

UCR Extension
University of California, Riverside
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Certificate in
**Science and Mathematics
Mentor Teacher/Coach**



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Mathematics
Mentor
Teacher/Coach**

**Learn for
Coaching
Teachers**



Certificate in
Science and Mathematics Mentor Teacher/Coach

THE PROGRAM

The Science and Mathematics Mentor Teacher/Coach Certificate program assists middle school and high school science and mathematics teachers in developing skills to serve as mentors or coaches to other teachers and/or pre-service students. Strategies that develop leadership skills for coaching colleagues and create collaborative school learning environments are presented. The program collaboration with the Science Mathematics Initiative (SMI) at UCR, and the Inland Area Science Project assists in developing mentors who can work with UCR students that want to become mathematics and/or science teachers in becoming mentors at their school sites. Coursework will present information in the following areas:

- Coaching models appropriate for science and mathematics teachers
- Developing curriculum units in mathematics and science that include educational objectives, multiple measures of assessment and critical and creative thinking skills
- Organizational and project management skills
- Family, community and professional partnerships in educational environments
- Using technology to analyze student learning and deliver presentations
- Methods for developing collaborative school learning environments
- Content courses in mathematics or science
- Practicum experience in three areas of pedagogy, leadership and mathematics and/or science
- Portfolio development
- Reflection of teaching philosophy

ADMISSION

The certificate program is open to fully credentialed science and mathematics middle school or high school teachers who want to become mentors or coaches at their school sites.

REQUIREMENTS

To earn the certificate, participants must successfully complete 14 quarter units—8 required units and 6 elective units, with a grade of “B” or better.

TRANSFER CREDIT

Four quarter units of credit from other institutions are permitted if the courses relate directly to the content of certificate coursework. Applicable courses taken through University Extension prior to application may be counted toward the certificate. Coursework must be taken within the last five years and must be taken at the upper division or graduate level. Requests for transfer credit must be in writing and official transcripts must accompany the request. The requests for transfer credit must be approved by the Director of Education Extension.

TO ENROLL IN THE PROGRAM

An enrollment form must be filed along with a nonrefundable fee of \$50 before the completion of the third course. The nonrefundable fee covers academic advisement, tracking of progress/completion and updates on program changes and additions. Enrollment forms are available in Extension’s quarterly catalog, at Student Services, in program department offices and on the Web site:
www.extension.ucr.edu/certificates.

CORE COURSES (8 units)

Effective Strategies for Mentor Teachers/ Coaches in Science and Mathematics

Education X314.75 (2 units)

Introduction to coaching models appropriate in science and mathematics classrooms. Effective strategies for developing skills to serve as mentor teachers to other teachers and/or pre-service students. Methods for designing and classifying educational objectives, creating assessments and developing a curriculum that includes higher-level thinking skills.

Instructional Leadership as a Springboard to Exemplary Teaching

Education X355.1 (3 units)

Exploration of the role of the teacher as an instructional leader and exemplary teacher. This course presents skills necessary for coaching colleagues and presenting to parents, and provides opportunities for reflection of each individual's teaching philosophy and skill in relation to site, district and state standards.

Practicum in Mentor Teaching/Coaching

Education X314.78 (3 units)

The practicum experience focuses on three areas—pedagogy, leadership and mathematics and/or science content. Participants develop a portfolio as an end product and a video of themselves teaching a lesson in mathematics or science.

ELECTIVE COURSES (6 units)

One of the elective courses must be in a content area course in mathematics or science.

Using Organizational and Project Management Skills to Create Effective Educational Environments

Education X355.3 (1 unit)

Developing Collaborative School Learning Environments

Education X314.80 (2 units)

Family, Community and Professional Partnerships in Educational Environments

Education X355.5 (1 unit)

The Theory of Multiple Intelligences- Educational Implications and Applications

Education X324.32 (3 units)

Effective Presentations Using Technology

Education X325.57 (1 unit)

Using Technology to Analyze Student Learning

Education X355.57 (1 unit)

CONTENT AREA COURSES IN SCIENCE/MATHEMATICS (4 units from the following courses)

Mathematics

Strategies for Effective Mathematics Instruction

Mathematics X432 (4 units)

Using Technology to Teach Mathematics

Mathematics X409.16 (4 units)

Developing the Real Number System

Mathematics X405 (4 units)

Developing the Real Number System, Part B

Mathematics X405.B (4 units)

College Algebra

Mathematics X409 (4 units)

Linear Algebra

Mathematics X409.1 (4 units)

Non-Linear Algebra

Mathematics X409.2 (4 units)

Advanced Algebra

Mathematics X409.3 (4 units)

Fundamental Concepts of Geometry, Part I

Mathematics X415.1 (4 units)

Fundamental Concepts of Geometry, Part II

Mathematics X415.2 (4 units)

Trigonometry and Problem Solving

Mathematics X428.5 (4 units)

Probability and Statistics, Part A

Mathematics X429.A (4 units)

Probability and Statistics, Part B

Mathematics X429.B (4 units)

Content and Methods for Teaching Advanced Placement Calculus

Mathematics X435 (3 units)

Content and Methods for Teaching Advanced Placement Statistics

Statistics X 450 (3 units)

Science

Introduction to Science

Geosciences X403 (4 units)

Topics in Chemistry

Chemistry X 400.6 (4 units)

Chemistry I: Introduction to Chemistry

Chemistry X420.A (2 units)

Chemistry II: Structure of Matter/Chemical Bonding

Chemistry X420.B (3 units)

Chemistry III: Matter, Chemical Reactions, Nuclear

Chemistry X420.C (3 units)

Chemistry IV: Physical and Organic Chemistry

Chemistry X420.D (3 units)

Content and Methods for Teaching Advanced Placement Chemistry

Chemistry X450 (3 units)

Content and Methods for Teaching Advanced Placement Biology

Biology X403.5 (3 units)

Biological Sciences and Lab

Biology X450 (3 units)

Topics in Biological Sciences

Biology X451 (2 units)

Topics in Teaching Genetics

Biology X 475 (3 units)

Environmental Science and Ecology for Educators

Environmental Science X475 (3 units)

Botany for Educators

Botany X450 (3 units)

Principles of Geology

Geology X480 (4 units)

Astronomy

Geology X481.1 (1 unit)

Oceanography

Earth Science X405 (2 units)

Weather and Climate

Earth Science X406 (3 units)

Introduction to the Concepts of Physics

Physics X412.A (4 units)

Concepts of Physics: Mechanics

Physics X412.B (3 units)

Physics: Electricity and Magnetism

Physics X412.C (3 units)

Physics: Heat and Waves

Physics X412.D (3 units)



For more information, please contact
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