

UC Davis Continuing Professional Education - Sustainability Related Courses  
(July 2016-June 2019)

Custom Section Number	Code	No. of Offerings	Course Name	Course Description	Program Office
162LUP110	100750	1	Land Use Planning for Non-Planners: An Introduction to Planning in California	<p>Puzzled by planning jargon and regulations that make public meetings and conversations about community development, infrastructure projects, economic development and environmental quality almost incomprehensible?;</p> <p>Drawing on years of experience, instructors cover the intricacies of planning, translate the jargon, and explain how state and local planning practices and policies are developed and how they impact all aspects of our lives. Learn how to more effectively participate in planning processes and how to understand the impacts of the complex legal issues associated with both land use and environmental planning.</p> <p>Designed for those who regularly confront the planning process, this course provides a basic understanding of the procedures for local review of land use and development proposals. Although primarily intended for the non-planner, this course is also useful for those considering a career in planning.</p>	Land Use & Natural Resources
163LUP129	100810	3	Annual Land Use Law Review and Update	<p>Stay up-to-date on recent developments in California law affecting land use, planning and environmental compliance. Experts from the field provide succinct and practical analysis on recent case law and significant legislative and administrative changes that took effect this year.</p> <p>Topics include:</p> <ul style="list-style-type: none"> <li>General Plans, Specific Plans and Zoning</li> <li>The Subdivision Map Act</li> <li>CEQA</li> <li>Affordable Housing</li> <li>Takings, Exactions and Dedications</li> <li>Greenhouse Gas Regulation and Environmental Analysis</li> <li>School Fees</li> <li>Wetlands and Protected Species</li> <li>Land Use Litigation</li> </ul> <p>&amp;;</p> <p>Participate in discussions and get answers to your questions. Take home the most recent edition of California Land Use and Planning Law, co-authored by Cecily Barclay and Matthew Gray, and a legal syllabus of cases discussed and prepared by the law firm of Perkins Coie, LLP</p>	Land Use & Natural Resources
163LUP301	100820	3	CEQA Update, Issues and Trends	<p>Implementation of CEQA continues to be a challenge for professionals due to annual legislative, regulatory and judicial developments. CEQA practice is constantly evolving, raising new issues and revealing new trends. Learn recent developments and emerging trends, and exchange ideas about handling key issues in the environmental review process. Examine recent CEQA legislation, as well as recent and upcoming regulatory changes.</p> <p>Review the latest CEQA court decisions and their practical implications, including:</p> <ul style="list-style-type: none"> <li>Common sense exemption</li> <li>Categorical exemptions and exceptions (including the recent Calif. Supreme Court decision Berkeley Hillside Preservation v. City of Berkeley)</li> <li>Negative declarations and mitigated negative declarations, as well as the fair argument standard and when a record contains substantial evidence</li> <li>Environmental impact reports and the adequacy of impact analysis (including impacts to agricultural resources)</li> <li>Mitigation measures, agency rule-making requirements and agency requirements to mitigate per Legislature's directive (including recent Calif. Supreme Court decision City of San Diego v. Board of Trustees of the California State University)</li> <li>Trigger for supplemental or subsequent CEQA documents (versus addendums)</li> <li>Tiering from functional equivalent documents or General Plan EIR</li> <li>Litigation matters</li> </ul>	Land Use & Natural Resources
172NAT102	101220	3	EIR/EIS Preparation and Review	<p>Many projects are subject to local, state and federal environmental review and noticing requirements. Learn how to increase efficiency and reduce redundancy by addressing the requirements of both CEQA and NEPA with a combined EIR/EIS document. In this hands-on course, you will gain exposure to CEQA and NEPA, as well as methods for meeting the requirements of both with a combined environmental document. Examine the key content requirements and standards for a combined EIR/EIS document. Learn how to ensure the EIR/EIS notice and review process complies with the procedural requirements and how to resolve potential conflicts between the acts. Discover real-world case studies of successful EIR/EIS integration.</p>	Land Use & Natural Resources
163LUP321	101290	2	Endangered Species Regulation and Protection	<p>Review current federal laws, regulations, policies and practices concerning threatened and endangered wildlife and plants. Gain practical advice for resolving endangered species conflicts with proposed projects. Examine key aspects of the federal Endangered Species Act and agency policies and guidelines on:</p> <ul style="list-style-type: none"> <li>Section 4(d) rules</li> <li>Section 7 consultation and biological assessments</li> <li>Section 10(a) incidental take permits</li> <li>Habitat Conservation Plans (HCPs)</li> <li>Safe Harbor policies</li> <li>No Surprise policies</li> </ul> <p>Also examine the most recent case law and policies regarding California's implementation of the Endangered Species Act, including:</p> <ul style="list-style-type: none"> <li>Section 2081 incidental take permits</li> <li>The California Native Plant Protection Act</li> <li>Endangered species provisions of CEQA</li> <li>The Natural Community Conservation Planning Act</li> </ul>	Land Use & Natural Resources
162NAT415	101410	3	GIS for Resource Managers and Professionals	<p>Geographic Information Systems (GIS) allow you to analyze and manage spatial data in all forms and at multiple scales, providing important context and analysis for projects of all types. Gain an overview and working knowledge of GIS in this hands-on workshop. Learn about terms and concepts, available systems, data sources, and design and policy decisions that must be addressed prior to implementation. Practice basic analysis workflows and data management in common GIS software, including ArcGIS. Gain practical knowledge to incorporate field data, summarize both vector and raster overlays, and make informative maps that can be used in resource decision-making settings. This course is recommended for students who have limited or no GIS experience and those who intend to take GIS for Watershed Analysis: Intermediate.</p>	Land Use & Natural Resources
162NAT286	101660	1	Mitigation Measure Development and Monitoring	<p>Learn how to develop and monitor enforceable mitigation measures for different types of projects in California. Focus on the legal basics and latest court cases on mitigation measures. Receive practical advice, examples and checklists for developing and monitoring mitigation measures. Topics include:</p> <ul style="list-style-type: none"> <li>Legal requirements for mitigation measures under CEQA, NEPA and other major environmental laws</li> <li>Recent case law interpretations for mitigation measures</li> <li>Mitigation approaches to difficult subject areas (e.g., transportation, growth-inducement, air quality, wetlands and biological resources)</li> <li>Trends in local government implementation of CEQA's mitigation monitoring requirements</li> <li>Practical advice on how to prepare project-specific mitigation monitoring programs</li> <li>Pros and cons of different enforcement techniques</li> </ul>	Land Use & Natural Resources
161LUP154	101670	3	Vested Rights, Vesting Maps and Development Agreements	<p>Development agreements are an effective avenue for a community and developer to come together and process a project. Both sides of the table need to carefully consider the terms of these contracts and explore questions of content and performance before completing such an agreement. Learn the legislative and judicial aspects of development agreements.</p> <p>Examine the legal basis for development agreements and the overlap between agreements and vesting subdivision maps. Participants will learn the negotiation process, identify and discuss the range of options available when negotiating a development agreement, and review the theoretically possible agreement. Consider the key points of an agreement, ways to assist in understanding the needs of the other side, and select the players to conduct the negotiation.</p> <p>Topics include:</p> <ul style="list-style-type: none"> <li>Common law vested rights</li> <li>Legal review</li> <li>Development agreements vs. vested maps</li> <li>The Development Agreement Statute</li> <li>Key terms and alternative approaches</li> <li>Considerations in negotiating the agreement</li> <li>Contents of an agreement</li> <li>Testing the waters</li> <li>Paper control: who drafts the document</li> <li>Enforceability</li> <li>How to implement agreements</li> <li>What happens after the life of an agreement</li> </ul>	Land Use & Natural Resources

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164LUP126	101770	3	Redesigning the Zoning Ordinance	<p>Zoning ordinances shape the appearance and function of all land uses in a community. The practice of how communities use zoning regulations to achieve development goals continues to evolve, and many cities and counties look to ordinance updates to achieve their development objectives. Discover how to transform your zoning ordinance into a more understandable, streamlined, defensible and effective planning implementation tool. Leading California zoning experts will provide effective principles for revising and updating city and county zoning ordinances and discuss solutions to specific ordinance concerns raised by attendees.</p> <p>Topics include:</p> <ul style="list-style-type: none"> <li>Correlating zoning ordinance provisions with general plan policies and standards</li> <li>State-of-the-art zoning ordinance structure, format/style and graphic design for creating easy-to-use documents</li> <li>Zoning districts: how many, what types, when to use overlays and combining designations</li> <li>Development standards: type, specification, performance approaches, graphic support and representation</li> <li>Form-based codes, hybrid codes, design guidelines and sustainable development practices</li> <li>Content-neutral sign regulations, nonconforming uses and other controversial regulatory issues</li> <li>Steps to faster, effective and thorough development permit review procedures</li> <li>Computerizing the zoning ordinance</li> </ul>	Land Use & Natural Resources
163LUP302	101930	2	Successful CEQA Compliance: An Intensive Two-Day Seminar	<p>CEQA is the state's most comprehensive environmental law. Its requirements influence virtually all prospective land use and public agency projects.</p> <p>Learn how to clearly understand and comply with CEQA guidelines in this interactive seminar, designed to assist public agency staff, consultants, attorneys, developers, members of environmental organizations and others.;</p> <p>The first day focuses on:</p> <ul style="list-style-type: none"> <li>The background and implementation of CEQA</li> <li>The preliminary review process</li> <li>Determination of an environmental document</li> <li>The negative declaration process and document content</li> <li>The Environmental Impact Report (EIR) process</li> </ul> <p>The second day focuses on development of exceptional impact analysis and mitigation measures and the integration of other environmental programs. Specific topics include:</p> <ul style="list-style-type: none"> <li>Impacts and mitigation</li> <li>Integration with NEPA, water quality, wetlands and endangered species regulations, and historic preservation programs</li> <li>Judicial review</li> <li>EIR management issues</li> </ul>	Land Use & Natural Resources
174NAT110	101990	4	Thresholds of Significance in Environmental Planning	<p>Determining the significance of environmental impacts under CEQA is one of the most difficult and important decisions agencies must make, yet many agencies have not developed a consistent approach to judging significance and agonize over this issue on a project-by-project basis. Thresholds of significance are a proven method of streamlining the CEQA process. Learn about significance thresholds, the process for developing them and success stories.</p> <p>Topics include:</p> <ul style="list-style-type: none"> <li>The concept of "significance" under CEQA</li> <li>The definition of environmental thresholds</li> <li>Advantages and disadvantages of developing thresholds</li> <li>Criteria for determining significance</li> <li>Reliance on other agencies; regulatory standards</li> <li>Adopted thresholds</li> <li>Legal problems</li> <li>Discussing thresholds for greenhouse gases</li> <li>Developing thresholds for any impact discipline</li> <li>The relationship between thresholds, planning policies and standards</li> </ul>	Land Use & Natural Resources
