Education, School of

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Paul E. Heckman, Ph.D., Associate Dean
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Faculty
Jamil Abedi, Ph.D., Professor
Rebecca C. Ambrose, Ph.D., Associate Professor
Steven Z. Athanases, Ph.D., Professor
Heidi L. Ballard, Ph.D., Associate Professor
Shannon Cannon, Ph.D., Lecturer, Supervisor of Teacher Education
Cynthia Carter Ching, Ph.D., Associate Professor
Laura Dubcovsky, Ph.D., Supervisor of Teacher Education
Kerry Enright, Ph.D., Associate Professor
Christian Fallis, Ph.D., Professor, Director of Teacher Education
Kevin A. Gee, Ed.D., Assistant Professor
Cristina Gonzalez, Ph.D., Professor
Cassandra M. D. Hart, Ph.D., Assistant Professor
Paul E. Heckman, Ph.D., Professor
Pauline V. Holmes, Ph.D., Lecturer, Supervisor of Teacher Education
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Michelle Fortes, Ph.D., Lecturer, Supervisor of Teacher Education
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Alvin M. Mendle, M.A., Lecturer, Supervisor of Teacher Education
Barbara J. Merino, Ph.D., Professor
Peter C. Mundy, Ph.D., Professor
Cynthia Passmore, Ph.D., Associate Professor
J. Richard Pomeroy, Ph.D., Lecturer, Supervisor of Teacher Education
Patricia Quijada, Ph.D., Associate Professor
Gloria M. Rodriguez, Ph.D., Associate Professor
Rebecca Rosa, M.A., Lecturer, Supervisor of Teacher Education
Heather M. Rose, Ph.D., Associate Professor
Emily J. Solari, Ph.D. Assistant Professor
Thomas B. Timar, Ph.D., Professor
Cary J. Trexler, Ph.D., Associate Professor
Yuuko Uchikoshi Tonkovich, Ed.D., Associate Professor
Matt Wallace, Ph.D., Lecturer, Supervisor of Teacher Education
Karen A. Watson-Gegeo, Ph.D., Professor
Tobin F. White, Ph.D., Associate Professor

Emeriti Faculty
Donald G. Arnstine, Ph.D., Professor Emeritus
G. Phillip Cartwright, Ph.D., Professor Emeritus
Concha Delgado-Gaitan, Ph.D., Professor Emeritus
Sharon Dugdale, Ph.D., Professor Emeritus
Richard A. Figueroa, Ph.D., Professor Emeritus
Barbara G. Goldman, Ph.D., Professor Emeritus
Douglas L. Minnis, Ed.D., Lecturer Emeritus
Sandra M. Murphy, Ph.D., Professor Emeritus
Jonathan H. Sandval, Ph.D., Professor Emeritus
Julius M. Sassenrath, Ph.D., Professor Emeritus
Carlton J. Spring, Jr., Ph.D., Professor Emeritus
Jon. C. Wagner, Ph.D., Professor Emeritus
David W. Wampler, Ph.D., Lecturer Emeritus
George D. Yonge, Ph.D., Professor Emeritus
I. Phillip Young, Ph.D., Professor Emeritus

Center for Applied Policy in Education (CAP-ED)
Thomas Timar, Director
Tina Murdoch, Assistant Director
530-752-1533

Quarter Offered: I=Fall; II=Winter, III=Spring, IV=Summer; 2015-2016 offerings in parentheses

Fall 2011 and on Revised General Education (GE): AH=Arts and Humanities; SC=Science and Engineering; SS=Social Sciences; Div=Domestic Diversity; Wrt=Writing Experience
Pre-Fall 2011 General Education (GE): ArtHum=Arts and Humanities; ScEng=Science and Engineering; SocSci=Social Sciences; Div=Domestic Diversity; Wrt=Writing Experience

Cooperative Research and Extension Services for Schools (CRESS)
Susan O'Hara, Executive Director
530-752-7449

Area 3 Writing Project (A3WP)
Karen Smith, Director
530-752-8392

Sacramento Area Science Project (SASP)
Arthur Beauchamp, Co-Director
530-752-5876

UC Davis Math Project (UCDMP)
Pam Hutchinson, Director
Julie Oroso, Co-Director
530-752-6632

Center for Community School Partnership (CCSP)
Tina Murdoch, Director
530-752-4319

California After School Network
Frank Pasi, Director
530-752-6655

Center for Education and Evaluation Services (CEES)
Theresa Westover, Director
530-752-9523

Sacramento Area Youth Speaks Program
Vojra Watson, Director
530-370-2889

Edward Teller Education Center (ETEC)
925-422-5059

Student Services Office
106 School of Education Building
530-752-5887; Fax 530-754-6672
eduadvising@ucdavis.edu

Mary Reid, Director of Student Services
530-752-7259

Minor in Education
Program Coordinator: 530-752-5887

Graduate Group in Education
Program Coordinator: 530-752-7259

Capital Area North Doctorate in Educational Leadership (CANDEL)
Janet Gong, UC Davis Co-Director
Viki Montera, Sonoma State University Co-Director
Program Coordinator: 530-752-6664

Master of Arts in Education
Program Coordinator: 530-752-7259

Teacher Education-Credential
Program Coordinator: 530-752-7259

UC Davis Educational Research Center (UCERC)
530-752-4643; Fax 530-752-8019

Minor Program Requirements:
The UC Davis School of Education is committed to developing informed citizens and advocates for productive educational environments in a democratic society. Education courses are designed for undergraduate students from all majors. A Minor in Education will help students:

1. Develop an understanding of the issues and concerns of public and private education
2. Complete prerequisites for the teaching credential program
3. Work towards a master's degree or doctoral degree in education or related field
4. Seek employment in policy, advocacy, or other education related careers

Courses, Students must complete 20 units in the Minor program in Education. At least 12 units of the 20-unit minimum for the minor must be in Education. The remaining units for the minor may be in education or a related field as approved on the electives list.

