281. Principles and Practice of Forensic Serology and DNA Analysis (3)

Lecture—2 hours; lecture/discussion—3 hours. Prerequisite: Forensics/courses 278 or Forensics/courses 280, or equivalent; consent of instructor. Restricted to students enrolled in the M.S. in Forensic Science Program or by consent of Forensic Science Program Director. Comprehensive overview of forensic serology and DNA typing techniques and technologies. Strong emphasis on real-world applications, including preservation and tracking of biological evidence, detection and identification of bodily fluids, and methods to extract, quantify, and type human DNA. (Same course as Forensic Science 281.)—S. (J. R.)

284. Non-Human Forensic DNA—Theory and Casework Application (2)

Lecture—2 hours. Prerequisite: consent of instructor required for all students not enrolled in the MS Forensic Science program; upper division Molecular Biology and Genetics for its equivalent. Restricted to graduate standing. Provides a comprehensive understanding of plant and animal forensic biology in terms of sample collection, preservation, analytical methods, and of the invaluable line of inquiry these forensic evidence may permit. (Same course as Forensic Science 284.) Offered in alternate years.

290. Seminar (1)

Seminar—1 hour. Current topics in environmental toxicology. (S/U grading only) —F. W. S. (F. W. S.)

290C. Advanced Research Conference (1)

Lecture/discussion—1 hour. Prerequisite: consent of instructor. Presentation and critical discussion of advanced research methods and interpretation of research results. Designed primarily for graduate students. (S/U grading only) —F. W. S. (F. W. S.)

297T. Tutoring in Environmental Toxicology (1-5)

Hours and duties will vary depending upon course being tutored. Prerequisite: graduate standing in Environmental Toxicology, a related major, or the equivalent experience, and consent of instructor. Teaching toxicology including conducting discussion groups for upper-division environmental biology courses under direct guidance of staff. May be repeated for credit up to a total of 5 units. (S/U grading only.)

298. Group Study (1-5)

(S/U grading only)

Professional

396. Teaching Assistant Training Practicum (1-4)

Prerequisite: graduate standing. May be repeated for credit. (S/U grading only) —F. W. S. (F. W. S.)

Epidemiology

See Medicine and Epidemiology (VME), on page 382.
Prerequisite: course 204A; Statistics 108 recommended. Statistical Models, methods, and data analysis.

Lecture—4 hours. Prerequisite: Preventive Veterinary Medicine 402 or consent of instructor. Basic epideimologic concepts and approaches to epidemiologic research, with examples from veterinary and human medicine, including outbreak investigation, infectious disease epidemiology, properties of tests, and an introduction to epidemiologic study design and surveillance. [Same course as Preventive Veterinary Medicine 405.].—F. (S.)

205A. Principles of Epidemiology (4)
Lecture—4 hours. Prerequisite: Preventive Veterinary Medicine 402 or consent of instructor. Basic epidemiologic concepts and approaches to epidemiologic research, with examples from veterinary and human medicine, including outbreak investigation, infectious disease epidemiology, properties of tests, and an introduction to epidemiologic study design and surveillance. [Same course as Preventive Veterinary Medicine 405.].—F. (S.)

205B. Integration of Epidemiologic Concepts (2)
Discussion—2 hours. Prerequisite: Preventive Veterinary Medicine 405A. Concepts of epidemiologic study design-clinical trials, observational cohort studies, case control studies-introduced in course 205A are covered in more depth, using a problem-based format. Discussion of published epidemiologic studies. [Same course as Preventive Veterinary Medicine 206.].—F. (S.)

206. Epidemiologic Study Design (4)
Lecture—30 sessions; discussion—9 sessions; laboratory—2 sessions. Prerequisite: course 205 or consent of instructor. Introduction to epidemiologic study design-clinical trials, observational cohort studies, case control studies-introduced in course 205A are covered in more depth, using a problem-based format. Discussion of published epidemiologic studies. [Same course as Preventive Veterinary Medicine 206.].—F. (S.)