161NAT220	102180	2	Wetlands Regulation and Mitigation	<p>Learn about the regulation of activities affecting wetlands, permitting for activities in wetlands and wetlands mitigation planning. Gain an overview of federal and state laws and regulations protecting wetlands and other bodies of water, with a special emphasis on Section 404 of the Clean Water Act. Topics include:</p> <ul style="list-style-type: none"> <li>Biological and legal definitions of wetlands</li> <li>Consistencies and differences among various federal and state agencies</li> <li>Section 10 of the Rivers and Harbors Act</li> <li>Section 404 of the Clean Water Act and recent legal interpretations</li> <li>Section 1600 of the California Fish and Game Code</li> <li>Wetlands under the California Environmental Quality Act and the National Environmental Policy Act</li> <li>EPA and USACE Mitigation Rule</li> </ul>	Land Use & Natural Resources
162LUP131	102240	3	Subdivision Map Act: An Advanced Seminar	<p>&gt;The inherent inconsistencies and discrepancies of the Subdivision Map Act can cause frequent problems in administration and interpretation. This program looks to legal interpretation and practical experience in providing guidelines for effective practice. Examine some of the more troublesome provisions and "advanced" aspects of the Subdivision Map Act, and receive an update on recent legislation and court decisions affecting the Act. Topics include:</p> <ul style="list-style-type: none"> <li>How to deal with antiquated subdivision (old maps)</li> <li>Processing lot line adjustments</li> <li>The responsibilities and powers of local agencies regarding certificates of compliance</li> <li>How vested rights affect the subdivision process</li> <li>Conditions that can/cannot be legally attached to maps</li> <li>The interplay of the Map Act with the general plan, zoning and CEQA</li> <li>New laws addressing "environmental" subdivisions</li> <li>Mergers, alternatives and other related issues</li> </ul> <p>&gt;Enrollment is strictly limited to 35. Participants are encouraged to submit specific questions in advance and bring maps of current projects for class discussion.</p>	Land Use & Natural Resources
182PRC143	102320	1	Project Planning for Permit Integration	<p>Learn how to integrate environmental permitting and consultation requirements for projects subject to CEQA and NEPA. These acts affect natural or cultural resources, therefore many projects that are subject to CEQA and NEPA also require compliance with other major state and federal environmental laws. To obtain timely and cost-effective project approvals, CEQA/NEPA lead agencies and project applicants must navigate a complex permitting and consultation maze, including regulation of wetlands, endangered species and historic resources.</p> <p>Receive an organized and proven 10-step strategy to:</p> <ul style="list-style-type: none"> <li>Understand procedural and substantive requirements of major permitting and consultation programs</li> <li>Determine which agencies must be consulted for review and permits</li> <li>Integrate various environmental compliance requirements into the environmental process in order to improve the permitting processes</li> <li>Reduce the time and cost of preparing environmental documents and implementing projects</li> </ul>	Land Use & Natural Resources

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163LUP312	102350	1	Clean Water Act Section 404: Nationwide and Other Specialized Permits	<p>Understand and comply with requirements of the most widely used set of permits for projects in wetlands and other waters of the U.S. under Section 404 of the Clean Water Act, which requires projects to first obtain a permit from the U.S. Army Corps of Engineers for the placement of dredged or fill materials in U.S. waters. Through the Corps' Nationwide Permit Program (NWP), general permits may be issued on a nationwide basis for activities that have minimal effects on the aquatic environment.</p> <p>Study the current Nationwide Permits, including general and specific regional conditions. Gain a thorough understanding of the NWP program and the latest information from the Corps as well as other state and federal agencies. Review verification and pre- and post-construction notification processes and discuss requirements for notification contents. Further your understanding of:</p> <ul style="list-style-type: none"> <li>Activities covered by NWPs</li> <li>Region-specific conditions</li> <li>Use of multiple NWPs</li> <li>Special aquatic sites</li> <li>Mitigation requirements</li> <li>NOI certification</li> <li>ESA/EFH compliance</li> <li>NHPA Section 106 compliance</li> <li>Local Corps district policies</li> </ul>	Land Use & Natural Resources
163LUP500	154290	2	Planning in California: An Overview	<p>Learn the concepts, structures and processes of land use planning and development decisions. This four-day course delivers an overview of general plans, zoning ordinances, subdivision regulation, permit processes, property rights, environmental review, public finance, natural resources and urban design. The instructor and guest presenters place these topics in wider contexts, valuable for both experienced planners who need a review and others who want solid introductions.</p> <p>By the end of the course, the participants will:</p> <ul style="list-style-type: none"> <li>Understand the basic legal tools of land use planning and decision making</li> <li>Be able to apply those tools to specific problems facing California communities</li> <li>Understand the connections among land use, public finance and governance</li> <li>Demonstrate insight into how public policies affect land uses</li> </ul>	Land Use & Natural Resources
163LUP501	154360	3	Environmental Planning and Site Analysis	<p>Examine the major components of physical planning and site design as they relate to achieving planning objectives. Review regional landscape analysis, physical and man-made factor analysis, and watershed and program analysis. Special focus is given to analyzing site suitability and sensitivity for development, site selection and feasibility studies and conceptual design that responds to site conditions.</p> <p>In this course, you will:</p> <ul style="list-style-type: none"> <li>Develop an understanding of how to conduct site opportunity and constraint analysis that contribute to good land use decisions.</li> <li>Understand the basic natural and cultural components of a site and region and how these components are interrelated.</li> <li>Achieve basic skills necessary to evaluate and compare the value of mapped data.</li> <li>Acquire critical thinking skills to be able to use complex data, synthesize information and select that which is most significant for decision making.</li> <li>Learn graphic methods of compiling, recording and displaying information on environmental, cultural and economic factors.</li> <li>Understand the value and importance that analysis of the natural and the manmade environment have in planning, design and environmental decision-making.</li> </ul> <p>As a part of this course, students will be required to participate in one out-of-classroom site visit, where they will annotate maps in the field.</p>	Land Use & Natural Resources
162LUP510	154370	3	Financial Aspects of Planning	<p>Gain an understanding of how planning decisions impact the economic feasibility of a proposed project for the public agency and developer. Learn how money flows into a governmental agency, what they can or cannot do to increase that flow, and how debt fits into the whole equation.</p> <p>Topics in this course include:</p> <ul style="list-style-type: none"> <li>Fiscal impact analysis and its importance</li> <li>Local government revenues</li> <li>Public debt and its alternatives</li> <li>Fiscal and financial analysis and how they fit into the planning process</li> <li>A developer's perspective of how planning decisions affect the bottom line;</li> <li>The balance between the goals and objectives of public and private-sector participants</li> </ul> <p>Approximately 20 hours of study and full attendance to all course meetings are required. A course assignment will be mailed four weeks before the course begins, which you are required to complete before the first day of class.</p>	Land Use & Natural Resources
173WAT205	204830	3	Groundwater Law and Hydrology	<p>This course is essential for professionals working in water resources in California. Effective groundwater management requires a combined understanding of the legal principles and physical characteristics of the resource. Acquire a working knowledge of groundwater law and hydrology, and discover new developments in case law, legislation and practice.</p> <p>Receive thorough instruction on the physical characteristics of groundwater and the fundamental tenets of California groundwater law, including distinctions between percolating groundwater and surface water, the definition of basin boundaries, interrelated concepts of safe yield and overdraft, and different categories of groundwater rights. Examine alternative problem-solving approaches to address specific groundwater allocation and quality problems, such as management plans, physical solutions and court adjudication. You will also review case studies from groundwater disputes throughout California. Participants are encouraged to relate their own case studies and specific problems during the course.</p>	Land Use & Natural Resources
162NAT201	205450	2	Habitat Conservation Planning	<p>Under the Endangered Species Act, Habitat Conservation Plans (HCPs) are becoming increasingly common regulatory necessities and planning tools for many, including joint-powers agencies, cities and counties, local districts and state agencies, energy companies and private developers in California. Recent listings of threatened and endangered species have resulted in conflicts with existing and planned land use and water projects.</p> <p>Gain an overview of state and federal endangered species laws and recommendations for best approaches to conservation planning. Explore case studies of simple single species and complex multispecies HCPs. Topics include:</p> <ul style="list-style-type: none"> <li>Endangered Species Act Section 10 requirements for HCPs and conservation planning guidelines</li> <li>California Natural Community Conservation Planning Act process guidelines</li> <li>Regional conservation plans and low effect HCPs</li> <li>Integrated compliance with Section 404 of the Clean Water Act wetlands and stream regulations</li> <li>No surprises, safe harbors and candidate conservation agreements</li> </ul>	Land Use & Natural Resources
164LUP127	239350	3	Public Real Estate Transactions	<p>Hone your understanding of the public real estate transaction process with essential knowledge for anyone in the public or nonprofit sectors involved in the acquisition, resale, appraisal or management of public property. Learn the fundamental processes that must be followed, whether for road right-of-ways, public works projects, parks, open space, agricultural or habitat easements, utilities or other purposes. Through detailed case studies, you will learn:</p> <ul style="list-style-type: none"> <li>Due diligence procedures for appraisals</li> <li>Hazardous materials assessments</li> <li>Insurance, title searches, liens and loans, as well as negotiation strategies with multiple agencies and parties</li> </ul>	Land Use & Natural Resources
162NAT240	276000	2	Water Quality Regulation and Permitting	<p>Review California water quality regulations, relevant provisions of California state law and regulations, and the federal Clean Water Act. During this interactive workshop, instructors will provide case studies, strategies and recommendations for effectively meeting agency requirements. Topics include:</p> <ul style="list-style-type: none"> <li>A regulatory overview of the federal Clean Water Act</li> <li>The California Porter-Cologne Water Quality Act</li> <li>Basin planning and waste discharge requirements</li> <li>National Pollutant Discharge Elimination System permits</li> <li>The jurisdictions of key agencies such as the California Environmental Protection Agency and state and regional water boards</li> </ul> <p>This course will also cover recent updates and changes in California water quality regulations.</p>	Land Use & Natural Resources
174PRC105	276020	3	Cultural Resource Management: CEQA, NEPA and Section 106	<p>Learn how cultural resource concerns can help or hinder your community or development projects and how these concerns can derail environmental review or become part of a community's sustainable design strategy. Gain an understanding of key historic preservation laws and how historic preservation can be an asset for community revitalization as well as for successful commercial and residential projects. Explore practical issues involved with implementation and avoid unnecessary delays in environmental reviews by learning how to comply with historic preservation requirements under CEQA and NEPA, as well as Section 106 of the National Historic Preservation Act.</p>	Land Use & Natural Resources

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163LUP130	283030	2	Subdivision Map Act: Part I	<p>&lt;div class="Section1"&gt;</p> <p>Learn key provisions of the Map Act, how it is applied in planning and development processes, recent legislative changes and new legal interpretations from court decisions and attorney general opinions. Explore both local agency and subdivider viewpoints and discuss legal and practical solutions.</p> <p>Topics include:</p> <ul style="list-style-type: none"> <li>Map Act scope, purpose and history</li> <li>Relationship of the Map Act to planning, zoning and development laws, including CEQA</li> <li>When the Map Act does and does not apply</li> <li>Certificates of compliance and lot line adjustments</li> <li>Map Act exemptions and exceptions</li> <li>What type of map is required</li> <li>Procedures and actions applicable to maps</li> <li>The role of vested rights, including vesting maps, development agreements and common law vesting</li> <li>Constitutional and statutory limitations on conditions of approval (exactions/dedications/fees)</li> <li>Grounds for approval and denial of maps</li> <li>Rules and procedures regarding final maps</li> <li>Corrections and amendments to maps</li> <li>Exclusions and reversions</li> <li>Mergers and alternatives to mergers</li> <li>Antiquated subdivisions (old maps) and troubled conveyances</li> <li>Enforcement, local appeals and judicial review</li> <li>Best practices for the private sector</li> </ul>	Land Use & Natural Resources