Minor Program Requirements:

Upper Division Required Courses ............... 12
Education 100, 110, 120 ................................ 12

Elective Courses ....................................... 8
The remaining eight units may be taken from the following courses:
Education 115, 181 ................................... 2
Education 138, 140 .................................. 3
Education 114, 119, 122, 130, 142, 147,
150, 152, 173, 185 ................................... 4
Education 192, 198 ................................... variable

Approved Courses Outside of Education
Agricultural Education 100 ......................... 3
Chicano Studies 192 .................................... 1-3
Mathematics 197CT .................................. 1-5
University Writing Program 197CT ........... 2-4

Minor Advisers. A designated faculty member in the School of Education may advise students and give final approval on the minor. For additional information contact the Student Services office in School of Education Building.

Courses in Education (EDU)

Lower Division
81. Learning in Science and Mathematics (2)
Lecture/discussion—2 hours, field work—2 hours.
Exploration of how students learn and develop understanding in science and mathematics classrooms. Introduction to case studies and interview techniques and their use in K-6 classrooms to illuminate factors that affect student learning. Limited enrollment. [Same course as Geography 81L.] (P/NP grading only.) GE credit: SS, VL, WRT. I, II, III, IV, V, VI.

92. Internship (1-3)
Internship—3-9 hours. Prerequisite: consent of instructor. Enrollment dependent on availability of intern placements. Internship as a teacher's aide or tutor in K-12 classrooms under the supervision of a faculty member. May be repeated for credit. (P/NP grading only.)

98. Directed Group Study (1-5)
Prerequisite: consent of instructor. Primarily for lower division students. (P/NP grading only.)

Upper Division
100. Introduction to Schools (4)
Lecture—3 hours, field work—3 hours. Prerequisite: upper division standing. Study of occupational concerns of teachers; skills for observing classroom activities; school organization and finance; school...
180A. Computers in Education (3)
Lecture/discussion—1 hour; laboratory—2 hours; project—2 hours. Prerequisite: acceptance in Teacher Credential Program; successful completion of course 180A. Restricted to Teaching Credential Majors. Applications of computers in education as instructional, intellectual, and communication tools. (Deferred grading only, pending completion of sequence) I—II, III, (I, III) Martindale, Mendle, Pomery, White

180B. Computers in Education (3)
Lecture/discussion—1 hour; laboratory—2 hours; project—2 hours. Prerequisite: acceptance in Teacher Credential Program; successful completion of course 180A. Restricted to Teaching Credential Majors. Applications of computers in education as instructional, intellectual, and communication tools. (Deferred grading only, pending completion of sequence) I—II, III, (I, III) Martindale, Mendle, Pomery, White

180C. Computers in Education (3)
Lecture/discussion—2 hours; field work—2 hours. Prerequisite: major in mathematics, science, or engineering; or completion of a one-year sequence of science or calculus and consent of the instructor. Class size limited to 40 students per section. Exploration of effective teaching practices based on examination of how middle school students learn math and science. Selected readings, discussion and field experience in middle school classrooms. (Same course as Geology 181.) GE credit: SS, WE—II, III, (I, III) Day, Passmore

180D. Seminar Project for Curricular Integration (1)
Seminar—1 hour. Prerequisite: Agricultural Systems and Environment 21 or appropriate microcomputer course, experience with instructional computing and consent of instructor. Design and implementation of a curricular unit to integrate computer technology into a K-12 classroom setting. A project-based seminar intended for students with substantial prior experience in computer-related technologies. Not open for credit to students who have completed course 180A or 181.

183. Teaching High School Mathematics and Science (3)
Lecture—2 hours; field work. Prerequisite: course 81/Geology 81 or course 181/Geology 181 and major in mathematics science or engineering; or completion of a one-year sequence of science or calculus and consent of the instructor. Limited to 40 students per section. Exploration and creation of effective teaching practices based on examination of how high school students learn mathematics and science. Field experience in high school classrooms. (Same course as Geology 183.) GE credit: SocSci | OL, SS, WE—I, II, III, (I, III) Passmore, Stevenson

185. Learning in a Digital Age: Information, Schooling, and Society (4)
Lecture/discussion—2 hours; lecture/laboratory—2 hours. Focus on the changing nature of learning in a digital age: social media, ubiquitous connectivity, online education, electronic communications, writing, gaming, and youth culture. Readings will be drawn from major recent works detailing fundamental shifts in information, schooling, and society, offered in alternate years. GE credit: VL, SS—II, IV

192. Internship (1-3)
Internship—2.8 hours; discussion—1 hour. Prerequisite: upper division standing and consent of instruc- tor. Internship as a tutor, teacher’s aide, or peer teaching assistant.
counselor in a school or educational counseling setting under the supervision of a faculty member. May be repeated for credit. [P/NP grading only.]

