

School of Education

Richard Arum, Dean

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The School of Education is a unique interdisciplinary academic unit committed to promoting educational success in and out of school for ethnically and economically diverse learners from preschool through college through collective research, teaching, and service activities. The multidisciplinary faculty includes scholars in psychology, sociology, economics, linguistics, language and literacy, policy, race and ethnicity, and the achievement gap. Their research addresses core issues in contemporary education: (1) equity of opportunity for ethnically, linguistically, and economically diverse learners; (2) teaching and learning in science and math; (3) language and literacy development; (4) early childhood education and development; (5) out-of-school learning; and (6) effective interfaces between technology and education.

The School integrates the themes of Learning, Cognition, and Development; Educational Policy and Social Context; and Language, Literacy, and Technology across its programs, including the minor in Education, the B.A. in Education Sciences, the Ph.D. in Education, and the Master of Arts in Teaching/Credential program. Scholarly work arises from the common belief that education environments, both in and out of school, are the sites of change in the quality of life and the availability of productive life choices for learners of all ages.

Honors

Graduation with Honors. Honors at graduation, e.g., *cum laude*, *magna cum laude*, *summa cum laude*, are awarded to approximately the top 16 percent of the graduating seniors. To be eligible for honors, a general criterion is that students must have completed at least 72 units in residence at the University of California. The student's cumulative record at the end of the final quarter is the basis for consideration for awarding Latin honors. Other important factors are considered visit at Honors Recognition (<http://catalogue.uci.edu/honors/>).

- Education Sciences, B.A.
- Education, Minor
- Education, Ph.D.
- Elementary and Secondary Education, M.A.T.

Requirements for the Undergraduate CalTeach Science and Mathematics Single Subject Credential Program

The CalTeach Science and Mathematics Single Subject Credential Program is jointly sponsored by the Schools of Biological Sciences, Physical Sciences and Education.

The following academic units offer undergraduates an option to earn a bachelor's degree while concurrently satisfying requirements for a Single Subject Teaching Credential in Biological Sciences, Chemistry, Earth System Sciences, Mathematics, or Physics. Interested students should consult degree program options described in this *Catalogue* or talk with a counselor in the CalTeach Resource and Advising Center (137 Bison Modular). With careful, early planning, it is possible for students to complete their bachelor's degree and teaching credential in four years. More information is also available at the UCI CalTeach website (<https://calteach.uci.edu/>).

Prior to Entry in the CalTeach Single Subject Credential Program:

- Declare one of the following majors: Biology/Education, Physics, Chemistry, Mathematics or Earth System Science with a Concentration in Education and Secondary Teaching Certification;
- Successful completion of PHY SCI 5/BIO SCI 14 with a C+ or higher;
- Successful completion of PHY SCI 105/BIO SCI 101 with a C+ or higher;
- Complete a CalTeach Program enrollment form, indicating intent to complete requirements for the Single Subject Teaching Credential for mathematics or one of the science disciplines. This must be done by the end of an undergraduate's second year at the latest, and prior to enrolling in EDUC 55, which would typically be completed in fall of the third year. Enrollment forms are available in the CalTeach Science and Mathematics Resource and Advising Center (137 Bison Modular), or by contacting the CalTeach Counselor.

Prior to the Start of Student Teaching:

- Pass the California Basic Education Skills Test (CBEST);
- Pass the California Subject Exam for Teachers (CSET) or complete a subject-matter preparation program (available for Mathematics only);
- Hold a current Certificate of Clearance from the State of California;
- Hold a current TB test with negative results.

Courses and Fieldwork

Candidates who enroll in the undergraduate CalTeach Single Subject Teacher Credential program at UCI are generally required to take the following courses.

| | |
|------------------------------|---|
| PHY SCI 5/BIO SCI 14 | California Teach 1: Introduction to Science and Mathematics Teaching |
| PHY SCI 105/BIO SCI 101 | California Teach 2: Middle School Science and Mathematics Teaching ¹ |
| CHEM/PHYSICS 193/BIO SCI 108 | Research Methods |
| MATH 8 | Explorations in Functions and Modeling (Mathematics candidates) |
| LPS 60 | The Making of Modern Science (Science candidates) |
| or | |
| MATH 184- 184L | History of Mathematics and History of Mathematics Lesson Lab (Mathematics candidates) |
| EDUC 55 | Knowing and Learning in Mathematics and Science ¹ |
| EDUC 109 | Reading and Writing in Mathematics and Science ¹ |
| EDUC 143AW | Classroom Interactions I |
| EDUC 143BW | Classroom Interactions II |
| EDUC 148 | Complex Pedagogical Design ¹ |
| EDUC 158 | Student Teaching Mathematics and Science in Middle/High School ¹ |

¹ In order to be recommended for the Preliminary Single Subject Credential, a grade of C or better is required in the following CalTeach teacher credential program courses: PHY SCI 105/BIO SCI 101; EDUC 55, EDUC 109, EDUC 143AW, EDUC 143BW, and EDUC 148. A grade of C or better is required for all sections of EDUC 158 (a repeatable course) that students complete, including all EDUC 158 sections with a student teaching requirement.

Student teaching for Single Subject candidates in the undergraduate CalTeach program is defined as a minimum of four hours per day, five days per week for at least one full public school semester in an appropriate classroom setting in middle or high school.

Readiness for student teaching shall be determined by, but not be limited to, the candidate's academic work, professional conduct, and potential for success in teaching. Failure to be advanced to student teaching will be considered good cause for removal and/or a leave of absence from the program.

Applying for a California Credential

In addition to fulfilling all of the above requirements, an applicant must:

- Show evidence of a college-level course, or pass an approved examination on the U.S. Constitution;
- Obtain a CPR certificate in Adult, Child, and Infant resuscitation training;
- Pass the Teacher Performance Assessment
- Official UCI transcript must show that bachelor's degree has been awarded.

If competence has been demonstrated by the conclusion of the student teaching program, and all other CTC and Departmental requirements are met, the undergraduate candidate is eligible for a preliminary credential through UCI.

Supplementary and Additional Teaching Authorizations. After acquiring a basic credential, it is possible to add further teaching authorizations. Consult an academic counselor in the School of Education for details.

On This Page:

- Multiple Subject Teaching Credential
- Single Subject Teaching Credential
- Administrative Services Credential

Teaching and Service Credential Programs

The School of Education is authorized by the Commission on Teacher Credentialing to offer teacher and school administrator professional preparation programs for California teaching and service credentials. The School offers programs for multiple and single subject credentials through the Master of Arts in Teaching Program. Also, in partnership with the School of Biological Sciences and the School of Physical Sciences, the School of Education offers the Cal Teach Science and Mathematics Program, an undergraduate Student Teacher Credential program for aspiring science or mathematics teachers. Additionally, in cooperation with UCI Division of Continuing Education, the School offers Administrative Services Credential programs and a Reading Certificate program.

Multiple Subject Teaching Credential

The Multiple Subject Teacher Credential pathway is embedded in the UCI Master of Arts in Teaching/Credential Program. (http://catalogue.uci.edu/schoolofeducation/elementaryandsecondaryeducation_mat/)

Single Subject Teaching Credential

The Single Subject Teacher Credential pathway is embedded in the UCI Master of Arts in Teaching/Credential Program (http://catalogue.uci.edu/schoolofeducation/elementaryandsecondaryeducation_mat/). The program supports preparation to teach secondary art, English, mathematics, social science, science(s), and world languages.

Undergraduate CalTeach Science and Mathematics Single Subject Credential Program

The CalTeach Science and Mathematics Single Subject Credential Program is jointly sponsored by the Schools of Biological Sciences, Physical Sciences, and Education. The following academic disciplines: Biological Sciences, Chemistry, Earth System Sciences, Mathematics, and Physics offer undergraduates an option to earn a bachelor's degree while concurrently satisfying requirements for a Single Subject Teaching Credential. Interested students should consult degree program options described in this Catalogue or talk with a counselor in the CalTeach Resource and Advising Center (137 Bison Modular). With careful, early planning, it is possible for students to complete their bachelor's degree and teaching credential in four years. More information is also available in the CalTeach section of the Catalogue.

Administrative Services Credential

The School of Education sponsors a program through UCI Division of Continuing Education leading to the Administrative Services Credential. The Preliminary Administrative Services Credential is obtained by completing the approved program of 36 quarter units and the California Administrator Performance Assessment (CalAPA). This credential also requires a valid basic credential, five years of full-time teaching or services experience, and passage of the basic skills requirement.

The Clear Administrative Services Credential begins when an administrative position is obtained. The UCI Clear Administrative Services program requires the successful completion of two years of full-time school administrative experience, the Preliminary Administrative Services Credential, and 10 quarter units (Education X399A Induction and Education X399B Final Evaluation) which provide structured mentoring, self-assessment, and formative/summative evaluation of the candidate. Those interested in these credentials should visit the UCI Division of Continuing Education website (<https://ce.uci.edu>) or email education@ce.uci.edu.