163LUP131	283060	3	Subdivision Map Act: Part II	<p>This is the second part of an intensive, two-part course on the California Subdivision Map Act, the law that governs the dividing of land into smaller ownership units in California. Gain an in-depth understanding of key provisions of the Map Act, including recent legislative changes and new legal interpretations from court decisions and attorney general opinions. Explore both local agency and subdivider viewpoints and discuss legal and practical solutions to the Map Act's most difficult problems. Topics include:</p> <ul style="list-style-type: none"> <li>Constitutional and statutory limitations on Conditions of Approval (exactions/dedications/fees)</li> <li>Grounds for approval and denial of maps</li> <li>Rules and procedures regarding final maps</li> <li>Mergers and alternatives to mergers</li> <li>Antiquated subdivisions (old maps) and troubled conveyances</li> <li>Enforcement, local appeals and judicial review</li> </ul>	Land Use & Natural Resources
183WAT211	286700	1	Overview of Fluvial Geomorphology	<p>Rivers shape the landscape, sustain ecosystems, and link the headwaters of watersheds to downstream wetlands. This course provides an overview of fluvial geomorphology, using a holistic watershed approach that highlights the important connections between hillslopes, river channels, floodplains and estuaries. Participants will learn how fluvial processes, water and sediment interact to shape diverse river systems. Topics include:</p> <ul style="list-style-type: none"> <li>Watershed systems</li> <li>Fluvial processes and morphology</li> <li>Ecological interactions</li> <li>Effects of land uses</li> <li>Restoration of fluvial processes</li> </ul> <p>The focus of this course is designed to expand your knowledge of factors that affect flooding, sediment erosion, transport and deposition. You will gain an understanding of fluvial system responses to various land use disturbances, and, thereby, develop insights that provide a foundation for the best watershed management decisions and restoration efforts.</p>	Land Use & Natural Resources
173GIS107	289170	1	GIS for Watershed Analysis: Intermediate	<p>In this intermediate-level class, learn the theoretical background of watershed analysis within a Geographic Information System to develop a familiarity with common methods, tools and frameworks for investigation. Through extensive hands-on training, gain practice with diverse components of ArcGIS 10 series software and related tools. Exercises explore basic skills for working with watersheds and raster data types using tools such as Spatial Analyst, ArcToolbox and Model Builder.</p> <p>Students will gain experience with fundamentals related to performing raster queries and calculations and discover how to use Digital Elevation Models to derive slope and drainage area parameters for watersheds, and create vector hydrography. The course covers basic automation using modelbuilder and also guides students in developing their own algorithms and where to look for future learning.</p> <p>It is strongly recommended that students have prior training in ESRI (ArcGIS) or similar software. Completion of GIS for Resource Managers and Professionals, or Introduction to Geographic Information Systems, is sufficient for success in this course. Advanced students may skip directly to GIS for Watershed Analysis: Advanced, but the courses are complementary and together provide a strong foundation for GIS-based watershed analyses.</p>	Land Use & Natural Resources
162NAT202	292420	1	Streambank Assessment and Restoration	<p>Learn the concepts of natural channel form and function in streambanks, and how to determine which restoration methods are most suitable for different types of sites. Case studies and discussions will emphasize the importance of channel cross-section and landform geometry as they influence a stream's connectivity with its floodplain. Students will learn how to evaluate channel conditions and assess restoration potential. Techniques for bank stabilization using natural materials and native vegetation will be discussed, including the use of various types of low rock and log toe structures, redirective techniques (vanes and weirs) versus resistive techniques (riprap and gabions), and biotechnical/bioengineering methods.</p>	Land Use & Natural Resources
163LUP310	296390	2	Overview of California Water Law and Policy	<p>Understand the complex and contentious process of allocating California's water resources. Gain a comprehensive overview of the legal and regulatory framework for surface water and groundwater rights, as well as the environmental laws that regulate water use. Topics include:</p> <ul style="list-style-type: none"> <li>Allocation of surface water through appropriative and riparian rights</li> <li>California's system of groundwater rights</li> <li>Authority of the State Water Resources Control Board</li> <li>Protecting Northern California's area of origin laws</li> <li>Environmental protections under the public trust doctrine, the Endangered Species Act, CEQA, Section 404 of the Clean Water Act and Fish and Game Code</li> <li>California water institutions: the Bureau of Reclamation, Department of Water Resources and local water agencies</li> <li>Federal Reclamation Law and the Central Valley Project Improvement Act</li> <li>Legal constraints on water transfers</li> <li>Allocating interstate rivers: Colorado River Basin and Klamath River Basin</li> <li>California's water hub: understanding the Sacramento-San Joaquin Bay-Delta and its regulatory and planning context</li> </ul>	Land Use & Natural Resources
1615WR630	303490	3	Water Quality Goals	<p>This class provides basic and essential training for both new and long-term staff on the topic of water quality standards - beneficial uses, water quality objectives, promulgated water quality criteria, water quality control plans and policies that affect allowable concentrations in water.</p> <p>It also familiarizes staff with the Water Quality Goals Report, intranet-based database and limit-selection algorithms, and how these tools may be used to interpret narrative water quality standards as part of our day-to-day water quality assessment and regulatory functions.</p> <p>The Water Quality Goals Report and related materials are available to course attendees and the public on the Internet at <a href="http://www.swrcb.ca.gov/rwqcb5/available_documents/">http://www.swrcb.ca.gov/rwqcb5/available_documents/</a> under the heading "Water Quality Goals."</p> <p>Staff of the State and Regional Water Boards also have access to the searchable Water Quality Goals database and additional supportive materials via the Central Valley Region's intranet Web site at <a href="http://r5web.swrcb.ca.gov/">http://r5web.swrcb.ca.gov/</a>. Click on the "Water Quality Goals" link on the left.</p> <p>Course attendees are encouraged to review these materials in advance of the scheduled class time and to bring an example of a water quality limit selection problem from their water quality assessment or regulatory work.</p>	Land Use & Natural Resources
1625WR306	305080	2	California Aquatic Bioassessment Workgroup	<p>These workshop sessions will be held as part of the California Aquatic Bioassessment Workgroup (CABW) meeting, held on December 2-4 at the Central Valley Auditorium of the CalEPA Building in Sacramento. The sessions include discussions on:</p> <ul style="list-style-type: none"> <li>the collection and use of fish data in bioassessment programs</li> <li>the role of biological assessment on the FERC re-licensing process and in assessing the effects of hydroelectric projects on the health of streams and rivers</li> <li>complementary methods of determining the biotic health of streams and rivers in California</li> <li>transitioning from coastal to inland EMAP and developing rapid protocols for assessing the condition of California wetlands</li> <li>the Western Pilot Environmental Monitoring and Assessment Program and an introduction to the California Monitoring and Assessment Program concepts behind tiered aquatic life uses and use attainability analysis</li> </ul>	Land Use & Natural Resources

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162NAT213	313790	2	CEQA: A Step-by-Step Approach	<p>Clarify and deepen your understanding of CEQA and the implications it has for your organization, plan or project. Discuss the latest changes to the state CEQA guidelines, new case law and legislation.</p> <p>Topics include:</p> <ul style="list-style-type: none"> <li>CEQA's legislative history</li> <li>An overview of CEQA requirements</li> <li>Steps in the CEQA process and when projects are exempt</li> <li>The threshold decision: Is an EIR required?</li> <li>Negative declarations and mitigated ND's</li> <li>How to determine the scope and content of an EIR</li> <li>Public notice and review requirements</li> <li>Agency decision-making under CEQA</li> <li>Mitigation monitoring and reporting</li> <li>When to prepare supplemental EIRs</li> <li>Judicial review of CEQA decisions</li> </ul>	Land Use & Natural Resources
1745EG102	330360	10	Sustainable Planning Environmental Site Design and Development	<p>Learn about fundamental planning issues and sustainability processes as they apply to community planning and design situations. Identify key challenges in incorporating sustainability into planning strategies, policies and site design. Examine technical and environmental factors including different planning models in policy, planning and design. Acquire techniques for site assessment to better plan for and incorporate sustainable practices into policy and design. Explore ways that policies, codes and standards can be modified to encourage sustainable planning and design practices.</p> <p>Topics include:</p> <ul style="list-style-type: none"> <li>Land use planning</li> <li>Smart growth and urban design</li> <li>Transportation policy and design</li> <li>Environmental site design</li> <li>Site assessment and selection</li> <li>Brownfield redevelopment strategies</li> <li>Infill development</li> </ul> <p>Each topic will be taught with an eye toward integrating sustainable practices into planning and site scale.</p>	Land Use & Natural Resources
1635EG101	330370	1	Sustainable Water Management and Landscape Design	<p>Learn about the fundamentals of water resources management from a sustainable perspective and how to incorporate a sustainable water resources approach into various types of urban development and infrastructure at the policy, planning, and design levels.</p> <p>Topics include:</p> <ul style="list-style-type: none"> <li>Methods for assessing long term water use and demand - Water conservation practices</li> <li>Sustainable landscape design</li> <li>Basics of water quality and waste water treatment in urban areas</li> <li>Use of recycled and grey water</li> <li>Rain water harvest and innovative approaches to LID-style storm water management</li> </ul> <p>Apply sustainability principles to natural or impacted urban stream and wetland sites, and gain a fundamental understanding of how to implement sustainable water resource practices in varied community design situations.</p> <p>The average American house is 2,400 square-feet and uses more than 13,000 board-feet of lumber, 6,000 square-feet of sheathing and 2,000 square-feet of flooring and putting a strain on our natural resources. Rising energy costs, a shortage of building materials, growing consumer demand and environmental awareness are forcing architects, designers and building professionals to seek better and more efficient ways to design our buildings.</p> <p>This course explores the issues, challenges and opportunities associated with green building and sustainable design. Examine innovative residential, commercial, industrial, mixed-use, and low- and high-density specialty buildings. Evaluate the micro- and macro-economic issues associated with green buildings.</p> <p>Focus on the holistic and geometric aspects of green design, and discuss how comprehensive building design can respond to the needs of occupants and environmental circumstances. The course will also examine specific building technologies, such as thermal, water and lighting control systems, and how to use them.</p>	Land Use & Natural Resources