197. Tutoring in Education (1-2)
Tutoring — 1-2 hours. Prerequisite: upper division standing and consent of instructor. Leading of small voluntary discussion groups affiliated with the School’s upper division courses under the supervision of, and at the option of, the course instructor, who will submit a written evaluation of the student’s work. May be repeated one time for credit for a total of 4 units. [P/NP grading only.]

198. Directed Group Study (1-5)
Prerequisite: consent of instructor. [P/NP grading only.]

199. Special Study for Advanced Undergraduates (1-5)
Prerequisite: upper division standing and consent of instructor. [P/NP grading only.]

Graduate

200. Educational Research (4)
Lecture — 2 hours; discussion — 2 hours. Prerequisite: introductory statistics and graduate standing in education or consent of instructor. Defining educational research questions, reviewing relevant literature, developing research proposals, developing research instruments, selecting appropriate data analysis procedures, and writing research projects. A case problem will provide practice in designing and reporting research. — I. (I.)

201. Qualitative Research in Education (4)
Seminar — 2 hours; lecture — 2 hours. Prerequisite: graduate standing or consent of instructor. Examines the design and conduct of educational research using non-numerical data (e.g., text, discourse, imagery and artifacts). Focuses on issues (e.g., validity, reliability, generalizability, ethics) and reporting genres (e.g., narrative accounts, case studies, and arguments). — I. (I.) Enright

202N. Computer Analysis of Qualitative Data (4)
Seminar — 3 hours; laboratory — 2 hours. Prerequisite: graduate standing or consent of instructor. Introduces the theoretical assumptions underlying traditional test construction, as well as the basic statistical principles involved in the design, evaluation, and interpretation of standardized tests. Also introduces the debates surrounding the uses of different kinds of tests and evaluation tools. — I. (I.)

204A. Quantitative Methods in Educational Research: Analysis of Correlational Designs (4)
Discussion — 2 hours; laboratory/discussion — 2 hours. Prerequisite: course 114 or the equivalent. Methods for analysis of correlation data in educational research. Topics include multiple correlation and regression, discriminant analysis, logistic regression, and canonical correlation. Emphasis on conceptual understanding of the techniques and use of statistical software. Offered in alternate years. — II. (II.) Kortamer

204B. Quantitative Methods in Educational Research: Experimental Designs (4)
Discussion — 2 hours; discussion/laboratory — 2 hours. Prerequisite: course 114 or the equivalent. Methods for analysis of experimental data in educational research. Topics include ANOVA, fixed vs. random effects models, repeated measures ANOVA, analysis of covariance, MANOVA, chi square tests, small sample solutions to t and ANOVA. — I. (I.) Abedi

205A. Ethnographic Research in Schools I: Current Theory and Practice (4)
Lecture — 4 hours. Prerequisite: graduate standing. Current literature and society related to schools. Emphasis on the organizational structure of institutions, and the analysis of face-to-face interaction. With appropriate study of field notes, the design and conduct of educational research. May be repeated for credit. — I. (I.) Watson-Gegge

205B. Ethnographic Research in Schools II: Field-Based Research Approaches (4)
Discussion — 4 hours. Prerequisite: graduate standing and course 205A. Student research projects in specific schools with cooperative critical analysis of the design, data collection, and inference by researchers. Students will continue to meet with instructor as a group throughout the quarter to discuss specific projects. — II. (II.) Watson-Gegge

206A. Inquiry into Classroom Practice: Traditions of Research Approaches (4)
Lecture/discussion — 2 hours; fieldwork. Prerequisite: consent of instructor; open to graduate teaching credential students. Introduction to traditions and approaches of teachers conducting research in their own classrooms. Topics include sources, research methods, methods of data collection and analysis, and written genre conventions. — I. (I.)

206B. Inquiry into Classroom Practice: Application of Research to Teacher Research Approaches (4)
Lecture/discussion — 3 hours; fieldwork — 1 hour. Prerequisite: satisfactory completion of course 206A or consent of instructor. Open to graduate teaching credential students. Topics include teacher research through the development, implementation and evaluation of a short-term classroom research-based intervention. Particular attention to research that enhances learning of English language learners and under-performing students. — III. (III.) Athenas, Ballard, Passmore, Fallis, Booker, White

206C. Inquiry into Classroom Practice: Study Design (4)
Seminar — 3 hours; fieldwork — 1 hour. Prerequisite: satisfactory completion of course 206B or consent of instructor. Proposal development for classroom-based inquiry designed to address student learning needs. Mixed methods research design and preliminary data collection approaches. Design and application of baseline student assessment for proposal development. Literature review. Data collection in K-12 classrooms required. Open to Graduate MA Credential students only. — I. (I.) Ambrose, Fallis, Merino, Wallace

206D. Inquiry into Classroom Practice: Data Analysis and Reporting (4)
Seminar — 2 hours; fieldwork — 1 hour; extensive writing or discussion. Prerequisite: satisfactory completion of course 206C or consent of instructor. Support of the inquiry begun in course 206C through continuous collaboration with faculty feedback resulting in the writing and presentation of a research study. Open to Graduate MA Credential students. — II. (II.) Ambrose, Fallis, Merino, Wallace

207. Concept Analysis (4)
Lecture — 2 hours; discussion — 2 hours. Prerequisite: graduate standing or consent of instructor. Development of the skills of philosophical analysis and argument for the establishment of a point of view, in the consideration of a particular topic or practice. Classical and contemporary approaches to subject matter and activity emphasis, hidden curriculum, and more. — I. (I.)