Faculty

June Ahn, Ph.D. University of Southern California, *Associate Professor of Education*

Jonathan Alexander, Ph.D. Louisiana State University, *Associate Dean, Division of Undergraduate Education and Chancellor's Professor of English; Culture and Theory; Education; Gender and Sexuality Studies; Informatics* (writing studies, sexuality studies, queer theory, new media studies)

Richard Arum, Ph.D. University of California, Berkeley, *Dean of the School of Education and Professor of Education; Criminology, Law and Society; Sociology*

Drew Bailey, Ph.D. University of Missouri, *Associate Professor of Education; Cognitive Sciences; Psychological Science*

Rachel Baker, Ph.D. Stanford University, *Assistant Professor of Education*

Frank D. Bean, Ph.D. Duke University, *UCI Distinguished Professor Emeritus of Sociology; Economics; Education* (international migration, demography, Mexican immigration, racial and ethnic relations, economic sociology, family)

Robert J. Beck, Ph.D. University of Chicago, *Senate Emeritus of Education*

Henry J. Becker, Ph.D. Johns Hopkins University, *Professor Emeritus of Education*

Rebecca W. Black, Ph.D. University of Wisconsin-Madison, *Associate Professor of Informatics; Education* (digital media and learning, fan studies)

Liane R. Brouillette, Ph.D. University of Colorado Boulder, *Professor of Education* (educational policy, arts-based learning)

Andres Bustamante, Ph.D. University of Miami, *Assistant Professor of Education*

Shanyce L. Campbell, Ph.D. University of North Carolina at Chapel Hill, *Assistant Professor of Education*

Gustavo Carlo, Ph.D. Arizona State University, *Professor of Education*

Elizabeth E. Cauffman, Ph.D. Temple University, *Professor of Psychological Science; Criminology, Law and Society; Education; School of Law* (adolescent development, mental health, juvenile justice, legal and social policy)

Vanitha Chandrasekhar, Ed.D. University of California, Irvine, *Lecturer of Education* (education technology)

Chuansheng Chen, Ph.D. University of Michigan, *UCI Chancellor's Professor of Psychological Science; Education* (cross-cultural psychology, adolescent development, cognitive neuroscience, genes and behavior)

Penelope R. Collins, Ph.D. University of Toronto, *Associate Professor of Education*

Gilberto Q. Conchas, Ph.D. University of Michigan, *Professor of Education; Asian American Studies; Sociology* (urban education, sociology of education, comparative race and ethnicity)

AnneMarie M. Conley, Ph.D. University of Michigan, *Associate Professor of Education*

Helen De La Maza, M.A. Oregon State University, *Lecturer of Education*

Shayan Doroudi, Ph.D. Carnegie Mellon University, *Assistant Professor of Education; Informatics* (learning analytics, learning sciences, educational technology)

Nia Dowell, Ph.D. The University of Memphis and Institute for Intellect Systems, *Assistant Professor of Education* (learning analytics, online group interaction, computational linguistics, technology, STEM)

Greg Duncan, Ph.D. University of Michigan, *UCI Distinguished Professor of Education; Economics; Psychological Science* (economics of education, program evaluation, child development)

Jacquelynne S. Eccles, Ph.D. University of California, Los Angeles, *UCI Distinguished Professor of Education; Psychological Science* (academic motivation and achievement, school and family influences on adolescent development, gender and ethnicity in STEM fields)

Dennis Evans, Ed.D. University of Southern California, *Non-Senate Academic Emeritus of Education*

George Farkas, Ph.D. Cornell University, *UCI Distinguished Professor of Education; Sociology* (educational achievement gaps, interventions, educational policy)

David John Frank, Ph.D. Stanford University, *Professor of Sociology; Education; Political Science* (globalization, sexuality, the natural environment, higher education)

Brandy Gatlin-Nash, Ph.D. Florida State University, *Assistant Professor of Education; Language Science*

Wendy A. Goldberg, Ph.D. University of Michigan, *Professor Emerita of Psychological Science; Education* (developmental psychology, work and family, infant sleep, transition to parenthood, autism)

Shane Goodridge, Ph.D. University of Victoria, *Assistant Professor of Teaching of Education*

Elizabeth Greeban, M.A. University of California, Irvine, *Lecturer of Education*

Jody Guarino, Ed.D. Azusa Pacific University, *Lecturer and Supervisor of Teacher of Education*

Susan Guilfoyle, M.S. University of Southern California, *Lecturer of Education* (reading, language and literacy)

Janice L. Hansen, Ph.D. University of California, Irvine, *Lecturer of Education*

Gillian Hayes, Ph.D. Georgia Institute of Technology, *Robert A. and Barbara L. Kleist Professor of Informatics; Education* (interactive and collaborative technology, human-computer interaction, computer-supported cooperative work, educational technology, ubiquitous computing)

Jutta Heckhausen, Ph.D. University of Strathclyde, *Professor of Psychological Science; Education* (life-span developmental psychology, motivation, individual agency and social context)

Alan R. Hoffer, Ph.D. University of Michigan, *Professor Emeritus of Education*

Kristine Houston, M.S. National University, *Lecturer of Education*

Jeffrey J. Hruby, M.A. California State University, Fullerton, *Lecturer of Education*

Bradley S. Hughes, Ph.D. University of California, Irvine, *Associate Professor of Teaching of Ecology and Evolutionary Biology; Education*

Karajean Hyde, M.A. Vanguard University, *Lecturer of Education* (mathematics education)

Constance Iloh, Ph.D. University of Southern California, *Assistant Professor of Education*

Susanne M. Jaeggi, Ph.D. University of Bern, *Professor of Education; Cognitive Sciences* (working memory, executive functions, cognitive training, lifespan development aging, individual differences)

- Susan C. Jarratt, Ph.D. University of Texas at Austin, *Professor Emerita of Comparative Literature; Education* (histories and theories of rhetoric, ancient Greek rhetoric, writing studies)
- Jade Marcus Jenkins, Ph.D. University of North Carolina at Chapel Hill, *Assistant Professor of Education*
- Jeffrey M. Johnston, M.A. University of Southern California, *Lecturer of Education*
- Hosun Kang, Ph.D. Michigan State University, *Associate Professor of Education*
- Summer Keller, M.A.T.-S California State University, Fullerton, *Lecturer of Education*
- Young-Suk Kim, Ed.D. Harvard University, *Professor of Education; Asian American Studies; Language Science*
- Judith Kroll, Ph.D. Brandeis University, *Distinguished Professor of Language Science; Education; Psychological Science* (psycholinguistics, bilingualism, second language acquisition, language production, lexical processing, reading, visual cognition, gender and science)
- Kimberly Lakes, Ph.D. University of Wisconsin-Madison, *Associate Professor in Residence of Pediatrics; Education*
- Jenel Lao, Ed.D. University of California, Irvine and Los Angeles, *Lecturer of Education*
- Glenn S. Levine, Ph.D. University of Texas at Austin, *German Language Program Director and Professor of German; Education; Language Science* (applied linguistics, foreign language pedagogy, German-Jewish culture and history, Yiddish language and culture, European culinary history)
- Julia R. Lupton, Ph.D. Yale University, *Director of Illuminations and Professor of English; Comparative Literature; Education; Religious Studies* (Renaissance literature, literature and psychology)
- Jack R. McCullough, Ph.D. United States International University, *Associate Professor of Teaching Emeritus of Education*
- Carol Booth Olson, Ph.D. University of California, Los Angeles, *Professor Emerita of Education*
- Elizabeth Pena, Ph.D. Temple University, *Professor of Education; Language Science*
- Emily K. Penner, Ph.D. University of California, Irvine, *Assistant Professor of Education*
- Kylie Pepler, Ph.D. University of California, Los Angeles, *Associate Professor of Informatics; Education* (learning sciences, design, maker culture, arts, game design, computer programming, wearables)
- Stephanie Reich, Ph.D. Vanderbilt University, *Professor of Education; Informatics; Psychological Science* (child development, parenting, peer interactions, media, program evaluation)
- Katherine Rhodes, Ph.D. Georgia State University, *Assistant Professor of Education* (mathematical cognition and achievement, linguistic minority equity and inclusion, child development, psychometrics, latent trait modeling)
- Lindsey Richland, Ph.D. University of California, Los Angeles, *Associate Professor of Education*
- Fernando Rodriguez, Ph.D. University of Michigan, *Assistant Professor of Teaching of Education*
- Ruben G. Rumbaut, Ph.D. Brandeis University, *Distinguished Professor of Sociology; Chicano/Latino Studies; Criminology, Law and Society; Education; Language Science* (international migration, immigration laws, criminalization, incarceration, social inequality and mobility, race and ethnicity)
- Judith Haymore Sandholtz, Ph.D. Stanford University, *Professor of Education*
- Rossella Santagata, Ph.D. University of California, Los Angeles, *Professor of Education* (teacher preparation and professional development, teaching and learning in STEM fields, video technologies, teaching and learning as cultural practices, equity and education)
- Brian Sato, Ph.D. University of California, San Diego, *Professor of Teaching of Molecular Biology and Biochemistry; Education*
- Robin C. Scarcella, Ph.D. University of Southern California, *Professor of Academic English; Education*
- Sabrina E. Schuck, Ph.D. University of California, Riverside, *Health Sciences Assistant Clinical Professor of Pediatrics; Education; Psychological Science*
- Sandra Simpkins, Ph.D. University of California, Riverside, *Professor of Education* (organized after-school activities, motivation, family influences, diversity and equity, immigration and culture, STEM)
- Padhraic J. Smyth, Ph.D. California Institute of Technology, *Chancellors' Professor of Computer Science; Education; Statistics* (artificial intelligence and machine learning, pattern recognition, applied statistics, data mining, information theory)

