



MSIT'15 Academy
Department of Mathematics
201 Donaghey Avenue
Conway, AR 72035

Dr. Ramesh Garimella, Chair
Department of Mathematics
University of Central Arkansas
201 Donaghey Avenue
Conway, AR 72035

Activities

The MSIT'15 Program will offer enriched activities for 9th, 10th, & 11th grade students in central Arkansas in mathematics and related fields of science. The MSIT'15 Program provides a setting that is conducive to active learning and the exchange of ideas related to theory and practice in the areas of Science, Technology, Engineering, and Mathematics. Our dynamic instructional environment integrates topics related to sciences and mathematics with hands-on activities. See the other side of this brochure for the activities and descriptions. All sessions will be conducted by UCA professors.

General Information

While some refreshments will be provided, participants should bring their own lunch. Students will have computers available for computations. All activities will be conducted in the Mathematics and Computer Science building and Lewis Science Center at UCA. A map of the university will be included in the registration packet to show the drop-off and pick-up points for students. Applications will be processed in the order received. We encourage students to apply as soon as possible as space is limited. Preference will be given to students in central Arkansas.

Contact Information

Complete information about the MSIT'15 Program (such as more detailed description, activities, and application materials) is available on our Website:
www.uca.edu/math/news/

For questions, contact:

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Fax: (501) 450-5662
E-mail: rameshg@uca.edu

Program Information

Fee*: \$100 per participant

Dates: July 13-17, 2015

Time: 9:00 AM - 4:30 PM

Lunch time: 12:00-2:00 PM
Bring your own lunch

Lunch time activities include:

- Visit to UCA Planetarium
- Campus Tour
- Group Photo
- Information on Math & Science programs at UCA
- Visit Chemistry and Biology Labs

Location:
Math and Computer Science Building

Eligibility:

Participant must be a 9th, 10th, or 11th grade student during 2015-16 school year.

Deadline for application:

June 13, 2015

***A limited number of fee waivers are available. For more information please call the number listed in the contact information.**

University of Central Arkansas

MSIT'15

**Mathematics, Science, &
Information Technology
Summer Academy
July 13-17, 2015**



**Presented by
Department of Mathematics
&
UCA STEM Institute**



Registration Form

MSIT'15

The **MATHEMATICS, SCIENCE, & INFORMATION TECHNOLOGY ACADEMY (MSIT)** is a summer program offered during the week of July 13-17, 2015 by the Department of Mathematics and the STEM Institute at the University of Central Arkansas. This one-week program is designed for promising 9th, 10th, and 11th grade students in central Arkansas. The main objective of the program is to stimulate and enhance interest in mathematics and its applications to computer science. UCA's mathematics and computer science faculty members will lead investigations that link their areas of specialty with realistic and scientific applications. Participants will conduct experiments, collect and analyze data, develop mathematical models utilizing computers, and use the results to make predictions and solve problems involving coding and decoding secret messages and utilize web development tools while creating their own Blog and developing a multimedia website.

Coding and Decoding Secret Messages

Dr. R. Garimella & Dr. R.B. Lenin (Math Faculty)

Coding and decoding, also known as Cryptography, is the art of secret communication. It involves transforming a plain message into a jumbled text so that no one other than the intended receiver will be able to decipher and comprehend the message.



Due to rapid usage of modern communication technologies, security has become a serious concern in terms of tampering with vital messages that are being transmitted over the Internet or hand-held devices. A great deal of modern cryptography depends upon basic number theory, clever manipulations of large integers, and use of software such as Excel. In this program, students will be introduced to the essentials of number theory and Excel for encryption. Students will gain hands-on experience in encrypting and decrypting messages.

Web Programming Using HTML, Javascript and PHP

Dr. Mark Smith (Computer Science Faculty)

This workshop applies the most popular Web technologies and services used in building an e-commerce website is offered. Web technologies such as HTML 5, Cascading Style Sheets (CSS), Javascript, PHP, along with web services provided from Google and PayPal provide students with all the tools needed to build a complete and functional e-commerce website. Students will also utilize web development tools while creating their own Blog. The course will be conducted in a hands-on computer laboratory setting provided and maintained by the UCA Math Department. Students will utilize Microsoft Visual Studio Professional when developing a multimedia website that integrates images, audio, video, and animations. Students will fully implement and test their website using Visual Studio before publishing it to a free web-hosting site that supports PHP.



PICTURES FROM MSIT'14

Instructions: Please complete this form and return to the UCA Math Department along with check for \$100 (payable to MSIT '15 @ UCA). See reverse side for address. You may complete the form at:

<http://tinyurl.com/MSIT15-uca>

Student Name _____

Parent/Guardian Name _____

Address _____

City _____

State _____ Zip _____

Home Phone# _____

E-mail _____

Grade in 2015-16 school year _____

School attended _____

Name of activity you would like to attend:
(check only one box):

Cryptology: Coding and Decoding

Web Programming Using HTML, Javascript and PHP