208. Presenting Educational Research in Written Reports (4)
Seminar — 3 hours; extensive writing. Prerequisite: graduate standing or consent of instructor. Analysis and critique of recent research on educational research methods. Analysis and critique of written reports, research genres; competing discourse conventions of educational research, policy, and practice; the social organization of publishing educational research. May be repeated one time for credit. Offered irregularly.

209. Image-based Field Research (4)
Lecture/discussion — 3 hours; fieldwork — 2 hours. Prerequisite: graduate standing or upper division standing with consent of instructor. Critical and practical understanding of video and still photography as resources for enhancing field research in schools and other social settings.

210. The Psychology of School Learning (4)

211. Sociocultural and Situative Perspectives on Learning and Cognition (4)
Lecture/discussion — 3 hours; extensive writing — 1 hour. Prerequisite: graduate standing or consent of instructor. Sociocultural and situative theories of cognition and learning. Major ideas of L.S. Vygotsky, followed by modern perspectives: situated cognition, cognitive apprenticeship, situated learning, communities of practice, cultural-historical activity theory, and distributed cognition. Implications of each theoretical perspective for educational practice. Offered in alternate years. — III. Ching, White

215. Research on Achievement Motivation in Education (4)
Seminar — 3 hours; term paper. Prerequisite: graduate standing in Education or consent of instructor. Analysis and critique of recent research on cognitive processes related to achievement motivation in school settings. Topics include self-determination theory, attribution theory, goal theory, intrinsic and extrinsic motivation, learned helplessness, psychological reactance, gender, culture, and research design. Offered in alternate years.

220. Concepts and Methods of Policy Analysis (4)
Seminar — 3 hours; fieldwork; term paper. Prerequisite: graduate standing. Introduction to concepts and methods of policy analysis. Focus on the interplay between educational issues and problems; policy development; constructing persuasive policy analyses; issues related to policy process. — I. (I.) Timar

221. Culture and Social Organization of Schools (4)
Seminar — 4 hours. Prerequisite: graduate standing or consent of instructor. Culture and social organization of schools. Examines perspectives of social researchers, educational policymakers, and school members and their implications for educational research, policy and practice.

222. School Change and Educational Reform (4)
Lecture/discussion — 2 hours; seminar — 2 hours. Prerequisite: graduate standing in Education with course 120 or the equivalent. Analysis of models, processes, and case studies of school change and educational reform with reference to the variable characteristics of schools and schooling, planned and unplanned change, the moral evaluation of school change, and the role of educational research.

223. Education and Social Policy (4)
Seminar — 4 hours. Prerequisite: graduate standing in Education or consent of instructor. Focuses on understanding the social and political context of edu-
225. Education Policy and Law (4)
Lecture/discussion—4 hours. Prerequisite: graduate standing or consent of instructor. Examination of law as an instrument of social policy. Specific focus on the legalization of education decision-making, its causes, dimensions, and effects on administrative and teacher authority. —Timar

226. Culture and Social Organization of Higher Education (4)
Seminar—3 hours; field work—1 hour. Prerequisite: graduate standing or consent of instructor. Critical study of culture and social organization of higher education institutions policies and functions in the U.S., with some attention to other countries. —Gonzalez

228. Politics and Governance of Education (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing. Examination of political power, representation, influence, decision-making and inter-governmental relations in the public schools. Offered in alternate years. —Timar

229. Education Finance Policy (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing. Examination of (1) United States financing public education, (2) the relationship between school finance and education policy, and (3) the relationship between education finance and education practice. —Rose

230. Special Topics in Education Policy (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing or consent of instructor. Selected topics in education policy. Designed to facilitate preparation for the qualifying examination or dissertation. Students will critically analyze scholarly work including their own works in progress. May be repeated for credit with topic changes. —Timar

233. Critical Pedagogy (4)
Seminar—4 hours. Prerequisite: Critical Theory 200A and graduate standing. A socio-cultural critique, from an interdisciplinary perspective, of educational reform and change. The critique will include an analysis of the influence of text content on the perpetuation of social power differences. Offered irregularly. —Gee

236. Application of Hierarchical Linear Models in Education Research (4)
Lecture—2 hours; lecture/discussion—2 hours; term paper. Prerequisite: course 204A or similar course with permission of instructor. Applications of hierarchical linear models in education research across multiple areas, such as policy, curriculum, and assessment. Develop working knowledge of hierarchical linear modeling and an understanding of its use in existing research as well as student's work. —Abedi

237. Survey Research Methods (4)
Lecture/discussion—3 hours; field work—1 hour; term paper. Prerequisite: course 114 or equivalent. Theories, principles and applications of survey research methodology. Students develop, validate, and administer survey instruments; select representative samples; conduct focus groups; and analyze survey data. Familiarity with introductory concepts in descriptive and inferential statistics is assumed. Offered in alternate years. —Ilki

238. Participatory Action Research (PAR) (4)
Lecture/discussion—3 hours; field work—1 hour. Prerequisite: minimum of one quarter recommended of an introductory research methods course. Principles and strategies related to research methods that emphasize collaborating with those affected by the issue being researched in order to educate, take action or effect social change. Conduct interviews with stakeholders, case analyses and research proposals. —Ill. Ballard

242. Research on Text Comprehension (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing or consent of instructor. Analysis of recent research related to cognitive processing of written texts. Topics include word decoding, schema theory, background knowledge, assimilation, accommodation, working memory, processing depth, vocabulary acquisition, sentence-level processes, text-level processes, text structure, implications for curriculum and instruction. —Torkovich

243. Research on the Teaching and Learning of Statistics (4)
Seminar—4 hours. Prerequisite: graduate standing in Education or consent of instructor. Study of issues in research on composition; history of composition studies; data analysis techniques; product and process approaches; cognitive and social perspectives. Offered in alternate years.