1645EG104	330380	1	Green Architecture	<p>The average American house is 2,400 square-feet and uses more than 13,000 board-feet of lumber, 6,000 square-feet of sheathing and 2,000 square-feet of flooring and putting a strain on our natural resources. Rising energy costs, a shortage of building materials, growing consumer demand and environmental awareness are forcing architects, designers and building professionals to seek better and more efficient ways to design our buildings.</p> <p>This course explores the issues, challenges and opportunities associated with green building and sustainable design. Examine innovative residential, commercial, industrial, mixed-use, and low- and high-density specialty buildings. Evaluate the micro- and macro-economic issues associated with green buildings.</p> <p>Focus on the holistic and geometric aspects of green design, and discuss how comprehensive building design can respond to the needs of occupants and environmental circumstances. The course will also examine specific building technologies, such as thermal, water and lighting control systems, and how to use them.</p>	Land Use & Natural Resources
1615DD104	330390	2	Green Building Materials and Construction Methods	<p>Learn to implement green building practices into homes, apartments, business complexes and office buildings. Utilize materials and techniques that promote healthy, durable and environmentally-responsible construction. Increase your understanding of helpful tools and resources, including green building rating systems. Discover the latest and best green construction methods changing the landscape of the building industry. Explore life-cycle assessment methods of materials and be a better-informed designer or builder when selecting materials. Examine sustainable construction methods used in today's green commercial and residential buildings in relation to their energy and environmental impacts and benefits. Hands-on exercises provide innovative solutions you can put to use immediately.</p> <p>Topics include:</p> <ul style="list-style-type: none"> <li>Desirable characteristics of sustainable materials and how to assess and quantify them</li> <li>Concept of "cradle-to-cradle"; product analysis and its application to building materials</li> <li>Sustainable site design materials and landscaping systems</li> <li>Alternative structural systems (including adobe, strawbale and rammed earth)</li> <li>Salvaged materials and material reduction</li> <li>Building commissioning and modular systems and design</li> <li>Construction and demolition waste diversion</li> </ul>	Land Use & Natural Resources
173LAN145	333900	2	Using Master Plans, Specific Plans and Community Plans to Create Great Places	<p>Local governments can use specific plans as tools to plan for needed revitalization and change in existing neighborhoods and in new development areas. Specific plans can help create great communities by providing detailed planning and design guidance, and by focusing attention on specific development areas. They can jumpstart new development in depressed areas and ensure the public gets the quality it desires in any new development.</p> <p>Receive an overview of specific plan preparation, with an emphasis on balancing planning, design and financial considerations. Course instructors include a planner/urban designer and a real estate economist, who will give you an understanding of how land use, design and market issues interact in specific plan development.</p> <p>Topics include:</p> <ul style="list-style-type: none"> <li>Legal requirements for specific plans</li> <li>Land use planning</li> <li>Urban design concepts</li> <li>Market studies to determine appropriate uses</li> <li>Design guidelines</li> <li>Community involvement</li> <li>CEQA review</li> <li>Fiscal impact analysis</li> <li>Plan implementation</li> <li>Financing techniques</li> </ul> <p>You will also learn how to scope and budget a project, hire consulting assistance if necessary, and finish the project on schedule and on budget.</p>	Land Use & Natural Resources

Custom Section Number	Code	No. of Offerings	Course Name	Course Description	Program Office
162LUP121	340670	1	Airports and Land Use Compatibility Planning	<p>For many years metropolitan-area airports were located miles from urban centers and rarely were affected by local development. Increasing growth pressures, urban sprawl and ongoing growth in the aviation industry have led to increased conflicts between airports and nearby development.</p> <p>Gain an understanding of airport land use compatibility and how it affects planning practices in California. Learn about the issues associated with airport land use compatibility, such as noise, flight patterns, population densities, and how these and other issues can affect proposed development in the airport vicinity. This course will introduce you to topics such as:</p> <ul style="list-style-type: none"> <li>An overview of federal and state aviation planning regulations</li> <li>Airport and land use commissions and compatible land use plans</li> <li>Aircraft noise contours, flight tracks and how they are used in planning</li> <li>Airport safety and planning issues</li> <li>Strategies for evaluating compatible land use during project planning</li> </ul> <p>Learn how to address airport compatibility issues when preparing environmental documentation pursuant to CEQA and what to address when projects are located near an airport or within an airport influence or referral area. In-class exercises will include the use of the California Airport Land Use Planning Handbook, FAA guidance, examples of recent compatible land use plans and review criteria prepared for projects in California.</p>	Land Use & Natural Resources
172PRC103	340690	2	Air Quality Analysis	<p>Learn how to address the significant air quality challenges posed by increasing urbanization and development. Designed for planning and environmental protection professionals who manage, review, and prepare air quality and greenhouse gas (GHG) emissions analyses, this course presents the principles of air quality and GHG assessment and regulation for land use and transportation projects. Through lectures and case studies, build your knowledge of air quality basics including a summary of criteria air pollutants, toxic air contaminants, and GHGs; their sources; and related health effects.</p> <p>Additional topics include:</p> <ul style="list-style-type: none"> <li>Brief history of air quality regulation</li> <li>Federal, state, and regional regulatory framework</li> <li>Construction and operational emission source categories and a brief guide to data collection</li> <li>Current emission inventory modeling tools, including a real-time run-through of the California Emissions Estimator Model (CalEEMod)</li> <li>Overview of health risk assessments and dispersion modeling, including an introduction to AERMOD and HARP 2</li> <li>Components of air quality and GHG/climate change assessments under the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA), including a discussion of thresholds</li> <li>Recommendations for post-2020 GHG emissions analyses and other challenges associated with relevant case-law</li> </ul>	Land Use & Natural Resources
171SEG108	342930	2	LEED Building Certification	<p>Gain an in-depth understanding of the LEED Building, Design and Construction (BD&amp;C) rating systems for new construction projects, schools, and core and shell projects as well as the process to document and obtain certification. Learn how to register, document and certify LEED BD&amp;C projects. Review case studies, local project examples and take an optional tour of a LEED-certified building. This course will help prepare you to take LEED accreditation exams and better understand how to achieve LEED certification for buildings.</p>	Land Use & Natural Resources
164LUP335	342960	1	Developing and Writing Effective CEQA Documents	<p>Learn a step-by-step approach to preparing and writing CEQA documents. Project managers will learn how to set up their projects to improve author efficiency, effectiveness and client satisfaction. CEQA authors will gain skills for writing clear, concise CEQA sections that address client needs. Editors will receive a complete overview of the document preparation process and their role in that process. In this activities-based workshop, you will discuss outlining, write sections, develop techniques for tracking references and critique project start-up packets and other materials.</p>	Land Use & Natural Resources
161LUP226	345330	3	Land Use and Environmental Planning in the Era of Climate Change	<p>The implications of global warming and climate change on land use planning and compliance with CEQA are evolving and becoming more important each year in California.</p> <p>From controlling greenhouse gases and reducing carbon footprint to coastal erosion and pressures on the state's levee system, global warming can substantially influence the development of a community's general plan and the preparation of MNDs and EIRs for CEQA compliance. Invariably, some of the approaches to address the climate change concerns raised in CEQA documents are linked to a community's long-term plans and ways to implement those plans.</p> <p>There are still uncertainties about what the future holds. What does this mean for land use planning and CEQA review in California? How do you make the best planning decisions in light of the predictions and uncertainties of a changing climate? How are cities and counties responding in their general plans and planning implementation programs? What is truly required under CEQA? What guidance is coming from the courts? How does CEQA play into environmental decision-making about climate change issues?</p> <p>Discuss the implications of our evolving understanding of climate change and its practical effects on land use planning and CEQA compliance in California. Topics include:</p> <ul style="list-style-type: none"> <li>Current understanding about climate change predictions and uncertainties in California</li> <li>How city and county general plans and other long-term plans address climate change's potential influences on water supply, sea level rise, flooding, and ecological conditions that could affect growth and development</li> <li>Planning implementation approaches to reduce carbon and other greenhouse gas emissions as they respond to the effects of climate change</li> <li>Current state of CEQA approaches for addressing global warming and climate change impacts and significance determinations</li> <li>Status of CEQA compliance guidance from the state and courts</li> <li>Role of CEQA in advancing the dialogue about potential responses</li> </ul>	Land Use & Natural Resources
164LUP104	346540	1	Urban Planning and Design Studio	<p>Receive hands-on practice in professional urban planning and design skills in a studio/lecture format. Immerse yourself in planning and design principles, examples and case studies for today's communities. Critique land use plans and site designs, create and prepare site plans, and analyze and develop planning staff reports. Emphasis is placed on urban infill and sustainable community design, and the challenges and complexities of planning and urban design in growing communities. In-class studio work and critique, as well as guest lectures, a hands-on downtown design modeling charrette and field visits are also included. There will be a minimum of 24 hours of planning and design work conducted outside of class.</p>	Land Use & Natural Resources
164LUP105	350040	2	Community Involvement and Communication in Planning	<p>Learn the theoretical background and the hands-on practice of involving stakeholders in urban planning and design decisions and natural resources policies. Practice selected communication and facilitation techniques that create mutually beneficial solutions. Examine how to assess a case situation and determine what type of public process is right for each situation. Discuss the strengths and weaknesses of techniques used in public involvement. Explore different approaches to communicating complex and technical planning information to community groups. Using several simulated negotiations, engage as stakeholders or facilitators to resolve complex public policy problems in urban planning. Examine case studies and analyze what went well, what went wrong and why.</p>	Land Use & Natural Resources
163LUP102	350050	3	Planning and Environmental Law	<p>Gain a comprehensive understanding of planning and environmental law, policy and institutions at the federal, state and local levels. Learn to read and understand a judicial opinion, work with lawyers and develop an integrated land use/environmental permitting strategy.</p> <p>Students will receive both the knowledge and practical skills to successfully navigate the legal framework in their chosen planning and environmental careers. The course first reviews the various sources of planning and environmental law, including common law, statutes and regulations, the public trust doctrine and judicial case law. It then provides students with a working understanding of:</p> <ul style="list-style-type: none"> <li>Land use law requirements, including statutory and case law requirements for the General Plan, zoning and subdivisions</li> <li>Constraints on land use regulation, including vested rights, takings and other constitutional constraints</li> <li>The California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA)</li> <li>Requirements of selected environmental/natural resource programs, including water quality, wetlands regulation, air quality, and fish and wildlife regulation</li> <li>The latest developments in climate change law and policy and how they affect planning</li> <li>Effective land use and environmental permitting</li> </ul> <p>Approximately 20 hours of project work and regular attendance are required.</p>	Land Use & Natural Resources