Kurt Squire, Ph.D. Indiana University, *Professor of Informatics; Education* (video game design, games for learning, mobile technologies, civic engagement, place-based learning)

Constance Steinkuehler, Ph.D. University of Wisconsin-Madison, *Professor of Informatics; Education* (video games for impact, game-mediated cognition and learning, online social interaction, video games and policy)

Jeanne M. Stone, M.A. California State University, Long Beach, *Lecturer of Education*

Timothy M. Tift, M.A. Pepperdine University, *Associate Professor of Teaching Emeritus of Education*

William M. Tomlinson, Ph.D. Massachusetts Institute of Technology, *Professor of Informatics; Education* (environmental informatics, educational technology, computer graphics/visualization/digital arts)

Deborah Lowe Vandell, Ph.D. Boston University, *Chancellor's Professor Emerita of Education; Psychological Science* (longitudinal studies of development, early childhood education, after-school programs, summer learning, child development, adolescent development)

Adriana Villavicencio, Ph.D. New York University, *Assistant Professor of Education*

Mark J. Warschauer, Ph.D. University of Hawaii at Manoa, *Professor of Education; Informatics* (language, literacy, technology, STEM)

Julie Washington, Ph.D. University of Michigan, *Professor of Education* (language development, language disorders, cultural-linguistic variation, poverty, reading growth)

Dolores Wirth, M.A. California State University, Fullerton, *Lecturer of Education*

Di Xu, Ph.D. Columbia University, *Associate Professor of Education*

Elizabeth van Es, Ph.D. Northwestern University, *Professor of Education* (teacher cognition, pre-service teacher education, in-service teacher professional development, teacher learning communities, uses of video in teacher learning)

Courses

EDUC 10. Educational Research Design. 4 Units.

Designed to help students become intelligent consumers of research and independent researchers, and provides an introduction to the basic principles of educational research. Topics include research questions, literature reviews, and qualitative and quantitative research designs.

Overlaps with SE 10.

Restriction: Education Sciences Majors have first consideration for enrollment.

(III)

EDUC 15. Statistics for Education Research . 4 Units.

Provides an introduction to the use of statistics in educational research. Focuses on testing and measurement, and provides basic tools to read, interpret, and draw conclusions from quantitative educational research.

Prerequisite: EDUC 10

Overlaps with SE 13.

Restriction: Education Sciences Majors have first consideration for enrollment.

(Va)

EDUC 25. Introduction to Education: Disciplinary Perspectives. 4 Units.

Provides insights into educational organizations and processes by developing understanding of concepts used by four different disciplines (economics, history, psychology, and sociology) to analyze key issues and phenomenon in the field of education that profoundly influence individual life course outcomes.

Restriction: Education Sciences Majors have first consideration for enrollment.

(III)

EDUC 30. 21st Century Literacies. 4 Units.

Provides an overview of literacies required for academic and career success in the 21st century. Issues addressed include reading, writing, academic language, research skills, media and technology skills, scientific literacy, critical thinking, communication, collaboration, and creativity.

Restriction: Education Sciences Majors have first consideration for enrollment.

(III)

EDUC 40. Theories of Development and Learning Applied to Education. 4 Units.

Provides an introductory examination of central theories of human development and learning in their application to contemporary educational settings.

Restriction: Education Sciences Majors have first consideration for enrollment.

(III)

EDUC 50. Origins, Purposes, and Central Issues in K-12 Education. 4 Units.

An introduction to the role of education in U.S. society and to central issues in K–12 education. Education is studied from four different perspectives: social, historical, philosophical, and political.

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 52. Foundations of Bilingual Education and Bilingualism. 4 Units.

Provides a comprehensive overview of current issues in bilingual education and bilingualism. Topics include dimensions of bilingualism, the effects of bilingualism on children's linguistic and cognitive development, bilingual education programs, literacy, special needs, and assessment.

Same as LSCI 51B, HUM 52.

EDUC 55. Knowing and Learning in Mathematics and Science. 5 Units.

Multidisciplinary study of knowing and learning in secondary school mathematics and science. Topics include standards for knowing, scientific epistemologies, mental representations, problem solving, expert-novice studies, assessment, and domain-specific thinking, learning, and teaching. Applied analysis of learning through clinical interviews.

Prerequisite: PS 5 or BIOL 14

(III)

EDUC 100. Educational Strategies for Tutoring and Teacher Aiding. 4 Units.

Placement in a public elementary or secondary school to gain experience as a tutor or teacher aide. Emphasis on cognitive learning and the development of instructional strategies and resources which can be used in effective cross-age and cross-cultural experiences.

Grading Option: Pass/no pass only.

Repeatability: May be taken for credit 3 times.

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 101. Strategies for Tutoring and Teacher Aiding in a Bilingual Classroom. 4 Units.

Placement in a dual immersion school setting to gain experience as a bilingual (Spanish) tutor or teacher aide. Emphasis on cognitive learning and the development of instructional strategies and resources which can be used in effective cross-age and cross-cultural experiences.

Prerequisite: Must be able to communicate in Spanish.

Grading Option: Pass/no pass only.

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 104D. The Arts and Human Development. 4 Units.

Students use various arts disciplines (e.g. studio art, music, dance, drama, and media arts) to investigate how visual and performing arts support individual human development. Introduction to pedagogy for integrating the arts in K-12 settings. Materials fee.

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 104E. Multimedia and the Arts in the Multicultural Classroom. 4 Units.

Multiculturalism and under-represented U.S. minorities and the visual and performing arts: perspectives in artistic perception, creative expression, historical and cultural context, aesthetic valuing, and media literacy in the interpretation and production of multimedia arts products and applications for K-12 classrooms.

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 106. Early Childhood Education Curriculum and Instruction. 4 Units.

Designed to provide an introductory survey of the nature, needs, and education of young children. Explores questions such as "What should we teach young children?" and "How should we teach?".

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 107. Child Development in Education. 4 Units.

Explores the pathways of normally developing children's growth and change over time. In particular, focuses on how cognitive and social development impact and are driven by educational contexts.

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 108. Adolescent Development and Education. 4 Units.

Explores the physical, cognitive, emotional, and social development of adolescents, with an emphasis on the practical implications of developmental theory and research findings for teachers and other professionals who work with adolescents in middle or high school contexts.

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 109. Reading and Writing in Mathematics and Science. 4 Units.

Emphasis is placed on understanding the literacy processes (listening, speaking, viewing, thinking, reading, and writing) as they relate to middle and high school mathematics and science. Students integrate literacy-related strategies with curriculum-based goals supported in the California State Frameworks.

Corequisite: EDUC 158

EDUC 120A. Introduction to Positive Psychology in Education. 4 Units.

Positive psychology is a recent focus area within the field of psychology that explores what is positive, creative, and fulfilling in human behavior. It is the scientific study of well-being and flourishing.

Same as PSCI 192X.

Overlaps with PSCI 184S.

Restriction: Education Sciences Majors have first consideration for enrollment. Psychological Science Majors have first consideration for enrollment. Psychology and Social Behavior Majors have first consideration for enrollment.

EDUC 122A. Foundations of Elementary Mathematics Learning I. 4 Units.

Provides understanding of fundamental mathematics necessary to teach for conceptual understanding and higher-level reasoning and problem solving. Conceptual understanding of place value, fractions, proportionality, geometry, algebra, functions, probability, statistics, and measurement. Instructional applications of these concepts in grades K-8 teaching.

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 122B. Foundations of Elementary Mathematics Learning II. 4 Units.

Provides understanding of fundamental mathematics necessary to teach for conceptual understanding and higher-level reasoning and problem solving. Conceptual understanding of place value, fractions, proportionality, geometry, algebra, functions, probability, statistics, and measurement. Instructional applications of these concepts in grades K-8 teaching.

Prerequisite: EDUC 122A

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 122C. Foundations of Elementary Mathematics Learning III. 4 Units.

Provides understanding of fundamental mathematics necessary to teach for conceptual understanding and higher-level reasoning and problem solving. Conceptual understanding of place value, fractions, proportionality, geometry, algebra, functions, probability, statistics, and measurement. Instructional applications of these concepts in grades K-8 teaching.

Prerequisite: EDUC 122B

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 124. Multicultural Education in K-12 Schools. 4 Units.

Provides a theoretical and empirical overview of educational issues affecting low-income immigrant and U.S. born minority student populations in an increasingly diverse and changing society.

Same as CHLT 183.

(VII)

EDUC 125. Children, Schools, and Cinema. 4 Units.

Through popular films, analyzes aspects of school dynamics and interaction of schools with students, teachers, and public. Melding educational studies and film studies provides deeper understanding of methods used to transmit information and attitudes about schools to the lay public.