244. Topical Seminar in Language, Literacy and Culture (4)
Seminar—3 hours; project—1 hour. Prerequisite: graduate standing or consent of instructor. Critical study of selected issues of language, literacy, and culture as they relate to education. May be repeated two times for credit when topic differs. —I., II., III. (I., II., III.), Athanases, Enright, Martinez, Tornovitch

245. Theory and Research in Early Literacy (4)
Seminar—3 hours; field work—1 hour. Prerequisite: graduate standing or consent of instructor. Analysis of child's initial processes in learning to read extending from the preschool years into second grade. Topics include emergent literacy, phonological awareness, word recognition, decoding, spelling, vocabulary, and language-based strategies reading, assessment, intervention, and instruction. Offered in alternate years. —III. Tornovitch

246. Reading as a Social and Cultural Process (4)
Lecture—3 hours; field work—1 hour. Prerequisite: course 211 recommended or consent of instructor. Recent theoretical and empirical work on reading in social contexts. Topics include reading as an individual interactive process, reading as a social and cultural process; critical perspectives on reading; implications of contrastive theoretical perspectives for curriculum and instruction in reading. Offered in alternate years.

247. Research on Response to Culturally Diverse Literature, K-12 (4)
Lecture—3 hours; field work—1 hour. Research on response to culturally diverse literature in classrooms and other K-12 settings. Includes issues related to response theories, values in expanding the literary canon, problems of cultural authenticity, resistance to multicultural literature, and instruction for diverse texts and learners. Offered in alternate years. —II., Athanases

248. Academic Language and Literacies (4)
Seminar —3 hours; field work; project. Prerequisite: graduate standing or consent of instructor. Exploration of theoretical and research on academic language and literacies for the schooling of first and second language learners. Students use basic qualitative methods to collect and analyze classroom language and literacy data. Offered in alternate years. —III.) Enright

249. Discourse Analysis in Educational Settings (4)
Seminar—3 hours term paper. Prerequisite: graduate standing or consent of instructor. Examination of discourse and research on classroom discourse (lessons, teaching/learning interactional sequences). Final term paper is an analysis of discourse data tape-recorded by student in a field setting. —III. Watson-Gegos

251. Research in Bilingual and Second Language Education (3)
Seminar—3 hours. Prerequisite: course 151; knowledge of a foreign language. Discussion and analysis of recent research in bilingual and second language education. Topics include: language acquisition in second language learners and bilinguals, second language teaching methodologies, models in bilingual education, interaction analysis in bilingual/cross-cultural classrooms, use of the vernacular in classrooms. Offered irregularly.

253. Language and Literacy in Linguistic Minorities (3)
Seminar—4 hours. Prerequisite: graduate standing in Education with upper division course work in mathematics or consent of instructor. Analysis of curricular issues and goals in mathematics education including long-term trends, current status and influences, proposed changes, and evaluation issues. Selected curriculum projects will be examined. —Ambrose, White

256A. Research in Mathematics Education (4)
Seminar—4 hours. Prerequisite: graduate standing in Education with upper division course work in mathematics, or consent of instructor. Examination of research process in mathematics education, review of critical productive problems identified by researchers; evolution of trends, issues, theories and hypotheses in various areas of mathematics education research. Course emphasizes foundations. Offered in alternate years. —Ambrose, White

256B. Research in Mathematics Education (4)
Seminar—4 hours. Prerequisite: graduate standing in Education with upper division course work in mathematics, or consent of instructor. Current research issues and activities in mathematics education, trends, issues, and hypotheses. Formulation of research questions and design of studies. Projection of future directions for research. Offered in alternate years. —Ambrose, White

257. Computer Technology in Mathematics Education (4)
Seminar—4 hours. Prerequisite: graduate standing in Education with upper division course work in mathematics, or consent of instructor. Examination of research process in mathematics education, review of critical productive problems identified by researchers; evolution of trends, issues, theories and hypotheses in various areas of mathematics education research. Course emphasizes foundations. Selected efforts to integrate technology into mathematics instruction will be examined. Offered irregularly. —White

260. The Modern History of Science Education (4)
Seminar—4 hours. Prerequisite: graduate standing in Education with upper division coursework in science, or consent of instructor. History of curricular issues and goals in science education from the late 19th century forward, including long-term trends, current status and influences, proposed changes, and evaluation issues. National science standards and curriculum projects. Offered in alternate years. —Passmore

262A. Research Topics in Science Education I (4)
Seminar—4 hours. Prerequisite: graduate standing in Education with upper division coursework in science, or consent of instructor. Research process and product in science education research, review of critical science education issues; evolution of trends, theories and hypotheses in various areas of science education research. Survey of current major research in science education. —Passmore
262B. Research Topics in Science Education II (4)
Seminar.—Prerequisite: course 262A and graduate standing in Education with upper-division coursework in science. Current research issues and activities in science education: status, trends, theories and empirical problem formulation of research, historical development of various curriculum and teaching methodologies, purposes and theories. Analysis of the nature/assumptions/logic of qualitative research design. Credit may be applied to upper-division coursework. Prerequisite: admission into the CANDEL EdD program or consent of instructor. II. (II.)

