

James Madison University
Content Teaching Academy in Computer Science
CS 501, Summer 2014, 3 Credits
<http://w3.cs.jmu.edu/mayfiecs/cta14>

Course Description

The 2014 CS Academy provides a broad overview of Computer Science and how to teach the topics that define the field. This course is for high school teachers preparing to offer CS Principles, the Advanced Placement curriculum under development by the College Board. You will learn effective strategies for introducing students to computing concepts without focusing solely on programming activities. JMU has recently piloted an innovative CS 101 course that features this approach and aligns with CS Principles. Come and learn how to integrate “the science of computing” in all your courses. Regardless of whether you teach intro, AP, or something else, you will leave this workshop with new ideas, new materials, and new friends.

Academy Chair / Instructor

Dr. Chris Mayfield, mayfiecs@jmu.edu
Department of Computer Science
ISAT/CS Room 208, (540) 568-3314

Dates and Times

Sessions will be held in HHS 2203 (classroom) and ISAT/CS 248 (Linux lab). A more detailed schedule with topics and speakers will be maintained on the course website.

Monday	June 23, 2014	8:30 am – 4:45 pm	6:30 pm – 8:00 pm *
Tuesday	June 24, 2014	8:30 am – 4:45 pm	
Wednesday	June 25, 2014	8:30 am – 4:45 pm	6:30 pm – 8:00 pm *
Thursday	June 26, 2014	8:30 am – 4:45 pm	
Friday	June 27, 2014	8:30 am – 12:00 pm	

* These two additional sessions are required of participants seeking graduate credit. The summer semester officially ends on August 8, 2014.

Goals and Objectives

The goal of the Content Teaching Academy is to provide high quality professional programs for the educators of Virginia by offering in-depth studies in a range of content areas and pedagogical emphases that engage participants in critical dialogues of practice. Specific objectives include:

1. Improve teachers' content knowledge within their disciplines.
2. Improve teachers' ability to teach in content oriented classrooms.
3. Assist teachers in designing lessons which integrate the use of technology into instruction.
4. Increase teachers' ability to provide meaningful instruction for diverse learners.
5. Assist teachers with designing instruction that incorporates critical thinking skills.

In addition, the Computer Science Academy's objectives are to:

6. Provide numerous hands-on experiences that expose CS teachers to new ideas and tools.
7. Help establish professional contacts and create a supportive community of CS educators.
8. Increase awareness of and interest in computer science issues in the K-12 environment.
9. Equip participants with engaging teaching materials, lesson plans, and classroom activities.

Course Requirements

Attendance Only

All participants of the CS Academy are expected to:

1. Complete readings distributed during the week.
2. Attend and participate in all academy sessions.

Certificates of completion documenting 30 hours of professional development will be mailed only to participants *with perfect attendance records*. The CTA will not issue partial completion certificates.

Graduate Credit

In addition to the attendance only requirements:

3. Attend two additional sessions on Monday and Wednesday evening.
4. Complete one of the follow-up options below by the end of summer.

Graduate credit participants will NOT receive a certificate of completion. Your official transcript from JMU will provide documentation of successful completion.

Follow-up, Option 1

This option is designed for teachers wishing to focus on CS pedagogy. Participants will be required to develop at least four lessons based on content presented in the academy sessions. Strategies from the academy must be central to each lesson, not just add-on or peripheral activities. Each lesson plan must:

- Include a title, topic, grade level, CSTA standards, and time frame.
- Specify student learning objectives.
- Describe strategies and activities to be used, with notes referencing academy sessions.
- Describe how student learning will be assessed.

Participants must post each lesson plan to Google Drive by **Monday, July 14th at 9:00 am**. No late work will be accepted. Two or three other participants will peer review each lesson and respond to the author with ideas, questions, and suggestions. The author may or may not choose to revise the lesson plan based on this feedback, but must provide a coherent response if she/he chooses not to. All reviews must be posted to Google Drive by **Monday, July 28th at 9:00 am**. We encourage you to provide additional feedback and share your experiences during the school year after implementing the lessons developed in this course.

