Program Description

Algebra is one of the most difficult topics for students to learn. It is considered the gatekeeper for student’s pursuit of careers in science, technology, engineering, and mathematics (STEM). Working with K-12 educators, the UC Davis K-14 Outreach Center for Computing and STEM Education (C-STEM) has developed a new strategy to support Algebra instruction. This academy trains educators who teach Pre-Algebra and Algebra I to effectively use this new strategy. Through a sequence of well-designed simple, concise, and self-contained math lab sessions, basic concepts of Algebra will be reinforced through practical applications. Concurrently, students will learn the fundamentals of computing, underlying working principles of computers, and computer programming for problem solving. The C-STEM Center and the NSF CREST Program will help trainees to implement the program.

Outline of Topics

- Order of Arithmetic Operations
- Fundamental Properties of Numbers
- Distance and Midpoint of Two Points
- Graphing and Solving Linear Equations and Systems of Linear Equations
- Understanding Functions
- Evaluating Polynomials
- Graphing and Solving Quadratics
- Plotting Inequalities and Systems of Inequalities
- Systems of Linear Equations
- Graphs of Rational Functions
- Radical Function

Outcome for Trainees’ Students:

1. Through a set of interactive computing and applied problem solving activities in a C/C++ interpreter Ch, students will gain a better understanding of algebra concepts and their applications.
2. Students will learn the fundamentals of computing, underlying working principles of computers, and computer programming for problem solving.
3. Students will be able to participate in the UC Davis Robot Competition. See Link: http://c-stem.ucdavis.edu/activities/c-stem_day/

Details

Cost: FREE. For in-service teachers only. All attendees will receive software licenses, teaching materials, solutions manuals, and UC Davis C-STEM Center implementation support. Laptops are necessary during the training. 24 Professional Development Credit hours upon training completion for teachers in Yolo County (Sacramento pending).

Registration

Registration required. Please register for the academy through the website before July 28th to reserve your space.

Organizer: the UC Davis K-14 Outreach Center for Computing and STEM Education (C-STEM)
Sponsor: Yolo and Sacramento County of Education
Financial Supporter: National Science Foundation under the Grant CNS-1132709
Instructors: NSF CREST fellows (Washington USD: Francesca DeFazio 6th-8th, Megan Schoellhamer 6th-8th. Sacramento City USD: Michael Moore 9th-12th. Esparto USD: Spencer Krautkraemer 7th-8th. UCD School of Education: Ryan Mangan)

Summer Academy on C-STEM Education Coordinator: Heidi Espindola (heidi.espindola@twinriversusd.org)
Pre-Algebra and Algebra I Support Academy Coordinators: Francesca DeFazio and Megan Schoellhamer (fdefazio@wusd.k12.ca.us  mshoellhamer@wusd.k12.ca.us )
Technology and Design Academy Coordinator: Chris Schlesselman and Spencer Krautkraemer (Chris-Schlesselman@sac-city.k12.ca.us  samsdadisme@yahoo.com )

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