171LUP337	353120	3	Special Status Amphibians and Reptiles of Northern California	<p>This two-day course covers the identification, distribution, natural history, ecology, conservation history, and conservation status of all the Northern and Southern California amphibian and reptile species and subspecies that are listed as threatened or endangered by the California Department of Fish and Wildlife (CDFW) or the U.S. Fish and Wildlife Service. This course also covers all Northern California and selected Southern California species included in the current (2016) edition of the UC Press/CDFW publication "California Amphibian and Reptile Species of Special Concern," such as the western pond turtle and the coast horned lizard. Also included is introductory material on survey techniques. The course is designed for agency biologists, consultants, planners, public utilities staff, and others who are interested in the natural history and conservation biology of Northern California amphibians and reptiles.</p>	Land Use & Natural Resources

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181PRC128	357400	2	CEQA and Climate Change: An In-Depth Update	<p>The implications of global warming and climate change on compliance with CEQA are evolving and becoming more important each year in California. A focus on reducing our carbon footprint and the potential impacts of global warming is substantially influencing lead agencies; approaches to preparing MNDs and EIRs for CEQA compliance.&amp;Participate in an in-depth discussion of the implications of our evolving understanding of climate change and its practical effects on CEQA compliance.</p> <p>Topics include:</p> <ul style="list-style-type: none"> <li>• Updates on climate change predictions and uncertainties in California</li> <li>• State-of-the-art greenhouse gas analysis approaches</li> <li>• Status updates regarding guidelines and court cases</li> <li>• Thresholds of significance and significance determinations</li> <li>• Feasible mitigation approaches</li> <li>• Role of offsets</li> <li>• Emerging CEQA policy and compliance issues</li> </ul>	Land Use & Natural Resources
173LAN107	365600	1	LAFCO: Planning and Regulating the Boundaries and Service Areas of Cities and Special Districts in California	<p>Receive an overview of statutes and procedures for creating and modifying the organization of cities and special districts in California. This course is essential for anyone involved with land use planning, community boundaries, the delivery of local governmental services and the influences associated with new development and population growth.</p> <p>The evolving laws that govern the Local Agency Formation Commission (LAFCO) in each county, and LAFCO's decisions concerning local governmental boundary changes, are central to the future of California. Examine how LAFCO determinations affect local government's ability to provide adequate services, plan for revenue changes, accommodate population growth, and protect valuable agricultural and open space resources.</p> <p>Discuss the respective responsibilities of counties, cities, special districts, LAFCOs and the public as they relate to local governmental boundary changes. Learn about boundary change laws and practices, municipal service reviews, sphere of influence updates, disadvantaged unincorporated communities and relevant court decisions that influence boundary change procedures.</p>	Land Use & Natural Resources
181NAT177	365610	1	Habitat Conservation Plan Implementation	<p>Examine the techniques and best practices for implementing Habitat Conservation Plans (HCPs), Natural Community Conservation Plans (NCCPs) and other types of regional conservation plans for endangered species. Learn how to address the challenges of implementing a plan. Topics include:</p> <ul style="list-style-type: none"> <li>• Key implementation challenges</li> <li>• Program administration and reporting tools and tips</li> <li>• Bond acquisition and conservation techniques, issues and solutions</li> <li>• Cost-effective habitat management and restoration planning and execution</li> <li>• Species and habitat monitoring</li> <li>• Permit compliance tools and tips</li> <li>• Compliance monitoring, tracking and reporting</li> <li>• Plan amendments</li> <li>• Implementation lessons learned that help prepare a better plan</li> </ul> <p>Note: This course is distinct from the course, Habitat Conservation Planning, which covers how to prepare HCPs and NCCPs.</p>	Land Use & Natural Resources
1615WR370	365670	1	Identifying and Responding to Cyanobacteria Harmful Algae Blooms	DNP	Land Use & Natural Resources
1615WR292	365770	4	Overview of Environmental Statistics for the State Water Boards	DNP	Land Use & Natural Resources
182SEG106	372650	3	Building Efficiencies: Low Carbon and Renewable Energies	<p>Examine the energy issue from the macro perspective of the built environment to the micro approach of how heat flows throughout a building. Using the whole building perspective, discover some of the natural and mechanical means of heating, cooling and ventilation for improved indoor air quality and cost savings. The breakdown of how energy is used in its final stage is a critical component of a successful sustainable environment.&amp;Examine how conservation and the effectiveness of renewable energy sources, such as solar and solar thermal power, biomass, wind, hydroelectric and photovoltaic are key elements to achieving energy efficiency. Learn to analyze energy use as an effective strategy to promote energy conservation in the built environment, including solar panels, exterior shades, lighting a space, painting a roof white, and the issues and technology of bio fuels.</p>	Land Use & Natural Resources
1615WR443	380230	1	Bioassessment Field Sampling		Land Use & Natural Resources
164LUP340	380520	2	Understanding the Sacramento-San Joaquin Delta: An Overview of Delta Governance and Regulation	<p>Gain a comprehensive overview of the Sacramento-San Joaquin Delta and an understanding of its significance to California in this introductory course. Explore all aspects of the Delta, past and present, including current plans to improve and protect the Delta water system, its built environment, infrastructure, hydrology, ecosystem, fish and wildlife, land use and water project operations.</p> <p>Take a nonpartisan look at the following topics:</p> <ul style="list-style-type: none"> <li>• Importance of the Delta: ecosystem, water supply, agriculture, recreation, infrastructure and Delta residents</li> <li>• Environmental setting and conditions</li> <li>• Current challenges facing the Delta</li> <li>• Delta governance and regulation</li> <li>• Plans to fix the Delta: Where do we go from here?</li> </ul>	Land Use & Natural Resources
1615WR471	384030	2	Groundwater Modeling		Land Use & Natural Resources
182LAN109	385160	1	The Intersection Between Transportation and Land Use	<p>Land use and transportation planning fields have been rapidly evolving due to new legislation on sustainable communities and climate change and an increased emphasis on complete streets and multi-modal analysis. Explore the inextricable link between transportation and land use in the development of general plans, community plans, site plans and environmental impact analyses. Learn best practices, examine case studies and gain practical knowledge and skills to put to use in your community.</p> <p>This two-day interactive course focuses on new policies, technical approaches, models and tools for managing challenging land use and transportation issues. Key topics include:</p> <ul style="list-style-type: none"> <li>• Level of Service (LOS) policies and thresholds: Why vehicle LOS may be obsolete for your community and the consequences and choices to consider when selecting new performance measures and thresholds.</li> <li>• The new transportation planning paradigm: Why public agencies should shift their paradigms and the financial, transportation and land use consequences if they don't.</li> <li>• Financial constraints and priorities: Why we pay more annually for TV, mobile phone service and mochas than gas tax, and what it means for your general plan.</li> <li>• Travel forecasting models and their blind spots: What planners need to know about travel forecasting models especially when using them to evaluate VMT, GHG emissions or smart growth plans.</li> <li>• Legal defensibility versus level of confidence: The difference between these two terms and why it makes a difference in your land use and transportation plans.</li> <li>• Completing the streets: Essential factors for creating livable streets, making modal trade-offs and examples of what to avoid.</li> <li>• Big data: How the proliferation of new data sources, such as cell phone origin-destination data, GPS speed data and satellite photos are changing land use and transportation planning.</li> <li>• CEQA and the General Plan: How to get the most out of General Plan updates and accompanying EIRs.</li> </ul> <p>This course is for those interested in the consequences of SB 743, the world of GHG forecasting, the connection between general plans and CEQA, determining SCS consistency, knowing more about layered networks and the 15 new multi-modal LOS methods in practice, obtaining greater value from those expensive</p>	Land Use & Natural Resources
163CLT951	386460	1	Planning in California for Caltrans	DNP	Land Use & Natural Resources
163LUP503	388440	2	GIS Database Design	<p>Review industry-standard and emerging data design technologies for today's natural resource and land use planning. Learn to identify poor data design characteristics, convert logical data definitions and relationships to physical data design, prepare a plan for efficient data loading and manage quality assurance. Analyze real-world examples, including green site selection, government service delivery and sustainability projects. Discuss tabular, spatial, document, image and other types of data formats, as well as new challenges in integrating data of different sources, qualities, scales and complexities. Examine prevailing application development methodologies, such as:</p> <ul style="list-style-type: none"> <li>• Interpreting and documenting business requirements</li> <li>• Modeling data relationships</li> <li>• Database language options</li> <li>• Data population</li> <li>• Database administration</li> </ul> <p>Participants will propose, design and populate a database of their choice using spatial and other forms of data.</p> <p>This course is intended for professionals who desire to include GIS as a tool in land use and resource planning efforts, and will also be beneficial to anyone with a strong desire to incorporate GIS database design and maintenance technology in a systematic and comprehensive manner. The course is directed at those who have a working knowledge of ArcGIS; it is highly recommended that students have experience using ArcGIS or take Introduction to Geographic Information Systems prior to undertaking this course.</p>	Land Use & Natural Resources

Custom Section Number	Code	No. of Offerings	Course Name	Course Description	Program Office
171LUP511	393180	2	Using GIS to Manage, Analyze and Promote Sustainability	This course will identify opportunities to promote, implement and manage sustainability projects through the use of GIS. Students will review real-world case studies of GIS application in solving energy reduction mandates, and will learn how to match GIS tools to specific sustainability challenges, including site selection, preservation efficiency evaluation, land use compatibility analysis and green marketing techniques. In addition to structured hands-on exercises, students will be able to complete a small GIS sustainability project of their own choice. Attention will be given to local and global efforts, including the application of GIS in monitoring California Senate Bill SB 375 and Assembly Bill AB32.	Land Use & Natural Resources
172SEG107	395630	1	The Business of Sustainability	Making the business case is a key piece for advancing a sustainability initiative in any type of organization, and knowing how to develop the financial rationale for the business case is a key component of gaining support for the initiative. This course will examine and apply the tools, models and approaches that students can use to develop the business and financial rationale for a sustainability initiative. Because the business case for sustainability often involves identifying and measuring impacts to communities and the environment, students will learn how to frame these impacts into an approach that communicates a return on the investment. The main deliverable for the course will be creation of a real business case for a sustainability initiative of the students' selection.	Land Use & Natural Resources
161NAT500	396890	1	California Naturalist	DNP	Land Use & Natural Resources