264. Scientific Literacy and Science Education Research (4)
Seminar.—4 hours. Prerequisite: graduate standing in Education with upper-division coursework in science, or consent of instructor. Current trends in science education reform locally, regionally, and nationally, and their implications for science education. Equity, access, and “science for all.” Offered in alternate years.—Passmore, Tixeria

270. Research on Teacher Education and Development (4)
Seminar.—3 hours, project. Prerequisite: graduate standing. Experience with formal or informal teaching recommended. Research on teacher preparation in university credential programs and on professional development of in-service teachers, with special attention to teacher preparation for work with culturally and linguistically diverse youth.—III. Athanassios

271. Supervision of Student Teachers: Research, Theory & Practice (4)
Lecture/discussion—3 hours; fieldwork.—1 hour. Prerequisite: graduate standing. Research, theory and practice in the preparation and supervision of teacher candidates in university teacher credential programs during the student teaching field placement and the mentoring of novice teachers by experienced practitioners.—II. (II.)

280A. Inquiry and Practice: Qualitative Research for Educational Leaders (4)
Lecture/discussion—4 hours; fieldwork; project. Prerequisite: admission into the CANDEL EdD program or consent of instructor. Preparing students to understand the nature/assumptions/logic of qualitative research methodology as applied to educational settings, focusing on issues of design/conceptualization/interpretation/application of qualitative research procedures. Students will use these methods in conducting studies in their educational settings.—I. (II.)

280B. Inquiry and Practice: Quantitative Research for Educational Leaders (4)
Lecture/discussion—4 hours; fieldwork; project. Prerequisite: admission into the CANDEL EdD program or consent of instructor. Field-based and general quantitative research methods in education will focus this course. Students acquire skills and knowledge to collect, process, interpret, and communicate quantitative data in educational research, dissertation projects, and field-based projects.—I. (II.)

280C. Inquiry and Practice: Research Design and Application for Educational Leaders (4)
Lecture/discussion—4 hours; fieldwork; project. Prerequisite: admission into the CANDEL EdD program or consent of instructor. Preparing students to understand the nature/assumptions/logic of qualitative research methodology as applied to educational settings, focusing on issues of design/conceptualization/interpretation/application of qualitative research procedures. Students will use these methods in conducting studies in their educational settings.—II. (II.)

281A. Problem-Based Learning Courses: Part 1 (4)
Lecture/discussion—4 hours; extensive writing or discussion; fieldwork. Prerequisite: admission into the CANDEL EdD program or consent of instructor. Students identify relevant issues from their educational setting, engage in data collection/analysis, write-up the process/results, and present to class. Work may become a dissertation proposal, if the problem or its extension is of sufficient interest and value.—I. (II.)

281B. Problem-Based Learning Courses: Part 2 (4)
Lecture/discussion—4 hours; extensive writing or discussion; fieldwork. Prerequisite: admission into the CANDEL EdD program or consent of instructor. Continuation of part one.—II. (II.)

281C. Problem-Based Learning Courses: Part 3 (4)
Lecture/discussion—4 hours; extensive writing or discussion; fieldwork. Prerequisite: admission into the CANDEL EdD program or consent of instructor. Continuation of part two.—III. (III.)

282A. Beginning Issues and Practices: Contemporary Educational Leadership (4)
Lecture/discussion—4 hours; fieldwork; project. Prerequisite: admission into the CANDEL EdD program or consent of instructor. Students explore the history and emergent relationships among leadership theories/practice and their application to current educational settings. Students will reflect on and refine their personal theory of leadership.—I. (II.)

282B. Beginning Issues and Practices: Diversity Issues for Educational Leaders (4)
Lecture/discussion—4 hours; fieldwork; project. Prerequisite: admission into the CANDEL EdD program or consent of instructor. The diversity of stakeholders and community in school and college settings will be explored. Emphasis will be placed on the interaction between underrepresented segments of society and educational institutions. Best Practices in leading diversity will be explored.—II. (III.)

283A. Advanced Issues and Practices: Leadership Across Communities (4)
Lecture/discussion—4 hours; fieldwork; project. Prerequisite: admission into the CANDEL EdD program or consent of instructor. Preparing students to understand the nature/assumptions/logic of qualitative research design and analysis.—I. (II.)

283B. Advanced Issues and Practices: Leadership and Student Services (4)
Lecture/discussion—4 hours; fieldwork; project. Prerequisite: admission into the CANDEL EdD program or consent of instructor. Preparing students to understand the nature/assumptions/logic of qualitative research design and analysis.—II. (III.)

284A. Policy: History and Theory of Educational Policy (4)
Lecture/discussion—4 hours; fieldwork; project. Prerequisite: admission into the CANDEL EdD program or consent of instructor. Students will conduct critical analyses of policy at the federal, judicial, state, regional and local levels. Contemporary issues, including education reform, globalization, and foreign language curricula will be examined. Topics include: educational opportunity, equity, access, regulation, testing, tenure, accountability.—I. (II.)

284B. Policy: Formulating and Influencing Policy (4)
Lecture/discussion—4 hours; fieldwork; project. Prerequisite: admission into the CANDEL EdD program or consent of instructor. Students will conduct critical analyses of policy at the federal, judicial, state, regional and local levels. Contemporary issues, including education reform, globalization, and foreign language curricula will be examined. Topics include: educational opportunity, equity, access, regulation, testing, tenure, accountability.—I. (II.)