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 126. Ethics and Education. 4 Units.

Ethics in education and how ethicists frame moral problems. Presents major ethical themes that affect education. Analysis of models for dealing with ethical goals and developing morality for K–12 students. Models for solving ethical dilemmas within an educational context.

Prerequisite: EDUC 50

EDUC 127A. Moral Education for Youth Development I. 2 Units.

The first of a two-course series that examines research-based theories for how school settings and adult mentors contribute to the moral development of adolescents. Students examine theory in the context of real-world application in four program observations.

Prerequisite: EDUC 126

Restriction: Education Sciences Majors only.

EDUC 127B. Moral Education for Youth Development II. 2 Units.

Continuation of EDUC 127A. Allows students from 127A to experience the role of adults in the moral development of youth. Students receive training to deliver curriculum and apply research-based theories and methods in real-world youth settings.

Prerequisite: EDUC 126 and EDUC 127A

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 128. Exceptional Learners. 4 Units.

An introductory survey of the nature, needs, and education of K–12 children with exceptionalities. Covers the categories and characteristics of exceptionalities, relevant state and federal legislation, and the role of general education teachers in special education.

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 130. Children's Learning and Media. 4 Units.

Examines how popular media may impact how young people learn, develop, and communicate by looking at research related to the impacts of a wide range of popular media including television, video games, digital environments, mobile devices, and other multimedia.

Same as INF 164.

Restriction: Education Sciences Majors only. Informatics Majors only. Informatics Minors only.

EDUC 131. Educational Technology. 4 Units.

Presents an overview of the types and uses of educational technology to support and enhance the K–12 learning experience. Familiarizes students with lesson planning, instructional design, learning theory, and integrating technology into the curriculum.

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 132. Reading and Writing Enrichment for After-School Programs. 4 Units.

Examines literacy development and the implementation of research-based practices to enrich learners' reading and writing skills in after-school programs. A minimum of 20 hours of after-school program fieldwork is required in order to design and implement literacy enrichment activities.

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 134. Teaching English Internationally. 4 Units.

Covers methods of teaching English as a foreign language, basic language knowledge for English teachers, the social context of English language teaching around the world, and essential information about securing international employment as an English teacher.

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 137. Arts for Elementary Learners. 4 Units.

Theory and practice in art education for the elementary school classroom. Includes content and pedagogy for future teachers and others interested in the relationship between child development and the production of visual art. Materials fee.

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 138. Children's Literature in the Elementary Classroom. 4 Units.

Explores the wealth of children's literature that can be integrated into the elementary classroom. Surveys traditional literature, fiction, nonfiction, and poetry that make curriculum accessible to all students. Focuses on literary elements for both reading and creating text.

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 140. Courts, Classrooms, and Controversies in Education Policy . 4 Units.

Examines policies and laws defining the K-12 U.S. education system and the politics and controversies surrounding the political decision-making process at the federal, state, and local levels. Discusses original intent versus effects on organization of schools and educational equity.

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 142. American History and Education Policy: An Intimate Relationship. 4 Units.

Examines the interplay between history, politics, and policy. Students examine the interactions between sociopolitical development and environmental contexts (e.g. familial, social, school, cultural) and contemplate the power of normative values in the formulation of education policy.

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 143. Controversies in College. 4 Units.

Explores the fascinating world of postsecondary education. Every week students dive deeper into controversies that make college more than just where students attend class, but rather, one of the most important social institutions shaping our world.

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 143AW. Classroom Interactions I. 4 Units.

Focuses on research-based instructional strategies for enhancing the learning of secondary mathematics and science. Students learn about adolescent and second-language development to assist them in developing analyzing, teaching, and critiquing lessons for secondary classrooms.

Prerequisite: (PS 105 or BIOL 101) and EDUC 55. Satisfactory completion of the Lower-Division Writing requirement.

(Ib)

EDUC 143BW. Classroom Interactions II. 4 Units.

Focuses on equity and multicultural education research, special education, and research-based instructional and assessment strategies to assist students in designing, teaching, and assessing lessons that meet the needs of all secondary mathematics and science students.

Prerequisite: (PS 105 or BIOL 101) and EDUC 55 and EDUC 143AW and EDUC 148. Satisfactory completion of the Lower-Division Writing requirement.

(IB AND VII).

EDUC 144. The American Charter School. 4 Units.

Explores the legitimacy of the charter school as a viable educational reform movement. Critical themes include the role of choice and privatization in public education and charter schools as a vehicle for fulfilling the promise of educational equality.

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 145. Theories and Pedagogies of Race in Education. 4 Units.

Introduces theoretical frameworks to examine the role of race in American education. Emphasis is placed on introducing students to different race and ethnicity paradigms.

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 146. Education, Learning, and Culture. 4 Units.

Exploration of learning and development through a cultural lens, drawing from a range of research traditions and disciplines to broaden understandings of theories that inform teaching and learning in formal and informal settings.

Restriction: Education Sciences Majors only.

EDUC 147. Poverty, Education, and Social Change. 4 Units.

Explores how institutional and demographic changes in the U.S. have shaped disparities in education, the mechanisms through which poverty and social class influence families, and students, and promising programs and interventions to address inequity. Includes community service.

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 148. Complex Pedagogical Design. 6 Units.

In this Cal Teach capstone course, students design lesson plans and complex instructional units, using approaches such as mathematics and science integration, problem-based instruction, project-based learning, technology, representations, scientific and mathematical analysis/modeling, authentic assessment, contextualization, and designing equitable learning environments.

Prerequisite: (PS 105 or BIOL 101) and EDUC 55 and EDUC 143AW

EDUC 149. Family, School, and Community in Early Childhood. 4 Units.

Focuses on the many socializing aspects of young children's social worlds. Through the use of ecological perspectives, explores the role of families, schools, and communities on children's social development, especially in early childhood.

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 150. Changing the High School Experience. 4 Units.

Analysis of problems in high school education (e.g., student disengagement and underachievement of disadvantaged) and proposals for changing curriculum, instruction, and school organization. Students suggest own reforms and analyze effective/ineffective school practices.

Prerequisite: Recommended: 1 unit of EDUC 199.

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 151. Language and Literacy. 4 Units.

Addresses the linguistic principles and processes that underlie oral and written language proficiency. Emphasis is on how to use phonology, morphology, orthography, semantics, syntax, and pragmatics to support literacy and oral language development for K-12 students.

Same as PSCI 192V, LSCI 182V.

Restriction: Language Science Majors have first consideration for enrollment. Psychological Science Majors have first consideration for enrollment. Education Majors have first consideration for enrollment. Psychology and Social Behavior Majors have first consideration for enrollment. Psychology Majors have first consideration for enrollment. Social Ecology Majors have first consideration for enrollment.

EDUC 152. Theory and Practice of Reading Interventions for Students At-Risk for Reading Failure. 4 Units.

Examines the research concerning reading failure in young children and interventions used to support them. Topics include reading development and reading intervention. Students critically evaluate the relation between their fieldwork experience and the research and evaluation literature.

Repeatability: May be taken for credit 2 times.

Restriction: Education Sciences Majors only.

EDUC 154. Latino Families and Youth. 4 Units.

Current issues in theory, methods, and research in U.S. Latino/a youth and families are examined. An advanced level study, with a particular focus on history, theories, methods, research, and applied social issues.

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 156. Introduction to Field Methods in Education. 4 Units.

Introduces students to methods for studying human behavior in context. It prepares students for conducting applied educational research, including designing needs assessments; conducting observations, interviews and focus groups; organizing and analyzing data; and synthesizing and presenting research findings.

Prerequisite: EDUC 10

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 157. Educational Research and Evaluation. 4 Units.

Covers qualitative and quantitative research methods relevant for the evaluation of educational programs. Students have the opportunity to plan, execute, and write-up a small evaluation project.

Prerequisite: EDUC 10 and EDUC 15

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 158. Student Teaching Mathematics and Science in Middle/High School. 6 Units.

Student teaching includes orientation, seminars, preparation, and assumption of secondary school classroom instructional responsibilities in accordance with State credentialing requirements and in conjunction with the public school calendar. Five days/week and a minimum four hours/day over two quarters.

Corequisite: EDUC 109

Prerequisite: (PS 105 or BIOL 101) and EDUC 55 and EDUC 143AW and EDUC 143BW and EDUC 148

Repeatability: May be taken for credit 2 times.

EDUC 159. Experimental Research Methods. 4 Units.

Designed to help students to develop the ability to think critically about research, and to develop an understanding of how to design and conduct experiments. The overall goal is to prepare students to independently plan and implement a research study.

Prerequisite: EDUC 10 and EDUC 15

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 160. Foundations of Out-of-School Learning. 4 Units.

Provides an overview of child and adolescent learning through participation in out-of-school activities and settings. Recognizes the importance of matching out-of-school experiences with the interests, needs, and development level of students. Observation-based fieldwork included.

Repeatability: May be taken for credit 2 times.

Restriction: Education Sciences Majors have first consideration for enrollment. May be taken a second time if student is a candidate for Certificate in After-School Education, and the first time was prior to Fall 2008.

EDUC 161. Discovering Science in Out-of-School Hours. 4 Units.