162NAT361	396920	12	Mitigation and Conservation Banking	Learn about the exciting new field of wetland mitigation banking and species conservation banking with an intensive one-day workshop on the legal, technical and financial aspects of habitat banking, which includes a tour of the award winning Cosumnes Floodplain Mitigation Bank. Learn about the regulatory and legal history establishing mitigation banks and the current rules and practices that govern their operation. Explore the technical aspects such as site selection, watershed and species planning, project permitting, construction planning, credit evaluations and maintenance and monitoring issues. Gain an understanding of the business of banking including the financial assessments, market assessments and demand projections, and the how-tos of sales and marketing. The class will then spend the last part of the class at an actual mitigation bank site touring the site and learning about project implementation from the people who built the project.  The course is designed for environmental consultants, government resource professionals, real estate professionals, land appraisers, large land owners, land attorneys and forest and agricultural professionals.  The class also provides the necessary information for implementing large-scale habitat restoration and mitigation projects. Please wear appropriate clothes and shoes for the afternoon outdoor portion of the class (e.g., closed toe, comfortable outdoor shoes).  &	Land Use & Natural Resources
173NAT341	397210	2	Caltrans Environmental Compliance: Categorical Exemptions and Categorical Exclusions	The Caltrans Environmental Compliance Program for Local Agency Partners and Consultants is a program developed by the Caltrans Division of Environmental Analysis-Environmental Staff Development branch in partnership with UC Davis Extension to provide local agency partners and consultants with environmental compliance training to aid them in navigating Caltrans' environmental process. The majority (generally over 95%) of environmental decisions for Caltrans and local agency-sponsored projects are accomplished through the use of a Categorical Exemption (CE) determination under CEQA and/or a Categorical Exclusion (CE) determination under NEPA. It is important that those performing or approving this work have a comprehensive understanding of the preparation, processing, and administration of CE determinations and associated materials in order to avoid errors that could result in project delays.  Upon completion of the course, participants will be able to:  • Compare CEs under NEPA (following FHWA regulations) vs. CEs under CEQA • Determine if a project fits into a CE category and whether exceptions apply • Recognize, access and use available Caltrans resources to analyze and process CEs • Understand the changes to CE practice introduced by SAFETEA-LU, MAP-218, and the FAST Act • Understand how Caltrans oversees local agency-sponsored projects • Determine the need for technical studies and interagency consultation to support a CE • Process a CE, including what forms to use, when to involve the public, and who must approve the CE  At the end of the class, students will be given the opportunity to take a short assessment based on the course objectives. Students who successfully pass the assessment will receive a Caltrans certificate of completion for the course.	Land Use & Natural Resources
184NAT551	403820	2	Caltrans Environmental Compliance: Nuts and Bolts of Environmental Document Review	The Caltrans Environmental Compliance Program for local agency partners and consultants is a pilot program developed by the Caltrans Division of Environmental Analysis-Environmental Staff Development branch in partnership with UC Davis Extension to provide local agency partners and consultants with environmental compliance training to aid them in navigating Caltrans' environmental process. Course content will emphasize Caltrans' requirements, procedures, and document formats.  The Caltrans Nuts and Bolts of Environmental Document Review course is an interactive workshop that presents tips for reviewing environmental documents that have been prepared for Caltrans approval. Participants will improve their ability to prepare and review NEPA Environmental Assessments and Environmental Impact Statements for Caltrans. Participants will learn the appropriate forms to use when reviewing an environmental document, including the Environmental Document Quality Control Reviews form and the Environmental Document Review Checklist. Participants also learn about other valuable tools for environmental document review, including the Caltrans Environmental Document Annotated Outlines, comment matrices, and other tools available on the Caltrans Standard Environmental Reference (SER).	Land Use & Natural Resources
171LUP136	404820	1	Development Agreements, Public-Private Partnerships and Redevelopment 2.0	This course will discuss public-private partnerships and the legal and practical considerations impacting how cities, counties and private developers can collaborate on matters involving economic development. With the repeal of the redevelopment law, one critically important, long-time functioning tool has been eliminated. This class examines other techniques such as development agreements, infrastructure financing districts, special taxes and assessments as possible collaboration strategies for moving forward both public and private agendas.	Land Use & Natural Resources
163SEG103	40954	2	Sustainability and the Built Environment: An Overview	In this comprehensive course, examine sustainability principles as they apply to the built environment from the economic, environmental and social-equity perspectives. Learn how researchers and analysts define sustainability, and how they measure and track progress. Explore historical precursors of the current sustainability movement, and how they translate into planning, engineering, architecture, landscape architecture, construction and other fields. Examine planning, design and building problems holistically, and learn about life-cycle analyses. Analyze numerous case studies, specific projects and emerging technologies and planning approaches from around the world. Students are encouraged to pursue their own passions and interests in sustainability and to work on real-world problem solving requiring multiple disciplines and perspectives.	Land Use & Natural Resources
163LUP134	41158	1	Updating Transportation Analysis in CEQA: How to Effectively Implement SB 743	Senate Bill 743 required OPR to develop revisions to the CEQA Guidelines establishing criteria for determining the significance of transportation impacts. Discuss changes to the CEQA Guidelines for analyzing transportation impacts that focus on the use of vehicle miles traveled (VMT) as a measure of transportation impact, rather than level of service (LOS). Examine the key differences between VMT and LOS, gain an overview of VMT calculation methodologies, and explore examples of the factors to consider in developing significance thresholds. As part of the thresholds subject, examples of transportation impact analysis using LOS and VMT will be discussed for various land development and transportation infrastructure projects. Planning, legal, and other considerations will be covered with respect to shifting from LOS to VMT.	Land Use & Natural Resources
164LUP480	500104	2	Introduction to NEPA	This course will provide an introduction to the National Environmental Policy Act (NEPA), including policies, procedures, and environmental documents necessary for successful compliance. It is primarily designed for new and mid-level NEPA practitioners and will inform agency staff, consultants, regulators, applicants and other interested professionals about best NEPA practices. NEPA is a far-reaching law that applies to virtually all U.S. federal agencies and most activities that affect the environment. Many state, local, and private undertakings must be evaluated pursuant to NEPA if they receive federal funding, require federal permits or would take place on federal land. Course topics include:  • NEPA's legal and regulatory framework  • Determining whether NEPA applies to a proposed action  • Key steps in the NEPA environmental review process  • Determining which type of NEPA document to prepare  • Scoping for NEPA analyses  • Successful integration of NEPA with other environmental laws  • Direct, indirect, and cumulative impact analysis	Land Use & Natural Resources
164LUP334	500122	3	Sustainable Erosion Control: Effective BMPs	Effective erosion and sediment control is rooted in a fundamental and comprehensive understanding of site processes and basing the selection and application of Best Management Practices (BMPs) on those processes. This course will present the art and science of proper BMP selection and implementation. Students will learn concepts of sustainable erosion control and advanced methods for Highway Slopes curriculum and BMPs developed by California Department of Transportation and how to install BMPs that allow nature's own erosion control processes to provide long-term sustainable site protection. Case studies will be used to describe challenging site conditions and how BMPs were selected and installed to provide sediment and erosion control. Dirt Time videos will give attendees as close to a hands-on experience as possible from the classroom environment &	Land Use & Natural Resources

Custom Section Number	Code	No. of Offerings	Course Name	Course Description	Program Office
162LUP271	500734	1	Politics and Policymaking	Explore the political variables and systems that shape environmental policymaking for land use, energy, infrastructure, resource conservation, and climate, including legislation and regulatory action in municipal, state, and federal governments. Examine the advocacy and public affairs campaigns that leverage these issues; political variables into policy change. Balancing political science concepts with practical and applied training, students will engage in tactical simulations of advocacy campaigns in a highly interactive format.  By the end of this course, students will have experience:  Identifying the routes to policy change through a given political environment; and conversely identifying the chokepoints for halting adverse policy change Writing a fact sheet that optimizes a legislative measure's best chance for success; and conversely evaluating a fact sheet and other marketing material Developing an outreach strategy and lobbying diverse stakeholders for passage of a legislative measure; and conversely lobbying for a legislative measure's defeat	Land Use & Natural Resources
161SWR200	500755	2	SWRCB Contract Task 1 2015 LUNR Finances		Land Use & Natural Resources
163FAW108	500883	1	Groundwater Law and Hydrology		Land Use & Natural Resources
184NAT552	500934	2	Caltrans Environmental Compliance: Introduction to Cultural Resources Compliance	The Caltrans Environmental Compliance Program for Local Agency Partners and Consultants is a program developed by the Caltrans Division of Environmental Analysis-Environmental Staff Development branch in partnership with UC Davis Extension to provide local agency partners and consultants with environmental compliance training to aid them in navigating Caltrans' environmental process. Course content will emphasize Caltrans' requirements, procedures, and document formats.  The Caltrans Introduction to Cultural Resources Compliance course is an introductory course where students will increase their understanding of Caltrans cultural resources compliance procedures. Topics will include:  Introduction to Section 106 and 36 CFR Part 800 - basics of process, National Register of Historic Places (NRHP) criteria, aspects of integrity and criteria of adverse effect  2014 Programmatic Agreement (PA) and how it is different from 36 CFR Part 800, delegations of specific authorities to Caltrans  Professionally Qualified Staff (POS) roles and responsibilities and what is a PQS, what do they do, what do they need to know about the project  Area of Potential Effects (APE) mapping and delineation - why we need to understand the undertaking scope  How to make an appropriate finding of effect and what to consider  Formats for cultural resources reports (HPSR, ASR, AER, HRER, FOE)	Land Use & Natural Resources
162NRS421	500952	2	Chevron Conference		Land Use & Natural Resources
161LUP100	501160	1	Planning and Sustainability Online Information Session	Join us for this free online information session to hear about our programs in our Planning and Sustainability portfolio. Meet our instructors and staff and learn what our programs can offer you. Our program is the largest of its kind in the western United States, meeting the continuing education needs of planners, attorneys, resource managers, government officials, developers and others involved in the planning process and the management of environmental resources. We offer courses and programs in the following areas: Land Use Planning, Natural Resources, Public Finance, Public Policy, Water Resources, Geographic Information Systems, Sustainability and Conflict Resolution. Get your questions answered and learn about how our programs can help you advance your career.  Reserve your spot today!	Land Use & Natural Resources
163LUP472	501206	6	Environmental Justice and NEPA: Overview and Update on Recent Developments	Gain an overview of environmental justice and how it integrates with the National Environmental Policy Act (NEPA) process. Examine the legal framework for integration, including an overview of key laws, regulations and orders, such as Title VI of the Civil Rights Act of 1964 and Executive Order 12898 on Federal Actions and Environmental Justice. Discuss examples and case studies for recent and current projects, and learn key principles for preparing effective environmental justice studies for NEPA analyses. Relevant case law and recent policy and guidance issued by federal agencies, including the Environmental Protection Agency (EPA), will also be covered.	Land Use & Natural Resources
