

James Madison University
Content Teaching Academy in Computer Science
CS 585, Summer 2013, 3 Credits

<http://w3.cs.jmu.edu/mayfiecs/cta13>

Course Description

The 2013 CS Academy provides an overview of content and teaching methods for introductory programming courses and AP Computer Science. You will learn effective strategies for teaching the fundamentals, including decisions and loops, arrays and objects, recursion and inheritance, and debugging and testing. We will sharpen your skills in the Java and Python programming languages and introduce several cutting edge learning environments like Scratch, Greenfoot, and AppInventor. The course will give you hands-on experience with lesson plans for engaging team-based classroom activities. We will also present automated grading and assessment techniques, both for program correctness and coding style.

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 ISAT/CS 243 (classroom) and ISAT/CS 248 (Linux lab). A detailed schedule with topics and speakers will be maintained on the course website.

Monday	June 24, 2013	8:30 am – 4:45 pm	6:30 pm – 8:00 pm *
Tuesday	June 25, 2013	8:30 am – 4:45 pm	
Wednesday	June 26, 2013	8:30 am – 4:45 pm	6:30 pm – 8:00 pm *
Thursday	June 27, 2013	8:30 am – 4:45 pm	
Friday	June 28, 2013	8:30 am – 12:00 pm	

* These two additional sessions are required of participants seeking graduate credit. The summer semester officially ends on August 2, 2013.

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 the follow-up project below after the week of the Academy.

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

Project, Part 1

Participants who select the graduate credit option will be required to develop at least five lessons based on content learned in the academy sessions. Strategies from the content 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 as a single file to a discussion board by Monday, July 15, 2013 at 9:00 am. No late work will be accepted.

Project, Part 2

Participants will reflect on the effectiveness of these lessons and receive feedback from their peers. Two or three colleagues will review each lesson and respond to the author with ideas, questions, or suggestions to think about before teaching the lesson. The author may or may not choose to revise the lesson plan based on this feedback. All responses must be posted by Monday, July 29, 2013 at 9:00 am. We also encourage you to provide additional feedback and share your experiences during the school year after implementing materials developed in this course.

Evaluation Criteria

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

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 6, 2013. 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 2013 course is Monday, 06/24/2013 at 6:15 PM.
2. The deadline to *drop* a CTA 2013 course is Monday, 06/24/2013 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 2013 course is Thursday, 06/27/2013.
No refund will be processed.
4. The final day to *withdraw failing* (WF) from a CTA 2013 course is Thursday, 07/18/2013.
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.