Examines the design principles and teaching techniques that science museums and other out-of-school science programs use to motivate children and youth to learn science through discovery. Includes field experience at a science learning center or after-school program. Materials fee.

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 170. Chicana/Latina Education. 4 Units.

Provides a historical and empirical overview of educational issues affecting diverse Latina low-income, immigrant, and U.S. born student populations enrolled in American schools. Examines policies and issues such as DACA, generation, culture, racism, and gender on educational mobility.

Same as CHLT 181, SOCL 172A, SSCI 164.

Restriction: Upper-division students only.

EDUC 173. Cognition and Learning in Educational Settings. 4 Units.

Foundational concepts in cognition and development as applied to student learning. Primary topics include historical behaviorism, basic cognitive structure and processes, complex cognition, cognitive development, and motivation.

Same as PSCI 192T.

Restriction: Psychological Science Majors have first consideration for enrollment. Education Majors have first consideration for enrollment. Psychology and Social Behavior Majors have first consideration for enrollment. Psychology Majors have first consideration for enrollment. Social Ecology Majors have first consideration for enrollment.

EDUC 174. Education and the American Dream: Historical Perspectives on Democracy and Education. 4 Units.

Examines the relationship between public schooling and the promotion of democratic ideals in American society over the past two centuries.

Same as HIST 147.

EDUC 175. Foundations of Education. 4 Units.

Foundational questions of education are viewed from newly emerging developmental perspectives which treat cognition as embodied action and learning as cultural recapitulation. Historical, sociological, psychological, and philosophical implications of views toward aspects of teaching, learning, curriculum, and pedagogy are considered.

Restriction: Education Sciences Majors only.

EDUC 176. Psychology of Learning, Abilities, and Intelligence. 4 Units.

Overview of classic positions on the mind, human abilities, and intelligence, especially as related to academic achievement. Contrasting views: psychometric versus information processing; experimental versus correlational research.

Prerequisite: PSYC 7A or PSCI 9 or PSCI 11A or PSCI 11B or PSCI 11C

Same as PSCI 192U.

Restriction: Psychological Science Majors have first consideration for enrollment. Education Majors have first consideration for enrollment. Psychology and Social Behavior Majors have first consideration for enrollment. Social Ecology Majors have first consideration for enrollment.

EDUC 179W. Advanced Writing for Education Sciences. 4 Units.

Writing for multiple audiences and purposes about central concepts in education sciences, such as schools as organizations; social structures in education and stratification; individual decision making, government regulation and markets; human development and learning.

Prerequisite: Satisfactory completion of the Lower-Division Writing requirement.

Restriction: Seniors only. Education Sciences Majors have first consideration for enrollment.

(Ib)**EDUC 180. Interdisciplinary Topics in Education. 4 Units.**

Analysis of issues in education from interdisciplinary perspectives. Topics covered vary with interests of instructor.

Repeatability: Unlimited as topics vary.

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 181A. Principles and Practices of Coaching Sports I. 4 Units.

Focuses on foundational theories and instructional practices in coaching sports from fourth grade to the collegiate level. Prepares students for the coach's mandatory state certification examination for high school sports in California.

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 185. Social Development in Education. 4 Units.

Examination of contextual, psychosocial, and biological factors contributing to the social development of children and adolescents. Theoretical perspectives, empirical findings, and methodological issues are emphasized. Implications of the scientific evidence for practical and policy decision-making surrounding development are discussed.

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 190. Principles and Practices of K–6 After School Sports and Fitness. 4 Units.

Focuses on foundational theories and instructional practices in after-school sports and fitness for K–6 students. Includes a 20-hour field experience in an after-school setting.

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 191. Advanced Fieldwork in After-School Education. 4 Units.

Capstone fieldwork experience for students seeking to earn the Department of Education-sponsored Certificate in After-School Education. Students are required to complete 50 or more hours of fieldwork and related assignments at an instructor-approved after-school program.

Prerequisite: EDUC 160

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 193. Directed Studies in Early Childhood Education. 2-4 Units.

Advanced study of early childhood education under the direction of a faculty member, coupled with a community-based practicum.

Repeatability: May be repeated for credit unlimited times.

Restriction: Education Sciences Majors have first consideration for enrollment.

EDUC 198. Directed Research in Education. 2-8 Units.

Individually or in small groups, students are exposed to or participate in work related to a faculty member's research. Students also attend a weekly seminar and complete a research paper or comparable project.

Repeatability: May be taken for credit for 12 units.

Restriction: Sophomores only. Upper-division students only.

EDUC 199. Individual Study. 1-4 Units.

Intensified advanced study in areas in which a student has considerable background, under the direction of a faculty member who will guide and evaluate the study.

EDUC 202. Outcomes of Schooling/Student Assessment. 4 Units.

Focuses on establishment of learning goals and assessment tools that are valid for all students, inform educational decisions, and promote educational success. Provides critical examination of different forms of assessment used in K–12 schools, including developmental assessments and appropriate interventions.

Restriction: Graduate students only. Education-MA/PhD Majors only.

EDUC 206. Design of Learning Environments for Teachers in Secondary School Subjects. 4 Units.

Research on comprehension, conceptual understanding, reasoning, critical thinking, and problem solving with applications to pedagogy in secondary school subjects. Required for M.A.T. single subject students, unless substitution of Education 207 is authorized.

EDUC 208. Reading and Writing Development . 4 Units.

Covers major theories and evidence about mechanisms and factors that contribute to development and difficulties with reading and writing skills. These include language, cognition, biological and environmental factors, bilingual and second language acquisition, and educational implications.

Restriction: Graduate students only.

EDUC 211. Writing Theory and Practice. 4 Units.

Offers an overview of histories, theories, and research in the field of composition studies from 1950 to the present. Addresses the influences of theory and research on teaching practice at K–12 and college levels.

Restriction: Graduate students only.

EDUC 212. Literacy and Technology. 4 Units.

Examines theoretical, historical, and contemporary relationships of technology and literacy. Topics include online communication, multimodality, video games, the use of technology for literacy instruction in schools, and research approaches for investigating literacy development with technology.

Restriction: Graduate students only.

EDUC 217. Foundations of Digital Learning. 4 Units.

Students are introduced to historical, constructionist, instructionist, and new literacies perspectives through reading major works in educational technology and discussing how they apply to both teaching and research.

Restriction: Graduate students only.

EDUC 218. Special Topics in Teaching, Learning, and Educational Improvement. 4 Units.

Advanced seminar designed to engage students in highly interactive examination of current issues in teaching and learning. Topics and content vary by quarter, depending upon research interests of the faculty and students.

Repeatability: May be taken for credit 10 times as topics vary.

Restriction: Graduate students only.

EDUC 220. Developing Adolescent Literacy. 4 Units.

Examines how adolescents leverage vocabulary knowledge, word-reading skills, background understanding, and knowledge of content-specific text features to master an increasing range of texts both independently and for subject-area learning.

Restriction: Graduate students only.

EDUC 221. Longitudinal and Advanced Structural Equation Modeling. 4 Units.

Covers advanced and longitudinal structural equation models. Topics include measurement invariance, growth curve models, measurement models, mixture models, and missing data.

Prerequisite: Recommended: EDUC 288B.

Restriction: Graduate students only.

EDUC 222. Research Epistemologies and Methodologies. 4 Units.

Introduction to epistemological underpinnings of educational research and to a range of research methodologies in education. Includes examination of quantitative and qualitative studies through reading and analyzing contemporary research. Critique of selected research studies pertinent to educational practice and policy.

Restriction: Ed.D. Program students only.

EDUC 223. Oral Language Acquisition and Education. 4 Units.

Learn about research on domains of development in oral language (phonology, vocabulary, grammar, and extended discourse), bilingual development, and second language acquisition with attention to cognitive, biological, and environmental factors. Focus on learning in school settings and educational implications.

Restriction: Graduate students only.

EDUC 224. Special Topics in Educational Research Methods. 4 Units.

An advanced seminar focused on innovative educational research methods and analytic techniques. Topics and content vary by quarter, depending upon the research interests of the faculty and students.

Repeatability: May be taken for credit 4 times as topics vary.

Restriction: Graduate students only.

EDUC 224A. Learning Analytics Fundamentals. 4 Units.

Provides students with a survey of learning analytics (LA), emphasizing its application across educational contexts, rather than its underlying algorithmic details. A comprehensive overview orients students to this nascent field and prepares them for advanced research in LA.

Restriction: Graduate students only.

EDUC 224B. Learning Analytics Practicum. 4 Units.

Helps students gain hands-on experience working as educational data scientists, while simultaneously learning some of the key guiding principles behind effectively using data to make predictions and decisions. Culminates in an interdisciplinary group research project.

Prerequisite: EDUC 288A

Restriction: Graduate students only.

EDUC 225. Learning, Development, and Culture. 4 Units.

Explores issues of learning and development through a cultural lens. The interplay between culture and learning and culture and development is analyzed through the discussion of relevant readings from both psychological and anthropological research traditions.

Restriction: Graduate students only.

EDUC 226. University Teaching: Concepts and Practices. 4 Units.