162NAT499	501216	1	Caltrans Introduction to GIS	Explore basic GIS software functionality with hands-on experience. Learn the foundation for using desktop ArcGIS software, a product by Environmental Systems Research Institute (ESRI) of Redlands, Calif. Emphasis will be placed on display characteristics, attribute querying, spatial analysis, and database exploration and management.  By the end of the course, you will be able to:  Create ArcGIS shape files, geodatabases, and maps for spatial analysis purposes Import text, km/kmz, spreadsheet, image, GPS and address files into ArcGIS and convert them into shape files and geodatabase feature classes Run assigned queries on GIS feature classes, shape files, and tables to display the desired text and graphic output (hard and soft copy output) Effectively classify and symbolize spatial data Analyze relationships between spatial elements Demonstrate the ability to plan an appropriate geodatabase structure to reach the objectives of a particular assigned problem Have an introduction to ArcGIS Online, a web-based GIS product from ESRI	Land Use & Natural Resources
161SWR452	501224	3	Principles of Contaminant Transport and Fate in Soil and Groundwater		Land Use & Natural Resources
162NAT263	501230	3	Bald and Golden Eagle Act and the Migratory Bird Treaty Act Compliance	The Bald and Golden Eagle Protection Act (Eagle Act) and Migratory Bird Treaty Act (MBTA) are the cornerstone of federal environmental laws protecting eagles and migratory birds. This course will summarize recent developments and new guidance and regulations from the U.S. Fish and Wildlife Service (USFWS) on how to prepare Eagle Conservation Plans (ECPs) and how to comply with MBTA. The course will provide important information on these laws including:  An overview of the Eagle Act and MBTA Recent history, case law, permit requirements and guidance How to apply USFWS guidance to projects and how to prepare an ECP The process for obtaining individual and programmatic permits How best to coordinate with the USFWS to obtain an Eagle Take Permit Challenges and solutions associated with ECP development and permitting Compliance with the National Environmental Policy Act (NEPA) Benefits and costs of Eagle Act compliance Example ECPs and permits Integration of ECPs with Habitat Conservation Plans Other MBTA issues and permits  The course will be useful for project managers and staff seeking to comply with these laws.	Land Use & Natural Resources
162LUP512	501235	1	The General Plan in California	Does your community need to update its General Plan? David Early, author of The General Plan in California, will share his insights on the policies and best practices associated with general plan preparation. Learn how to scope and budget a project, hire consulting assistance as necessary, and finish the project in an efficient and comprehensive manner. Topics include:  General plan law and requirements Data collection, mapping and land use inventories Preparing and evaluating alternatives Integration of CEQA Public involvement in general planning Sustainability in the general plan  Students will receive a copy of the book, The General Plan in California, published by Solano Press.	Land Use & Natural Resources
161FAW100	501300	3	Overview of California Water Law & Policy		Land Use & Natural Resources
161NAT275	501346	5	Overview of California Water Law and Policy for NOAA		Land Use & Natural Resources
162SWR650	501378	1	Fluvial Geomorphology		Land Use & Natural Resources
162FAW103	501454	1	Overview of Environmental Statistics		Land Use & Natural Resources
162FAW111	501456	1	CEQA: A Step by Step Approach		Land Use & Natural Resources
163FAW107	501457	2	Environmental Negotiations		Land Use & Natural Resources
1635WR340	502696	1	CEQA Update, Issues and Trends		Land Use & Natural Resources

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164LUP343	502714	1	Sustainable Groundwater Management Act	Recent passage of California's landmark Sustainable Groundwater Management Act fundamentally changes the landscape for water managers throughout the state. To assist professionals in complying with and implementing the legislation, UC Davis Extension's Land Use and Natural Resources Program is pleased to announce a new noncredit course focused exclusively on ground water management in today's complex regulatory and hydrologic environment.  The program is designed for practitioners from all perspectives: water districts, cities and counties, state regulatory and oversight agencies, consulting engineers, hydrologists, planners and policy analysts, attorneys, IRWM specialists, administrators, environmental and water resource scientists and advocates, and others. The program will delve deep into the law and its requirements, help participants understand groundwater law and hydrology and walk them through creating viable implementation strategies and developing a robust groundwater sustainability plan.	Land Use & Natural Resources
1635WR450	502725	1	CEQA: Updates, Issues and Trends		Land Use & Natural Resources
1635WR350	502735	2	Chemistry Refresher for Environmental Professionals		Land Use & Natural Resources
1635WR650	502736	2	Stormwater Pollutant Chemistry, Monitoring and BMP Effectiveness		Land Use & Natural Resources
1645WR390	502948	1	Wetlands Delineation		Land Use & Natural Resources
1635WR622	503131	2	Water Board In House Trainings		Land Use & Natural Resources
1645WR651	503700	6	Fluvial Geomorphology		Land Use & Natural Resources
1645WR210	503718	1	Pretreatment Training for Regulators	This one day workshop is for anyone working in pretreatment. Because municipalities must review their local limits every five years, this workshop will help you understand the local limits development process, how to conduct a local limits review, and better identify pretreatment issues.  Topics covered will be:  ? Introduction to Local Limits; ? Establishing needs and understanding the process; ? Identifying pollutants of concern; ? Conducting a preliminary analysis; ? Safety factors; ? Characterizing flows & loads; ? Calculating allowable headworks loadings; ? Developing control strategies for toxic and conventional pollutants; ? Updating pretreatment ordinances; ? Reviewing Local Limits Submittals;  The workshop will refer to the tables, figures, and appendices in the 2004 USEPA Local Limits Development Guidance, especially when working through examples. If you are not familiar with the Pretreatment Program, you are strongly encouraged to read Chapters 1 & 2 in the guidance manual before the class.  This course is recommended for all NPDES permit and WDR writers and support staff who regulate facilities that require or may require development of pretreatment programs.	Land Use & Natural Resources
1645WR810	503816	2	Constituents of Emerging Concern (CECs) and Aquatic Ecosystem Monitoring		Land Use & Natural Resources
1645WR500	503875	1	Development of a Watershed Assessment Conceptual Model to Measure Watershed Health		Land Use & Natural Resources
1715WR291	503917	1	Environmental Statistics		Land Use & Natural Resources
1715WR101	504007	1	Courses for State Water Resources Control Board		Land Use & Natural Resources
171LUF001	504160	254	Urban and Community Farming		Land Use & Natural Resources
1735EG001	504520	1	Green Building and Construction Materials-Development		Land Use & Natural Resources
174FAW100	504633	1	Fish and Wildlife Contract Courses FY 2017-2018		Land Use & Natural Resources
181WATS03	504666	9	Developing Groundwater Sustainability Plans: Strategies and Process	In this course, you will learn about the process and content of the new groundwater sustainability plans and analyze various implementation strategies that meet the technical requirements of the Sustainable Groundwater Management Act.  Topics include:  Stakeholder outreach Exploring alternative strategies Nonjunctive use and groundwater recharge Extraction limits and fees Shared resource agreements Conservation and recycling strategies Water quality considerations Monitoring and Modeling Permitting and approval processes  Approaches to Achieve Sustainability  Projects: artificial recharge Management actions: focused demand reduction, intra-basin water transfers  Considerations in Implementation of Projects and Management Actions  Bates (Proposition 2018)	Land Use & Natural Resources
183NAT150	504912	1	California's Regional Conservation Investment Strategy Program	In January 2017, the California Department of Fish and Wildlife (CDFW) launched an ambitious new conservation and mitigation program. The program encourages state and local public agencies to prepare voluntary Regional Conservation Investment Strategies (RCIS) to help guide and prioritize the conservation of natural resources in their region. Once reviewed by the public and approved by CDFW, these regional strategies can be used by anyone to help identify and implement conservation priorities and determine the best mitigation sites. Landowners may take the strategy a step further and develop a Mitigation Credit Agreement (MCA). Once reviewed by the public and approved by CDFW, this agreement provides credits for natural resources that can be used or sold. The program is flexible enough to allow use under a variety of state laws, including the California Endangered Species Act, California Environmental Quality Act, and others. Several regional strategies have been approved by CDFW, others are underway, and several mitigation credit agreements are in development.  This course will introduce this exciting new program and provide essential information for those considering preparing or using a regional strategy or credit agreement. The course is taught by experts who have been implementing it since the legislation passed in 2017.  The course will cover the following topics:  >Program origins and legislative history >Purpose of the program>Status of the program statewide!>Differences between Regional Conservation Assessment (RCA), Regional Conservation Investment Strategy (RCIS), and Mitigation Credit Agreement (MCA) !>Overview of Fish and Game Code requirements and CDFW Guidelines !>Process for RCA, RCIS, and MCA preparation, review, and approval !>Use of MCAs for natural resource compliance under relevant state laws !>Comparison between MCAs and mitigation banks !>Relationship to other state and federal wildlife conservation programs !>The future of the program	Land Use & Natural Resources
1745EG001	504941	1	Sustainable Planning Environmental Site Design and Development- Course Development		Land Use & Natural Resources
183LAN115	505070	1	Affordable Housing	This course will cover the opportunities and challenges in developing affordable housing from planning to financing. Topics to be covered will include:  The State planning framework from housing element law to the variety of other state planning requirements. Funding affordable housing. Challenges, opportunities and community participation.	Land Use & Natural Resources
182FAW001	505317	1	Fish and Wildlife Contract Courses FY 2018-2019		Land Use & Natural Resources

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161OTH800	142820	3	Mountain Horsemanship: Veterinary Care and Horsepacking in the Wilderness	<p>This deluxe, seven-day pack trip covers the essentials of horsepacking with the Golden Trout Wilderness of the High Sierra as your laboratory. Past participants have acclaimed it as an outstanding adventure. Learn about equipment, emergency veterinary care, feeding and managing livestock in the backcountry, and more.</p> <p>Lecture and laboratory topics include:</p> <ul style="list-style-type: none"> <li>Wilderness conduct of people</li> <li>Trail riding safety and horse equipment</li> <li>Methods of feeding livestock in the backcountry</li> <li>Management of livestock</li> <li>Preventative medicine</li> <li>Evaluating the normal horse</li> <li>Treating a hurt or sick horse in the wilderness</li> <li>Packing equipment, fitting saddles, making loads, hitches and leading strings of mules</li> <li>Veterinary skills including physical examination, floating teeth, intramuscular/IV injections, applying wraps, animal restraint and aging horses</li> <li>Shoeing</li> </ul> <p>Additional information is available on request.</p>	Agriculture
162VIT204	309830	3	Current Issues in Vineyard Health	<p>Lectures are provided by a talented group of speakers comprised of UC faculty, departmental experts and UC farm advisors chosen for their involvement in developing solutions to the problems associated with grape pests and diseases. Speakers will provide the latest information on current topics, including:</p> <ul style="list-style-type: none"> <li>Breeding grapevines for disease resistance</li> <li>Controlling grape fungal diseases in the vineyard</li> <li>Managing grapevine viral diseases and their vectors</li> <li>Grapevine disease ecology and epidemiology</li> <li>The grape grower's role in managing exotic pests and diseases</li> </ul> <p><a href="https://ucdavis.box.com/shared/static/fjd2rb6j8ec4ai0t890vwx12toaf6xx.pdf">Download the course agenda.</a></p>	Agriculture