207. Advanced Epidemiologic Methodology (4)
Lecture/discussion—4 hours. Prerequisite: course 206. In-depth integration of advanced epidemiologic concepts, theory, methods, and applications for observational studies including random and systematic error, confounding, counterfactuals, causal inference, effect modification, internal and external validity, estimability, and interpretation of effect measures, and advanced study designs. [Same course as Public Health Sciences 207.].—S. (F.) Hertz-Picciotto, Kass

208. Analysis and Interpretation of Epidemiologic Data (3)
Lecture—16 sessions; laboratory—21 sessions; project: Prerequisite: course 204 (may be taken concurrently) and 207, and either Statistics 144 or Population Health and Reproduction 202 and entry skill in statistical software (e.g., SPSS, BMDP, SAS, Stata, Minitab, Splus). Application of theory and concepts of statistics and epidemiology to analysis and interpretation of data typically found in veterinary and human epidemiologic research. [Same course as Public Health Sciences 208.].—F. (S.) Beckett

209. History of Epidemiology in Public Health (2)
Lecture—0.5 hours; discussion—1.5 hours. Introduction to the history of epidemiology in solving major public health problems. Original historical articles will be read/discussed. Topics may include: infectious diseases, accidents/adverse events, nutritional epidemiology, properties of tests, and an introduction to epidemiologic study design and surveillance. [Same course as Preventive Veterinary Medicine 209.].—F. (S.)

210. Introduction to Molecular Epidemiology (3)
Lecture/discussion—3 hours. Prerequisite: course 205. Overview of the modern field of molecular epidemiology. Integration of molecular biology into traditional epidemiologic research by identifying pathways, molecules and genes that influence the risk of developing disease. [Same course as Public Health Sciences 210.].—W. (W.) Schmidt

211. Infectious Disease Epidemiology (3)
Lecture—2 hours; discussion—1 hour. Prerequisite: Preventive Veterinary Medicine 402 and/or consent of instructor. Introductory epidemiology course, e.g., course 205). Infectious disease epidemiology and prevention, with emphasis on human and veterinary diseases of global health importance. Major global health epidemics and challenges of infectious diseases, by mode of transmission. [Same course as Public Health Sciences 211.].—W. (W.) DeKiefer

212. Principles of Injury Epidemiology (3)
Lecture/discussion—3 hours. Prerequisite: course 205. Overview of the modern field of molecular epidemiology. Integration of molecular biology into traditional epidemiologic research by identifying pathways, molecules and genes that influence the risk of developing disease. [Same course as Public Health Sciences 212.].—W. (W.)
Evolution and Ecology

(Sharon Strauss, Ph.D., Chairperson of the Department)

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530-752-1272; http://www.eve.ucdavis.edu

Faculty

David J. Begun, Ph.D., Professor
Graham Coop, Ph.D., Associate Professor
Jonathan A. Eisen, Ph.D., Professor
(Medical Microbiology and Immunology)
Brian P. Gayday, Ph.D., Associate Professor
Jennifer R. Gremer, Ph.D., Assistant Professor
Richard K. Grosberg, Ph.D., Professor
Academic Senate Distinguished Teaching Award, UC Davis Prize for Teaching and Scholarly Achievement
Susan L. Keen, Ph.D., Senior Lecturer, SOE
Academic Federation Excellence in Teaching Award
Arytom V. Kopp, Ph.D., Professor
Charles H. Longley, Ph.D., Professor
Harris A. Lewin, Ph.D., Professor
(Neuro Med: Population Health and Reproduction)
Susan E. Lott, Ph.D., Assistant Professor
Brian R. Moore, Ph.D., Assistant Professor
Gail L. Patrichelli, Ph.D., Professor
Santiago Ramirez, Ph.D., Assistant Professor
Bruce H. Rannala, Ph.D., Professor
Marcel Rejmanske, Ph.D., Professor
Eric D. Sardjoko, Ph.D., Professor
Johanna M. Schenk, Ph.D., Professor
Thomas W. Schaefer, Ph.D., Professor
Sebastian Schreiber, Ph.D., Professor
Arthur M. Shapiro, Ph.D., Professor
Academic Senate Distinguished Teaching Award
John J. Stachowicz, Ph.D., Professor
Maureen L. Stanton, Ph.D., Professor
Academic Senate Distinguished Teaching Award
Maureen L. Stanton, Ph.D., Professor
UC Davis Prize for Teaching and Scholarly Achievement
Sharon Y. Strauss, Ph.D., Professor
Academic Senate Distinguished Teaching Award
Robert W. Pearcy, Ph.D., Professor Emeritus
Academic Senate Distinguished Teaching Award
Susan Williams, Ph.D., Professor Emeritus
Emeriti Faculty