Prepares doctoral students for course design and instruction at the university level. Addresses topics including the university teaching context, preparing a syllabus, and inclusive teaching and learning.

Restriction: Graduate students only.

EDUC 228. Science Education for the 21st-Century Classroom. 4 Units.

Aims to develop foundational understanding about science education research. Contemporary research from early childhood through high school is introduced. Issues of equity, social justice, pedagogy, professional development, and innovation in and out of school settings are addressed.

Restriction: Graduate students only.

EDUC 229. Theories of Human Development. 4 Units.

Examines developmental theory as a guide for research and practice in education. The evolution of classical development theories and the emergence of new theoretical models are considered. Theoretical perspectives include ecological systems, life course, psychobiology, attachment, and social-cognitive theories.

Restriction: Graduate students only.

EDUC 229A. Theories and Issues in Human Development - Part I. 4 Units.

Examines seminal concepts, issues, and theories that underlie contemporary developmental science. Students develop an understanding of these concepts, and develop their skills in using theory as a guide in their own research and practice.

Restriction: Graduate students only.

EDUC 230. The History and Culture of Schooling in the United States. 4 Units.

Considers the historical, cultural, and structural processes that contextualize American schooling. In particular, examines the roles of race, class, and gender in the context of public education in the United States.

Restriction: Master of Arts in Teaching Degree students only.

EDUC 231. Interrogating Race and Education. 4 Units.

Critically explores how race is a socially constructed concept and how it manifests itself in American society. Attention is given to African American, Asian, and Mexican communities throughout U.S. history, with particular emphasis on educational inequality.

Restriction: Graduate students only.

EDUC 232. Mathematics Cognition and Learning. 4 Units.

Study of mathematical cognition, learning, and development. Combines readings from cognitive and developmental psychology, education, and learning sciences with the purpose of identifying the most useful applications of cognitive theory and methods for educational research and practice.

Restriction: Graduate students only.

EDUC 233A. Special Topics in Atypical Development. 4 Units.

Includes advanced examination of current issues in theories of atypical development, assessment, and intervention as applied to special needs. Understanding physical and/or cognitive mechanisms of child development and disorders. Knowledge and skills for areas of disability.

Repeatability: May be taken for credit 5 times as topics vary.

Restriction: Graduate students only.

EDUC 234. Measurement and Psychometrics. 4 Units.

Focuses on appraisal and development of measures, measurement theory, and its application using a classical test theory approach. Topics include scaling, construction, reliability and validity assessment, and item analysis; as well as cross-cultural and cross-linguistic considerations in test development.

Restriction: Graduate students only.

EDUC 236. Applied Linguistics and Literacy. 4 Units.

Examines research in applied linguistics as related to teaching literacy. Overview of language knowledge required to understand development and instruction of literacy. Topics include English language structures, psychological processing of these structures, and methodologies to study language and literacy.

Restriction: Graduate students only.

EDUC 237. Foundations of Teaching and Learning. 4 Units.

Situates learning in relation to teaching, content, and context. Locates the work of teaching and learning as a cultural practice and considers the limitations of existing theories for advancing learning opportunities for historically under-served and under-resourced communities.

Restriction: Graduate students only.

EDUC 238. Special Topics in Human Development in Context. 4 Units.

An advanced seminar designed to engage students in highly interactive examination of current issues in human development. Topics and content vary by quarter, depending upon the research interests of the faculty and students.

Repeatability: May be taken for credit 10 times as topics vary.

Restriction: Graduate students only.

EDUC 239. Cognitive Neuroscience and Human Development. 4 Units.

Focuses on the latest empirical work at the intersection of neuroscience, cognitive psychology, developmental science, and educational practice; explores how educational neuroscience fits within those fields; and discusses the main conceptual and practical challenges facing the field.

Restriction: Graduate students only.

EDUC 241. Children's Sense Making in Science. 2 Units.

Investigates elementary students as individuals who construct understanding of concepts through their interactions with others and the world around them. Observations of children in informal settings to analyze learning in context.

Restriction: Master of Arts in Teaching Degree students only.

EDUC 243. The Policy Environment of Teaching. 2 Units.

Examines research and public perceptions about school-based educational processes, the influence of institutional structures and educational policy on the lives of teachers, and the challenges of school reform at the local and classroom levels.

Restriction: Master of Arts in Teaching Degree students only.

EDUC 245. Learning Inside and Outside of School. 2 Units.

A field-based course focused on observing adolescents in out-of-school contexts to examine adolescent learning and development in a range of contexts, how out-of-school contexts motivate learning and development, and consider the implications for teaching.

Restriction: Master of Arts in Teaching Degree students only.

EDUC 246. Teaching Investigations: Identifying Dilemmas of Practice. 4 Units.

Focuses on identifying problems of teaching practice that arise in student teaching, examining the theoretical foundations that underlie problems of practice, and developing approaches for inquiring into strategies to systematically address instructional challenges.

Restriction: Master of Arts in Teaching Degree students only.

EDUC 247. Teaching Investigations: Exploring Dilemmas of Practice. 4 Units.

Focuses on exploring problems of teaching practice that arise in student teaching, drawing on research to examine the theoretical foundations that underlie problems of practice, and to propose courses of action to address and study educational interventions.

Prerequisite: EDUC 246

Restriction: Master of Arts in Teaching Degree students only.

EDUC 248. Understanding Teacher Agency. 4 Units.

Considers how teachers can become agents of change within their school contexts, through their participation in professional organizations and via social media. Candidates experiment with using different avenues for sharing images of practice and action research.

Prerequisite: EDUC 246

Restriction: Master of Arts in Teaching Degree students only.

EDUC 250. Research Practice Partnerships. 4 Units.

An introduction to research-practice partnerships (RPPs). It examines the distinctive characteristics of this approach to education improvement by discussing examples of established partnerships and inviting students to become familiar with methods and tools to advance RPP work.

Repeatability: May be taken for credit 2 times.

Restriction: Graduate students only.

EDUC 251. Educational Policy and Politics. 4 Units.

An in-depth study of topics relevant to educational reform and policy-making. Topics include: the policy-making process, the role of values and interest groups, policy analysis, equality of educational opportunity, systemic reform, implementation, and politics at the school site.

Restriction: Graduate students only.

EDUC 252. Social Organization of Schools and Classrooms. 4 Units.

Examines how schools are organizations with ambiguous goals, faced with challenges around effective leadership and cooperation, part of loosely coupled systems, and subject to coercive, normative, and mimetic pressures from organizational environments, shaping institutional practices and structures.

Repeatability: May be repeated for credit unlimited times.

Restriction: Graduate students only.

EDUC 253. Foundations of Educational Policy. 4 Units.

Reviews disciplinary models that economists and sociologists employ in approaching education-related policy issues, including markets as emergent systems, human capital, social and cultural capital, and rational choice and institutional models of administrators and teachers.

Restriction: Graduate students only.

EDUC 254. College Access and Persistence. 4 Units.

Introduction to how social, political, and economic forces impact college access and persistence in the U.S. higher education system. Investigates historical perspectives and theoretical underpinnings of college access and retention research and the link between K–12 schooling and postsecondary stratification.

Restriction: Graduate students only.

EDUC 255. Immigration and the New Second Generation. 4 Units.

Focuses on Asian, Latino, and Black children of immigrants. Investigates how today's second generation adapts, incorporates into the U.S. social structure, transforms the social and economic landscape. Explores assimilation, immigrant families/communities, language, racial/ethnic identities, gender, education, changing U.S. racial structure.

Restriction: Graduate students only.

EDUC 258. Special Topics in Educational Policy and Social Context. 4 Units.

An advanced seminar designed to engage students in highly interactive examination of current issues in educational policy and social context. Topics and content will vary by quarter, depending upon the research interests of the faculty and students.

Repeatability: May be taken for credit 10 times.

Restriction: Graduate students only.

EDUC 259. Community Research and Action. 4 Units.

Introduces the theoretical underpinnings and research approaches of the field of Community Psychology. Project-based course focused on research and action in communities, organizations, and other extra-individual units (e.g., schools).

Restriction: Graduate students only.

EDUC 260. The Arts, Human Development, and Social Context. 4 Units.

Examines the state of empirical knowledge on the impact of visual and performing arts education on the development of academic, communication, and social-emotional skills. The role of the arts in forming personal and cultural identity is discussed.

Restriction: Graduate students only.

EDUC 261. Social and Cultural Foundations of Education. 4 Units.

Provides a critical understanding of the social and cultural foundations of education through reproduction theory. Explores the unique ways in which culture and power intersect within schools and schooling systems to reproduce and resist educational inequality.

Restriction: Graduate students only.

EDUC 264. Economic Foundations of Education and Social Policy. 4 Units.

Beginning/intermediate microeconomics course provides students with an introduction to how economists think about household decision-making, markets, benefit-cost analysis, social policy issues in general and education policy in particular.

Restriction: Graduate students only.

EDUC 265. Applied Regression Analysis for Education and Social Scientific Research. 4 Units.

Provides students with a working knowledge of multiple regression and the statistical analysis of longitudinal data. Topics include a review of the OLS regression model, event-history methods, and various other techniques for analyzing longitudinal data.