284C. Policy: Possibilities and Limitations of Educational Policy in a Democracy (4)
Lecture/discussion—4 hours; fieldwork; project. Prerequisite: admission into the CANDEL EdD program or consent of instructor. Students will critically examine the democratic purposes of education in light of existing National, State, and local policy reform efforts. Questions like, in what ways are these reforms and policies guided by democratic ideals and challenged by those ideals.—II. (II.)

Lecture/discussion—4 hours; fieldwork; project. Prerequisite: admission into the CANDEL EdD program or consent of instructor. Topics include: education finance theory, contemporary finance policy issues, intergovernmental relations, effective resource management, budget analysis and preparation.—I. (II.)

Lecture/discussion—4 hours; fieldwork; project. Prerequisite: admission into the CANDEL EdD program or consent of instructor. Human resource management research and theory and for applying human resource techniques in the educational setting.—III. (III.)

286A. Organizational Structures and Change: Data-Driven Decision-Making for Change (4)
Lecture/discussion—4 hours; fieldwork; project. Prerequisite: admission into the CANDEL EdD program or consent of instructor. Students use and examine multiple sources of information and data and trends found in making quality decisions to improve K-12 community college settings and addressing problems at sites. Students learn limitations of these data sources.—I. (II.)

286B. Organizational Structures and Change: Curriculum & Instruction Issues in Education (4)
Lecture/discussion—4 hours; fieldwork; project. Prerequisite: admission into the CANDEL EdD program or consent of instructor. This course addresses the developmental issues and curricular changes that have shaped contemporary education. Students learn to participate in decision-making in leading diverse schools.—I. (II.)

287. CANDEL Dissertation Seminars (6-12)
Prerequisite: admission into the CANDEL EdD program or consent of instructor. Third year seminars encourage students to complete dissertation within the year. Cohort members continue to meet with faculty and share their writing, data collection, analysis, discussion of results, development of conclusions/implications. Meeting times, location, credit until completion of dissertation. (S/U grading only)—I, II, III. (I, II, III.)

287D. CANDEL Dissertation (6-12)
Prerequisite: passing of qualifying examination in CANDEL program and advancement to candidacy; consent of instructor. Cohort members continue to meet with faculty and share their writing, data collection, analysis, development of conclusions/implications. May be repeated nine times to earn the 30 credits required for completion of dissertation. (S/U grading only)—I, II, III, IV. (I, II, III.)

