celebrate diversity, strive to learn from differences in people, ideas, and opinions; demonstrate concern for others, their feelings, and their need for support in their work and development. Perspectives on the importance of cultural diversity on the various topics will be included in the discussions.

**Technology:** Students will be using the broad range of electronic technology available in the University's computer laboratories and library. Resources available include, but are not limited to, Copernic, Peachnet, Galileo, and SilverPlatter; search engines include Hotbot, Inference Find, Metacrawler, Dogpile, MetaFind, Yahoo!, Infoseek, Alta Vista, Lycos, and Northern Light.

**Attendance Policy:** Regular attendance at class or a laboratory is a student obligation. Hours of absence in excess of nine (9) in this three-semester hour course will cause you to be dropped from the class for excessive absence (CSU 2003-2004 Catalog, p. 67) (on internet that equals to three non participation times).

**Plagiarism:**

The appropriation of passages, either word for word or in substance, from the writing of another and the incorporation of those passages as one's own in written work offered for credit. It is always assumed that the written work offered for credit is the student's own unless proper credit is given the original author by the use of quotation marks and footnotes or other explanatory inserts. This includes the copying of

laboratory reports and homework, or the unchanged use of the essential ideas or conclusions of such work, as well as the footnoted use of other themes, theses, books, or pamphlets. NOTE: Plagiarism may come about through carelessness or ignorance. Every student, however, may free him/herself from uncertainties on this score by observing the special practice by each instructor for preparation of written work in his/her particular course.

**COURSE OUTLINE (tentative)**

<b>DATE</b>	<b>Reading Assignments</b>	<b>Activities</b>	<b>Assessments</b>
<b>Week 1: (June 13-17)</b>	Ch.1 – Introduction Ch.2 - Active Learning Ch.3 – Overview of CS	Activity 1 – due 6/17 Activity 2 –due 6/20 Activity 9 –due 6/20	
<b>Week 2: (June 20-24)</b>	Ch.4-Research in CSE Ch.5-Problem-Solving	Activity 22 –due 6/22 Activity 25 –due 6/24 Read Activity 28	
<b>Week 3: (June 27-July 1)</b>	Ch.6-Alternative Conception Ch.7-Teaching Methods	Activity 39 –due 6/28 Activity 42 or 50 –due 6/30	
<b>Week 4: (July 5-8)</b>	Ch.8-Lab-based Teaching Ch.9-Types of Questions	Activity 57 or 61 –due7/6 Activity 66 –due 7/8	
<b>Week 5: (July 11-15)</b>	Ch.10-Evaluation Ch.11-Teaching Planning	Activity 69 –due 7/13 Activity 77 (study unit) – due 7/15	<b>Lesson plan due 7/15</b>
<b>Week 6: (July 18-22)</b>	Ch.12-Integrated View of MTCS - Recursion Ch.13-Getting Experience in CSE	Activity 81 & 89 –due 7/22 Activity 92* -due 7/25 Teach Lego Robots camp	
<b>Week 7: (July 25-29)</b>	Ch.14-Design of a MTCS course Ch.15-HS CS Teacher Prep	Activity 95 –due 7/27 Activity * – join CRTA & NCWIT (before 7/29)	<b>Literature review due 7/29</b>
<b>Week 8: (July 31)</b>			<b>Portfolio due 7/31</b>