Prerequisite: EDUC 288A. EDUC 288A with a grade of B or better

Restriction: Graduate students only.

EDUC 266. Design-Based Implementation Research. 4 Units.

Explores design-based implementation research (DBIR) to organize research and improvement efforts in education. Delves deeper into different techniques of partnership development, design, implementation, and improvement science to build a repertoire of practices for students' studies.

Restriction: Graduate students only.

EDUC 268. Out-of-School Learning and Development. 4 Units.

Examines theory, research, and policy concerning out-of-school time and youth development. Several out-of-school contexts are considered (e.g, unsupervised care, informal leisure activities, and organized activities). A range of developmental outcomes are considered (e.g., achievement, social-emotional competence, and physical health).

Restriction: Graduate students only.

EDUC 274. Studies of Professional and Staff Development. 2-4 Units.

Research and theory of effective strategies for professional and staff development. Topics include: adult learning as related to professional growth of teachers, staff development as vehicle for systemic reform, reforms to enhance teacher professionalization and empowerment.

Restriction: Doctoral students only.

EDUC 276. Early Childhood Education Policy. 4 Units.

Covers core topics in the field of early education policy. Integrates research from the various perspectives relevant to child policy in a practical way to understand the mechanisms of intervention and to develop policy solutions.

Restriction: Graduate students only.

EDUC 278. Experimental Designs in Educational Research. 4 Units.

Designed to enable students to think critically about experimental research, and to develop an understanding of how to design and conduct experiments. The overall goal is to prepare students to independently plan and implement an experimental research study.

Prerequisite: EDUC 222

Restriction: Graduate students only.

EDUC 279. Advanced Qualitative Methods. 4 Units.

Further developing qualitative inquiry skills for examining human interaction and studying lived experiences of individuals and communities. Practices and techniques for collecting, working with, and analyzing qualitative data to develop and justify claims.

Prerequisite: EDUC 283A or EDUC 283B

Restriction: Graduate students only.

EDUC 280. Research Methods: Hierarchical Linear Modeling. 4 Units.

Research data often have a hierarchical structure, which require multi-level models. Students learn to use HLM; conduct appropriate analyses; and write the methods and results section for a peer-reviewed journal article. Previous coursework in regression is required.

Restriction: Doctor of Philosophy Degree students only. Graduate students only.

EDUC 283A. Qualitative Research Methods in Education I. 4 Units.

Introduces students to qualitative research methodologies and methods and explores strengths and challenges of this research tradition. Topics include logistical and ethical issues, reliability, validity and generalizability, and the role of reflexivity. Students will also engage in fieldwork.

Prerequisite: EDUC 222

Restriction: Graduate students only.

EDUC 283B. Qualitative Research Methods in Education II. 4 Units.

Provides methods for conducting and analyzing qualitative research in educational settings. Topics include data collection, coding, representing qualitative data, and using software for qualitative data analysis.

Prerequisite: EDUC 283A

Restriction: Graduate students only.

EDUC 285. Theories of Learning Cognition. 4 Units.

Overview of theories applicable to learning in schools and extracurricular contexts. Cognitive, psychometric, behavioral, and neuroscience perspectives are applied to such topics as memory, knowledge structures, problem solving, motivation, self-referent beliefs, expertise, assessment, and cognitive abilities, including intelligence.

Restriction: Graduate students only.

EDUC 287A. Quantitative Data Analysis in Education Research and Evaluation. 4 Units.

Statistical aspects of survey-based evaluations and quantitative research in education. Includes sampling, coding open-ended information, data management, scale construction, statistical analysis, and presentation of findings. Students analyze data sets - a district-based evaluation and a national survey - using SPSS.

Prerequisite: EDUC 281

Restriction: Graduate students only.

EDUC 287B. Causal Inference: Methods for Program Evaluation and Policy Research. 4 Units.

Provides students with a comprehensive overview of how to perform some more advanced statistical methods useful in answering policy questions using observational or experimental data.

Restriction: Graduate students only.

EDUC 288A. Educational, Social, and Behavioral Statistics. 4 Units.

Designed for graduate students with previous course work in statistics, including experience with statistical software such as SPSS or Stata. The emphasis is on regression analysis and the general linear model. Students learn to analyze real data using Stata.

Restriction: Graduate students only.

EDUC 288B. Structural Equation Modeling for Educ, Soc & Behavioral Analysis. 4 Units.

Rigorous introduction to structural equation modeling for students with strong prior course work in statistics. Topics include path diagrams, SEM with observed variables, factor analysis, SEM with latent variables. Maximum likelihood estimating, goodness-of-fit measures, nested models, related topics.

Prerequisite: EDUC 288A

Restriction: Graduate students only.

EDUC 289. Use of Video in Educational Research. 4 Units.

Provides students with conceptual and methodological tools for using video in educational research. Students work with their own video data or with publicly accessible databases.

Restriction: Graduate students only.

EDUC 295. Pre-Dissertation Research. 1-12 Units.

Independent study course taken under the direction of a faculty member who guides the student's research. May include guidance on data collection, methodology, human subjects protocol, conference presentation, scholarly publication, program benchmark activities.

Grading Option: Satisfactory/unsatisfactory only.

Repeatability: May be repeated for credit unlimited times.

EDUC 296A. Professional Writing in Educational Research I. 2 Units.

First of a two-course series designed to extend students' knowledge of conducting and publishing educational research. Topics include the logic of research and how to effectively communicate research findings, with particular emphasis on proficient scientific writing.

EDUC 296B. Professional Writing in Educational Research II. 2 Units.

Second of a two-course series designed to extend students' knowledge of conducting and publishing educational research. Topics include the logic of research and how to effectively communicate research findings, with particular emphasis on proficient scientific writing.

EDUC 298. Independent Study. 1-8 Units.

Independent research on topics related to education.

Repeatability: May be repeated for credit unlimited times.

Restriction: Graduate students only.

EDUC 299. Dissertation Reserach. 1-12 Units.

Specifically designed for students researching and writing their dissertations.

Grading Option: Satisfactory/unsatisfactory only.

Repeatability: May be repeated for credit unlimited times.

Restriction: Doctoral students only.

EDUC 301. Directed Elementary Field Experiences in Diverse Schools. 2 Units.

Fieldwork experiences and seminars to provide introduction to the California Teaching Performance Expectations, including guidelines for professional expectations, observation and participation in classrooms, instructional planning, classroom management, and formative experiences and preparation for the state-mandated Teaching Performance Assessment.

Restriction: Master of Arts in Teaching Degree students only.

EDUC 302. Directed Secondary Field Experiences. 2 Units.

Field work experiences and seminars to provide introduction to the California Teaching Performance Expectations, including guidelines for professional expectations, observation and participation in classrooms, instructional planning, classroom management, and formative experiences and preparation for the State-mandated Teaching Performance Assessment.

Restriction: Master of Arts Degree students only.

EDUC 304. Student Teaching in the Elementary Schools. 8-12 Units.

Student teaching seminars prepare candidates for assumption of classroom instructional responsibilities in accordance with State credentialing requirements. Four full days a week of student teaching in public school elementary classrooms in winter quarter and five full days in spring quarter.

Repeatability: May be repeated for credit unlimited times.

Restriction: Master of Arts Degree students only.

EDUC 305. Learning to Learn from Teaching in Secondary Schools. 4 Units.

Analytic tools for (1) observing and reflecting on observed instruction; (2) examining student thinking and the relationship between teaching and learning; (3) understanding particular components of the teaching/learning process; and (4) planning effective instruction including innovative teaching practices.

Restriction: Master of Arts in Teaching Degree students only.

EDUC 306. Supervised Teaching in Bilingual Education, Elementary. 8-12 Units.

Student teaching experiences in bilingual public school classrooms to include orientation, regular seminars, and preparation for bilingual classroom instructional responsibilities in accordance with State credentialing requirements and in conjunction with the public school calendar.

Repeatability: May be repeated for credit unlimited times.

Restriction: Master of Arts in Teaching Degree students only.

EDUC 307. Student Teaching in Intermediate/Secondary School. 8-12 Units.

Student teaching includes orientation, seminars, and preparation for and assumption of secondary school classroom instructional responsibilities in accordance with State credentialing requirements and in conjunction with public school calendar. Five full days a week in both winter and spring quarters.

Repeatability: May be repeated for credit unlimited times.

Restriction: Master of Arts in Teaching Degree students only.

EDUC 320. Teaching Physical and Health Education in Elementary School. 4 Units.

Methods of teaching physical education for the elementary classroom teacher. Through an interactive environment, students experience the California Physical Education and Health content standards with appropriate pedagogy. Concepts address motor skills, physical fitness, and personal responsibility for lifelong health.

Grading Option: Satisfactory/unsatisfactory only.

Restriction: Master of Arts in Teaching Degree students only.

EDUC 322A. Curriculum and Methods for Elementary School Mathematics I. 4 Units.

Scope, sequence, and methods of teaching mathematics at all levels of elementary school. Presented through lectures, discussions, demonstrations, and exploration of a variety of materials. Covers how to plan lessons, motivate students, diagnose difficulties, and evaluate learning in mathematics.