291. Proseminar in Education (4)
Seminar.—3 hours lecture/1 hour discussion. Prerequisite: admission to the Ph.D. graduate program in Education. Professional induction into educational research and practice and principles of ethical and scholarly research. Analysis of debates within field. Investigation of K-12 educational outreach efforts at UC Davis.—I. (II.)
292. Special Topics in Education (2-4)
Variable—2-4 hours. Prerequisite: completion of doctoral core courses in Education or consent of instructor. Special topics in education. Designed to facilitate preparation for the qualifying examination or dissertation. Students will critically analyze scholarly work including their own works in progress.May be repeated for credit.—II, III, IV, VI, VII, VIII.
294. Special Topics in Science, Agriculture and Mathematics Education (4)
Seminar—3 hours; term paper; project. Prerequisite: graduate standing. Critical study of special topics of research relevant to science, agricultural, and mathematical education. Students and faculty present work-in-progress on a major research project, and critique and analyze and discuss one another's developing scholarly work. May be repeated for credit when topic differs.—II, III, IV, VI, VIII.
298. Group Study (1-5)
(S/U grading only.)
299. Individual Study (1-6)
Independent study—3-18 hours. Individual study under the direction of a faculty member. (S/U grading only.)
299D. Research (1-12)
Independent study—3-36 hours. Research for individual graduate students. (S/U grading only.)
Professional
300. Reading in the Elementary School (4)
Lecture—3 hours; fieldwork—3 hours. Prerequisite: graduate standing. Principles, procedures, and curricula materials for teaching of reading. Includes decoding skills with a special emphasis on phonics, comprehension skills, study skills, and reading in the content areas.—II, III.
301. Reading in the Secondary School (4)
Discussion—4 hours. Prerequisite: graduate standing, enrollment in the secondary credential program, or consent of instructor. Principles, procedures, and materials for teaching. Secondary school teachers improve the reading competence of students. Strategies for enhancing learning through reading and writing in all disciplines, with special attention to linguistically diverse populations.—II, III, IV, VI.
302. Language Arts in the Elementary School (2)
Lecture—2 hours. Prerequisite: graduate standing. Principles, procedures, and materials for the teaching of oral and written expression, listening, speaking, reading, and children's literature in elementary schools.—I, III.
304A. Teaching in the Elementary Schools (2-18)
Lecture/discussion—2 hours; fieldwork—7-9 hours. Prerequisite: acceptance into a teacher education program. Supervised teaching in regular classrooms in elementary schools. Selection and organization of teaching materials. Introduction to techniques of diagnosing school achievement of children.—I, II.
304B. Teaching in the Elementary Schools (2-18)
Lecture/discussion—2 hours; fieldwork—9-48 hours. Prerequisite: acceptance into a teacher education program. Supervised teaching in regular classrooms in elementary schools. Current conceptions of elementary school curricula, emphasis on contribution from the social, biological, and physical sciences. Emphasis on effective teaching methods.—II, III.
304C. Teaching in the Elementary Schools (2-18)
Lecture/discussion—2 hours; fieldwork—9-48 hours. Prerequisite: acceptance into a teacher education program. Supervised teaching in regular classrooms in elementary schools. Evaluation of teaching materials including instructional technology. Current elementary school curricula, emphasis on contributions from fine arts and humanities.—III, IV, V, VI, VII, VIII.
305A. Teaching in the Middle Grades (5-8)
Lecture—2 hours; seminar—2 hours; student teaching—15-48 hours. Prerequisite: acceptance into a teacher education program. Supervised teaching in regular or special education classrooms in middle grades. Current conceptions of the middle-grades curriculum with emphasis on social, biological, and physical sciences. Teaching methods and diagnostic testing.—II, III.
Lecture/discussion—2 hours; fieldwork—9-48 hours. Prerequisite: acceptance into a teacher education program. Supervised teaching in regular secondary classrooms. Techniques for classroom communications; constructing goals and objectives; assessment of learning; special problems of adolescents; instructional technology.—II, III, IV, VI, VII, VIII.
307. Methods in Elementary Science (2)
Lecture/discussion—2 hours. Prerequisite: acceptance into a teacher education program. Principles, procedures, and materials for teaching the biological and physical sciences in elementary schools.—I, II, III.
308. Methods in Elementary Social Studies (2)
Lecture/discussion—2 hours. Prerequisite: acceptance into a teacher education program. Principles, procedures, and materials for teaching history and the social sciences in elementary schools.—II, III.
309. The Teaching of Mathematics, K-9 (3)
Lecture/discussion—3 hours. Prerequisite: acceptance into a teacher education program. Mathematics curriculum and teaching methods for K-9 reflecting the needs of California's diverse student populations.—I, II, III.
322A. Pedagogical Preparation for Secondary Social Science I (3)
Lecture/discussion—2 hours; discussion—1 hour. Prerequisite: course 322A. Intermediate teaching methods and curriculum approaches for secondary social science teaching. State and national curriculum standards; application of learning theory to effective instruction; interdisciplinary teaching and active learning approaches; effective teaching strategies for English Learners.—I, II.
322B. Pedagogical Preparation for Secondary Social Science II (3)
Lecture/discussion—1 hour; discussion—2 hours. Prerequisite: course 322A. Intermediate teaching methods and curriculum approaches for secondary social science teaching. Interdisciplinary approaches to teaching major themes across social science content areas; teaching potentially controversial social science topics; teaching democratic civic values, student assessment and evaluation.—II, III.
323A. Physical Science in the Secondary School (3)
Laboratory/discussion—2 hours; discussion/laboratory—1 hour. Prerequisite: acceptance into a teacher education program. Activity-based overview of concepts and processes in secondary school physical sciences. Emphasis upon philosophy, appropriate teaching methods, materials, assessment and evaluation of learning.—II, III.
323B. Life Sciences in the Secondary School (3)
Laboratory/discussion—2 hours; discussion/laboratory—1 hour. Prerequisite: acceptance into a teacher education program. Effective teaching based overview of concepts and processes in secondary school biological and life sciences. Emphasis on philosophy, appropriate teaching methods, materials, assessment and evaluation of learning, and issues.—II, III.
324A. Methods and Technology in Secondary Mathematics I (4)
Lecture/discussion—4 hours. Prerequisite: admission into a teacher education program or consent of instructor. Introduction to methods and curriculum for teaching mathematics at the secondary level. Introduction to applications of computer technology as instructional, intellectual, and communication tools in mathematics teaching.—I, II.
324B. Methods in Secondary Mathematics II (3)
Lecture/discussion—3 hours. Prerequisite: admission into a teacher education program or consent of instructor. Expansion of methods and curriculum for teaching mathematics at the secondary level. Intermediate applications of computer technology as instructional, intellectual, and communication tools in mathematics teaching.—II, III.
325. Research and Methods in Secondary English Language Arts (4)
Discussion—4 hours. Prerequisite: admission to graduate standing or credential program in Education or consent of instructor. Research on teaching and learning in the language arts. Principles, procedures and materials for improving the writing, reading and oral language of secondary students, with special attention to students from culturally and linguistically diverse populations.—I, II.
326. Teaching Language Minority Students in Secondary Schools: Methods and Research (4)
Seminar—3 hours; fieldwork—3 hours. Prerequisite: graduate standing in Education of consent of instructor. Research on principles, procedures and curricula for teaching discipline-specific concepts to language minority students in secondary schools. Second-language acquisition principles and instructional strategies.
327A. Teaching Methods for Secondary Foreign Language/Spanish, Part I (3)
Lecture—3 hours. Prerequisite: acceptance into a teacher education program or consent of instructor. Introduction to methods for teaching Spanish as a foreign and a heritage language in secondary schools. State and National Standards. Theories on second language acquisition. Lesson plans. Effective teaching strategies and class management. Open to Graduate Teaching Credential students.
327B. Teaching Methods for Secondary Foreign Language/Spanish, Part II (3)
Lecture—3 hours. Prerequisite: course 327A or consent of instructor. Continuation to methods for teaching Spanish as a foreign and a heritage language in secondary schools. Research and practice on foreign and heritage language teaching. Expansion of effective teaching strategies and class management. Open to Graduate Teaching Credential students.
398. Group Study (1-5)
(S/U grading only.)
399. Individual Study (1-5)
(S/U grading only.)

Education (A Graduate Group)

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