

“Preparing Professionals for Changing Educational Contexts”
Department of Curriculum and Instruction
College of Education, University of Nevada, Las Vegas

Course Syllabus
CIG 595E (2 credits)
RPDP AP Computer Science Summer Institute 2012
Summer Semester 2012
June 25–28, 2012

Instructor:

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COURSE DESCRIPTION:

CIG 595E: RPDP AP Computer Science Summer Institute 2012

This four-day institute is an in-depth examination of the *College Board Advanced Placement Computer Science A and AB* curricula from both content and pedagogical perspectives. Participants will examine strategies to teach in-depth to: design and implement computer-based solutions to problems; use and implement commonly-used algorithms and data structures; develop and select appropriate algorithms and data structures; code fluently in an object-oriented paradigm using the programming language Java; read and understand a large program consisting of several classes. Two credits.

GENERAL COURSE OBJECTIVES:

Knowledge

The education professional will:

- Describe the structure of the AP Computer Science course and its corresponding assessment.
- Identify appropriate classroom materials for the AP Computer Science classroom.
- Explain concepts, skills, and procedures from the AP Computer Science curriculum.
- Describe techniques and content-specific strategies that can be used in the AP Computer Science classroom.

Performance Skills

The education professional will:

- Create an instructional plan to prepare students for success in AP Computer Science course work.
- Design assessments to measure student achievement in AP Computer Science.
- Review data related to student performance the AP Computer Science Exam.

Dispositions

The education professional will be able to:

- Reflect on one’s practices to improve instruction in AP Computer Science.

- Pursue knowledge of topics relevant to AP Computer Science by reading professional journals and publications, and using media such as AP Central and electronic discussion groups.

Outcomes

The education professional will be able to:

- Understand appropriate and effective strategies to teach skills and concepts in AP Computer Science.
- Recognize traditional areas of weakness in student achievement in AP Computer Science.

Specific Course Objectives:

- Create a student-centered rather than teacher-centered classroom.
- Engage in a hands-on, minds-on approach to learning.
- Promote cooperative learning through some group or partner activities.
- Integrate technology, where appropriate.
- Build a quality AP program through identification of students with appropriate aptitude, ability, and interest.

REQUIRED TEXTS/READINGS:

- AP Computer Science A and AB Course Descriptions.
- Pre-institute readings as determined by the instructor.

COURSE REQUIREMENTS:

Participant's teaching assignment/license will determine course eligibility.

EVALUATION:

Full attendance in all sessions, out-of-session homework assignments, and active participation in the courses for the entire week is mandatory.

MODES OF INSTRUCTION:

A combination of interactive lecture, cooperative learning groups, whole-group discussion, and hands-on labs will be used to assist the teachers in developing an understanding a concept, skill, procedure, or assessment method. Technology will be used when appropriate.

ASSIGNMENTS/PERFORMANCE ASSESSMENTS:

Homework will be assigned daily, for the first three days of the four-day institute. Instructor may require pre-institute readings and/or require participants to bring lessons and activities to share with the class.

GRADING:

Attendance, Homework & Participation: 100% of total grade

COURSE SCHEDULE:

The daily schedule of the four-day institute is as follows:

| | |
|-----------------------|---------------|
| 8:00 a.m.–11:45 a.m | Class Session |
| 11:45 a.m.–12:15 p.m. | Lunch Break |
| 12:15 p.m.–4:00 p.m | Class Session |

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