Follow-up, Option 2

This option is designed for teachers wishing to focus on CS content. Participants will be required to complete the following independent study activities:

- Read selected sections of the textbook and complete review exercises.
- Work through tutorials and lab activities from JMU's CS 101 course.
- Demonstrate mastery of course content by taking online assessments.

During the academy week, you will develop a study plan based on your needs and interests. You are expected to complete at least six chapters/modules of the course. Each assessment will be a 20-minute quiz that includes multiple choice, true false, fill in the blank, vocabulary matching, and free response questions. You must answer 80% or more of the questions correctly to receive credit. If necessary, you will be allowed to retake up to three quizzes. All coursework must be submitted by **Friday, August 8th at 9:00am**. We encourage you to complete your study plan well before the deadline so that we can answer your questions along the way.

Evaluation Criteria

The following section applies only to participants enrolled for graduate credit and option 1.

Lesson Materials

Each lesson developed is worth 10 points and will be evaluated as follows:

- The materials contain all components specified in the template, described in sufficient detail for others to be able to respond and formulate questions. (+2 points)
- Lesson objectives and goals are based on the CSTA standards and reflect intent for students to make sense of the Computer Science ideas to be learned. (+2 points)
- Key materials and strategies are based on academy sessions. References to specific academy sessions are noted. (+2 points)
- Assessment techniques reflect instructional strategies and are linked to the lesson objectives and goals. (+2 points)
- The lesson sequence and activities are connected and build on one another. (+2 points)

Feedback Responses

All feedback you provide to other participants will be evaluated on a 3-point scale:

- Thoughtful reflection that includes your own ideas, questions, and specific suggestions for improvement. (3 points)
- Reflection is specific but does not address one of the following: your own ideas, questions, and suggestions for improvement. (2 points)
- Reflection does not address two of the following: your own ideas, questions, and suggestions for improvement. (1 point)
- Reflection is non-existent OR lacks any specific ideas, questions, and suggestions for improvement. (0 points)

Grades and Transcripts

Perfect attendance is required to pass the course. Letter grades will be assigned using the scale A=90%–100%, B=80%–89%, C=70%–79%, F=0%–69%.

Course grades will be posted no later than August 12, 2014. JMU does not mail official grade notices. To request a copy of your transcript, please contact the registrar's office directly via: <http://www.jmu.edu/registrar/transcripts.shtml>

JMU Policies

Academic Honesty

Participants are expected to comply with the JMU Honor Code, available from the Honor Council website: <http://www.jmu.edu/honor/code.shtml>. Academic dishonesty or plagiarism in any form will not be tolerated, and will result in an automatic zero for the assignment. Please contact the instructor if you have questions regarding academic honesty.

Adding/Dropping

1. The deadline to *add* a CTA 2014 course is Monday, 06/23/2014 at 6:15 PM.
2. The deadline to *drop* a CTA 2014 course is Monday, 06/23/2014 at 6:15 PM.
A full refund of the graduate tuition will be processed.
3. The final day to *withdraw passing* (WP) from a CTA 2014 course is Thursday, 06/26/2014.
No refund will be processed.
4. The final day to *withdraw failing* (WF) from a CTA 2014 course is Thursday, 07/17/2014.
No refund will be processed.

Disability Services

If you have a documented disability and will be requesting accommodations in this course, please register with the Office of Disability Services (<http://www.jmu.edu/ods>, Wilson Hall, Room 107, 540-568-6705). They will provide you with an Access Plan Letter to verify your need for services and make recommendations for the course. I will be happy to discuss your access plan with you.

Inclement Weather

For severe weather and other unexpected circumstances, watch for announcements relating to make-up work. See <http://www.jmu.edu/JMUpolicy/1309.shtml> for JMU's cancellation policy. Although the schedule may adapt to canceled classes, assignment deadlines generally do not change.

Other Accommodations

Participants who are unable to attend sessions due to university sponsored activities or personal religious observances may request reasonable accommodations. Please notify the instructor *before the academy begins* regarding potential conflicts, so that we can determine alternative methods for you to complete the required work.