James A. Doyle, Ph.D., Professor Emeritus
John H. Gillespie, Ph.D., Professor Emeritus
Milton Hildebrand, Ph.D., Professor Emeritus
Academic Senate Distinguished Teaching Award
Robert W. Peary, Ph.D., Professor Emeritus
Judy A. Stamps, Ph.D., Professor Emeritus
Kenneth E. F. Watt, Ph.D., I. D., Professor Emeritus

Affiliated Faculty

Carole Hom, Ph.D., Academic Coordinator
Randolph Pat, PhD., Academic Coordinator/Lecturer
David A. Spiller, Ph.D., Project Scientist Emeritus

The Evolution, Ecology and Biodiversity Major Program

The major in Evolution, Ecology and Biodiversity offers the student a broad foundation in the theoretical and empirical basis of our understanding of the diversity and distribution of living organisms.

Program.

The program, the program of study for the major begins with a core of introductory courses in mathematics, physics, and biology. These are followed by surveys course in biodiversity, evolution and ecology, and various more specialized courses that focus the student on particular disciplines or organisms, with an emphasis on problem-solving and critical thinking. Evolution, Ecology and Biodiversity majors earn either a Bachelor of Science or a Bachelor of Arts degree. The requirements for the B.S. degree require more science courses, such as biochemistry; whereas those for the A.B. degree program allow room for more electives within the humanities and social sciences. The A.B. degree is especially appropriate for those students who wish to combine arts and science with studying evolution and ecology for career preparation in such areas as scientific writing, translating or illustrating.

Career Alternatives. A degree in Evolution, Ecology and Biodiversity prepares the student for career opportunities in research, teaching, business, government, veterinary medicine, agriculture, environmental management, and industry. Many students gain some research experience while at UC Davis and choose to continue their training at the graduate level. This track offers careers in academics, government, environmental organizations, or business.

A.B. Major Requirements:

Preparatory Subject Matter

Biological Sciences 2A

Chemistry 2A

Preventive Veterinary Medicine 205

Preventive Veterinary Medicine 205A

Preventive Veterinary Medicine 205B

Research Methods in Epidemiology

Lab and discussion—3 hours. Prerequisite: course 205A or Preventive Veterinary Medicine 205; course 102 or Preventive Veterinary Medicine 205. Method used in epidemiologic research on occupational hazards. Topics include design of cohort and case-control studies, sample size, measuring dose, choosing a control group, validation of employment and health data, interpreting negative studies, and analysis software. Offered in alternate years. —F. (W.)

270. Research Methods in Occupational Epidemiology

Lab and discussion—3 hours. Prerequisite: course 252A or Preventive Veterinary Medicine 252; Statistics 102 or Preventive Veterinary Medicine 205. Methods used in epidemiologic research on occupational hazards. Topics include design and analysis of cohort and case-control studies, sample size, measuring dose, choosing a control group, validation of employment and health data, interpreting negative studies, and analysis software. Offered in alternate years. —S. (S.)

260. Epidemiology of Chronic Diseases and Aging

Lecture/discussion—3 hours. Overview of the epidemiology of chronic disease in old age. Topics include biology of aging and epidemiology of cardiovascular disease, neoplasms, osteoporosis and fractures, psychosocial factors and health in old age, dementia, functional status and prevention of disease. —W. (W.)

259. Epidemiology of Chronic Diseases and Aging (3)

Lecture/discussion—3 hours. Overview of the epidemiology of chronic disease in old age. Topics include biology of aging and epidemiology of cardiovascular disease, neoplasms, osteoporosis and fractures, psychosocial factors and health in old age, dementia, functional status and prevention of disease. —W. (W.)

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