Restriction: Master of Arts in Teaching Degree students only.

EDUC 322B. Curriculum and Methods for Elementary School Mathematics II. 4 Units.

Part two of a course addressing pedagogical methods for elementary mathematics. Lectures, discussions, and exploration of instructional strategies and materials support preservice teacher development in the critical areas of planning, instruction, and assessment for conceptual understanding in mathematics.

Restriction: Master of Arts in Teaching Degree students only.

EDUC 323A. Curriculum Methods in Elementary Science. 2 Units.

Prospective elementary teachers learn how to teach science in grades K-8. Covers state science requirements, a variety of teaching methods, and criteria for selecting science curriculum materials.

Restriction: Master of Arts in Teaching Degree students only.

EDUC 323B. Curriculum Methods in Elementary Science. 2 Units.

Prospective elementary teachers learn how to teach science in grades K-8. Covers state science requirements, a variety of teaching methods, criteria for selecting science curriculum materials, and how to plan science lessons, units, experiments, projects, and demonstrations.

Prerequisite: EDUC 323A

Restriction: Master of Arts in Teaching Degree students only.

EDUC 325. Teaching the Visual and Performing Arts in Elementary School. 2 Units.

Introduction to the issues and practices — including student diversity, academic literacy, and interdisciplinary content — involved in integrating the California visual and performing arts curriculum framework and academic content standards with developmentally appropriate teaching strategies for the elementary classroom. Materials fee.

Repeatability: May be taken for credit 2 times.

Restriction: Master of Arts in Teaching Degree students only.

EDUC 326. Curriculum and Methods for Elementary School Reading. 4 Units.

Teaching an integrated reading/language arts program in the elementary classroom. Implementing theories, principles, and methods which are research and reality-based. Creating a child-centered, language-rich program to meet needs of children in multicultural/multilingual settings.

Restriction: Master of Arts in Teaching Degree students only.

EDUC 336. Methods of Teaching Languages other than English in Secondary Schools. 4 Units.

Prepares future teachers of foreign language or primary/home language. Emphasizes hands-on, practical strategies for communication-based instruction and authentic assessment in reading, writing, listening, speaking, and culture.

Restriction: Master of Arts in Teaching Degree students only.

EDUC 337. Methods of Teaching Social Science in the Secondary School. 4 Units.

Theories, strategies, and methodologies related to the teaching of history and social science in the secondary school. Emphasis on the planning, delivery, and assessment of lessons reflecting an understanding of the History-Social Science Framework for California.

Restriction: Master of Arts in Teaching Degree students only.

EDUC 338. Methods of Teaching English in the Secondary School. 2-4 Units.

Introduction to teaching reading, writing, and speaking skills in secondary school. Emphasis upon integrative approach to teaching literature, composition, and grammar consistent with the California State Framework. Practice in the design of lesson plans that are both integrated and cumulative.

Repeatability: May be taken for credit 2 times.

Restriction: Master of Arts in Teaching Degree students only.

EDUC 339. Methods of Teaching Visual Arts in Secondary Schools. 4 Units.

Theory, curriculum, and strategies for teaching visual arts in the secondary school. Emphasis on the planning, delivery, and assessment of lessons consistent with California State Framework and content standards.

Restriction: Master of Arts in Teaching Degree students only.

EDUC 340. Methods of Teaching Mathematics in Secondary School. 2-4 Units.

Theories, strategies, and methodologies related to the teaching of mathematics in the secondary school. Emphasis on the planning, delivery, and assessment of lessons reflecting an understanding of the Mathematics Framework for California and the recommendations of professional organizations.

Repeatability: May be taken for credit for 4 units.

Restriction: Master of Arts in Teaching Degree students only.

EDUC 341. Teaching Science in Secondary School. 4 Units.

Prospective secondary science teachers learn how to teach science in grades 7-12. Covers State science requirements, a variety of teaching methods, criteria for selecting science curricular materials, and how to plan science lessons, units, experiments, projects, and demonstrations.

Same as EEB 341.

Restriction: Master of Arts in Teaching Degree students only.

EDUC 342A. Applied Instructional Strategies in Secondary Schools. 2 Units.

Application of pedagogy and research to practice teaching experiences in the secondary schools. A continuation of the methodology course series with an emphasis on the needs of students with culturally diverse backgrounds. Conducted in a five-week format.

Repeatability: May be taken for credit 2 times.

Overlaps with EDUC 342.

Restriction: Master of Arts in Teaching Degree students only. EDUC 342 and EDUC 342A may not both be taken for credit.

EDUC 342B. Applied Instructional Strategies in Secondary Schools. 2 Units.

Application of pedagogy and research to practice teaching experiences in the secondary schools. A continuation of the methodology course series with an emphasis on the needs of students with culturally diverse backgrounds. Conducted in a five-week format.

Repeatability: May be taken for credit 2 times.

Overlaps with EDUC 342.

Restriction: Master of Arts in Teaching Degree students only. EDUC 342 and EDUC 342B may not both be taken for credit.

EDUC 346. Reading and Writing in Middle School and High School Classrooms. 4 Units.

Emphasis is placed upon understanding the literacy processes (listening, speaking, viewing, reading, and writing) as they relate to all Single Subject areas. Teachers are guided to integrate literacy-related strategies with curriculum-based goals supported in the California State Frameworks.

Restriction: Master of Arts in Teaching Degree students only.

EDUC 347. Culture, Diversity, and Educational Equity . 4 Units.

Survey of the history of and social theories about the origins and consequences of U.S. racial, gender, and social inequality, and the effects of poverty and racism on the educational opportunities and outcomes of minority groups in the United States.

Restriction: Master of Arts in Teaching Degree students only.

EDUC 348. Educational Equity and the Exceptional Learner. 2 Units.

Knowledge, skills, and strategies to teach exceptional learners in the general education classroom. Legislation pertaining to the education of exceptional learners. Role of general education teacher in the special education process. Inclusive curriculum to provide equal access to content.

Restriction: Master of Arts in Teaching Degree students only.

EDUC 348A. Educational Equity and the Exceptional Learner I. 2 Units.

Focuses on knowledge, skills, and strategies needed to teach special populations in general education secondary classrooms. Covers categories and characteristics of disability and exceptionality, state and federal legislation, and the role of general education teachers in the special education process.

Restriction: Master of Arts in Teaching Degree students only. Graduate students only.

EDUC 348B. Educational Equity and the Exceptional Learner II. 2 Units.

Emphasizes the use of differentiated instruction to meet special needs and the creation of a positive, inclusive learning environment that provides access to the core curriculum for special needs students.

Restriction: Master of Arts in Teaching Degree students only. Graduate students only.

EDUC 349. Theories and Methods of English Language Development Applied to Secondary Students. 4 Units.

Theories and methods of English language development and instruction of English language learners, with focus on secondary students. Includes language acquisition theory, language and content, assessment strategies, and preparation of curricula and instruction for grades 7–12 English language learners.

Restriction: Master of Arts in Teaching Degree students only.

EDUC 358. Media and Information Literacy in the Secondary Classroom. 2 Units.

Focuses on how teachers can help their students to become critical, ethical, and effective users of technological resources in the secondary classroom. Students learn tools for evaluating, selecting, and incorporating appropriate learning technologies into the secondary classroom.

Restriction: Master of Arts in Teaching Degree students only.

EDUC 359. Curriculum and Methods for Elementary Social Science and Information Literacy. 4 Units.

Methods of instruction for Social Science at the K–6 level. Includes integration of the use of technology, development of content literacy, and use of evidence to construct arguments.

Restriction: Master of Arts in Teaching Degree students only.

EDUC 361. The Adolescent Learner . 4 Units.

Issues of adolescent development and learning in family, school, and community contexts from biological, psychological, cognitive, and social perspectives. Focuses on how adolescents learn, what motivates them to learn, and how schools and teachers contribute to adolescents' growth.

Restriction: Master of Arts in Teaching Degree students only.

EDUC 362. Curriculum and Methods for Elementary Language Arts and English Language Development. 4 Units.

Methods, instructional practices, and assessment strategies for teaching English-Language Arts, with a focus on instructional practices for supporting English Language Learners. Focuses on core language arts topics, including composition of persuasive, expository, and narrative texts; speaking; and listening.

Restriction: Master of Arts in Teaching Degree students only.

EDUC 364. Instructional Design and Education Technology for the Elementary Classroom. 2 Units.

Focuses on how teachers can effectively integrate educational technologies for teaching and learning in the elementary school classroom. Students learn tools for evaluating, selecting, and incorporating appropriate technologies into their classroom activities.

Restriction: Master of Arts in Teaching Degree students only.

EDUC 374. Learning and Child Development . 4 Units.

Issues of child development and learning in family, school, and community contexts from biological, psychological, cognitive, and social perspectives. Focuses on how young children learn and develop, how schools and teachers contribute to children's growth, and implications for instruction.

Restriction: Master of Arts in Teaching Degree students only.

EDUC 399. University Teaching. 1-4 Units.

Limited to teaching assistants.

Grading Option: Satisfactory/unsatisfactory only.

Repeatability: May be repeated for credit unlimited times.