164AGC800	320050	2	Mustangs: A Living Legacy	<p>Track and observe wild mustangs in the last remaining herd area not managed by man in the barren and remote high desert area of Pizona in Inyo National Forest, which plays host to North America's wildest bands of mustangs. This trip combines a superb outdoor adventure with a unique educational experience.</p> <p>Spend four days observing and photographing the free-roaming herds, blooming wildflowers and other resident wildlife. Enjoy awe-inspiring vistas with their rugged beauty and stunning mountain sunsets. Experienced guides and instructors will lead evening discussions on the history, social behavior and uncertain future of these proud animals. While this adventure is open to any level rider, you should be prepared to ride three to six hours a day with a break for lunch. The group will operate from a base central meadow camp and ride out each day to open range.</p>	Agriculture
162VIT257	338110	7	Viticulture for Winemakers	<p>It is true that great winemaking begins in the vineyard. Review how basic viticulture relates to wine production and wine quality. Learn the science behind how wine grapes are grown, and study the biological, environmental and managerial factors that influence fruit quality. Your weekly exercise will be to develop a hypothetical vineyard to meet specific winemaking objectives during the course. Topics to be covered include:</p> <ul style="list-style-type: none"> <li>The importance of quality plant material</li> <li>Soils and cover crops</li> <li>Grapevine viruses, diseases and pests</li> <li>Vineyard development, pruning and water relations</li> <li>Nutrition and vine balance</li> </ul>	Agriculture
163VIT203	361610	3	Current Wine and Winegrape Research	<p>Competitive grants have funded some of the most exciting new and broad-reaching research on issues relating to wine grapes and enology. Enjoy a full day of brief, 20-minute presentations by researchers describing their current projects in this unique forum.</p> <p>This is an exclusive opportunity to hear and discuss the latest research directly from these highly-regarded researchers. Topics include work on grapevine breeding and evaluation, cultural practices, disease and insect pest control, and enology. The 20-minute report format allows for synopses of many projects in a single day. Each scientist will have 15 minutes to speak and an additional five minutes to answer questions from the audience.</p> <p>The researchers competed successfully for grants from the American Vineyard Foundation, a nonprofit corporation supporting research in viticulture and enology. To qualify for these grants, researchers must submit yearly grant proposals and reports, undergoing continuous scrutiny of their work from peer review panels.</p> <p>A wine reception, co-sponsored by the American Vineyard Foundation and the National Grape Research Alliance (NGRA), during which you can meet the researchers, will follow the presentations.</p>	Agriculture
181AGC100	504770	1	Produce Professional Certificate Program	<p>With a 40-year history, and a cadre of the most respected experts in the field, the UC Davis Postharvest Technology Center is ripe to introduce its new Produce Professional Certificate Program—the first-of-its-kind for produce industry professionals. The program allows participants to customize their curriculum through an a-la-carte menu in addition to a core set of courses. Based on a point system, the program awards one point for each hour of instruction. This includes a minimum of 76 hours of required courses and approximately 44 hours of optional courses and lectures for a total of 120 points to earn a certificate.</p> <p>Certificate completion can be achieved with attendance at as few as three on-site courses, which may be taken in any order during the four-year time frame. Online modules may be taken at any time. We will honor a three-year retroactive option to participants enrolled in previous courses who pass the test for each course attended. Participants will complete a course, in person or online, take an online quiz and, upon earning the required score (&gt;80%), receive a record of achievement.</p> <p>After completing 120 points, the UC Davis Postharvest Technology Center will award participants their well-deserved Produce Professional Certificate, presented in a custom frame.</p>	Agriculture
184AGC800	505088	1	Mustangs: A Living Legacy	<p>Track and observe wild mustangs in the last remaining herd area not managed by man in the barren and remote high desert area of Pizona in Inyo National Forest, which plays host to North America's wildest bands of mustangs. This trip combines a superb outdoor adventure with a unique educational experience.</p> <p>Spend four days observing and photographing the free-roaming herds, blooming wildflowers and other resident wildlife. Enjoy awe-inspiring vistas with their rugged beauty and stunning mountain sunsets. Experienced guides and instructors will lead evening discussions on the history, social behavior and uncertain future of these proud animals. While this adventure is open to any level rider, you should be prepared to ride three to six hours a day with a break for lunch. The group will operate from a base central meadow camp and ride out each day to open range.</p> <p>LOCATION:</p> <p>The program site is the Montgomery Pass Wild Horse Range, a Pinyon pine forest and high desert region northeast of Bishop, Calif. This area, on the Nevada-California border, is nestled in view of the Sierra to the west and the White Mountains to the south.</p> <p>FORMAT</p> <p>The program consists of a series of informal but structured presentations and discussions spread throughout a wilderness horseback camping experience. The mixture of organized and free time permits you to enjoy the full spectrum of this pristine environment. Throughout this trip, you will be riding with the instructor and his staff members. The group stops periodically for observation, food, informal discussion, rest and seminars. Be prepared to ride at least six hours each day.</p> <p>LECTURE AND LABORATORY TOPICS:</p> <ul style="list-style-type: none"> <li>The historical background and political evolution of wild horse populations</li> <li>Aspects of the physical environment of the horse range, including climate, geology, water and seasonal changes</li> <li>The relationship between wild horses, other animals and plant life in the ecology of the horse range</li> </ul>	Agriculture

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183VIT210	505092	1	Establishing and Managing a Small Vineyard	Learn to establish and manage profitable small vineyards with in-depth instruction and hands-on learning in this workshop designed for the grape grower, winemaker, viticulturist and apprentice viticulturist in the heart of Napa Valley at our Oakville Experiment Station.  Day one topics include:  Site selection to avoid frost and freeze events Site preparation and amendment Trellis selection to manage vineyard vigor Soil preparation and amendments to ensure profitability Cultural practices focusing on practical aspects of management Irrigation system design and simplified irrigation scheduling for productivity Quality and harvesting decisions  Day two will be spent in the vineyard, examining vineyard instruction on trellis types, pruning, irrigation system design and sprayer calibration.  Please dress appropriately for the vineyard sessions with closed-toe shoes, long sleeve shirts and pants. Space is limited. Early enrollment is encouraged	Agriculture
1835NF700	505456	2	Harvest and Post Harvest Management of Fruits and Nuts	These online training modules are designed for small-scale growers and/or beginner farmers. These modules complement the UC Davis Fruit and Nut Research and Information Centers (FNRIC) annual short course on Principles of Fruit & Nut Tree Growth, Cropping & Management, which covers the fundamentals of tree biology essential in making sound orchard management and business decisions in growing tree fruit and nut crops in California. If, after taking these online courses you would like more in-depth information on the topics covered, you may want to consider taking FNRIC's annual <a href="http://fruitandnuteducation.ucdavis.edu/education/principles/">http://fruitandnuteducation.ucdavis.edu/education/principles/</a> Principles Short Course. The in-person course incorporates lectures, hands-on lab exercises and field demonstrations to provide information on all aspects of basic plant biology and the relationship between plant biology and fruit and nut orchard management.  Note: Special recognition goes to the CDFA Specialty Crop Block Grant Program, the 2015 Walnut Short Course attendees, the California Pistachio Research Board and Mountain View Cold Storage for supporting this project.	Agriculture
1835NF701	505457	2	Advances in Pistachio Production	These online training modules are designed for small-scale growers and/or beginner farmers. These modules complement the UC Davis Fruit and Nut Research and Information Centers (FNRIC) annual short course on Principles of Fruit & Nut Tree Growth, Cropping & Management, which covers the fundamentals of tree biology essential in making sound orchard management and business decisions in growing tree fruit and nut crops in California. If, after taking these online courses you would like more in-depth information on the topics covered, you may want to consider taking FNRIC's annual <a href="http://fruitandnuteducation.ucdavis.edu/education/principles/">http://fruitandnuteducation.ucdavis.edu/education/principles/</a> Principles Short Course. The in-person course incorporates lectures, hands-on lab exercises and field demonstrations to provide information on all aspects of basic plant biology and the relationship between plant biology and fruit and nut orchard management.  Note: Special recognition goes to the CDFA Specialty Crop Block Grant Program, the 2015 Walnut Short Course attendees, the California Pistachio Research Board and Mountain View Cold Storage for supporting this project.	Agriculture
1835NF702	505458	2	Advances in Almond Production	These online training modules are designed for small-scale growers and/or beginner farmers. These modules complement the UC Davis Fruit and Nut Research and Information Centers (FNRIC) annual short course on Principles of Fruit & Nut Tree Growth, Cropping & Management, which covers the fundamentals of tree biology essential in making sound orchard management and business decisions in growing tree fruit and nut crops in California. If, after taking these online courses you would like more in-depth information on the topics covered, you may want to consider taking FNRIC's annual <a href="http://fruitandnuteducation.ucdavis.edu/education/principles/">http://fruitandnuteducation.ucdavis.edu/education/principles/</a> Principles Short Course. The in-person course incorporates lectures, hands-on lab exercises and field demonstrations to provide information on all aspects of basic plant biology and the relationship between plant biology and fruit and nut orchard management.  Note: Special recognition goes to the CDFA Specialty Crop Block Grant Program, the 2015 Walnut Short Course attendees, the California Pistachio Research Board and Mountain View Cold Storage for supporting this project.	Agriculture
1835NF703	505459	2	Advances in Walnut Production	These online training modules are designed for small-scale growers and/or beginner farmers. These modules complement the UC Davis Fruit and Nut Research and Information Centers (FNRIC) annual short course on Principles of Fruit & Nut Tree Growth, Cropping & Management, which covers the fundamentals of tree biology essential in making sound orchard management and business decisions in growing tree fruit and nut crops in California. If, after taking these online courses you would like more in-depth information on the topics covered, you may want to consider taking FNRIC's annual <a href="http://fruitandnuteducation.ucdavis.edu/education/principles/">http://fruitandnuteducation.ucdavis.edu/education/principles/</a> Principles Short Course. The in-person course incorporates lectures, hands-on lab exercises and field demonstrations to provide information on all aspects of basic plant biology and the relationship between plant biology and fruit and nut orchard management.  Note: Special recognition goes to the CDFA Specialty Crop Block Grant Program, the 2015 Walnut Short Course attendees, the California Pistachio Research Board and Mountain View Cold Storage for supporting this project.	Agriculture
1835NF704	505460	2	Advances in Stone Fruit Production	These online training modules are designed for small-scale growers and/or beginner farmers. These modules complement the UC Davis Fruit and Nut Research and Information Centers (FNRIC) annual short course on Principles of Fruit & Nut Tree Growth, Cropping & Management, which covers the fundamentals of tree biology essential in making sound orchard management and business decisions in growing tree fruit and nut crops in California. If, after taking these online courses you would like more in-depth information on the topics covered, you may want to consider taking FNRIC's annual <a href="http://fruitandnuteducation.ucdavis.edu/education/principles/">http://fruitandnuteducation.ucdavis.edu/education/principles/</a> Principles Short Course. The in-person course incorporates lectures, hands-on lab exercises and field demonstrations to provide information on all aspects of basic plant biology and the relationship between plant biology and fruit and nut orchard management.  Note: Special recognition goes to the CDFA Specialty Crop Block Grant Program, the 2015 Walnut Short Course attendees, the California Pistachio Research Board and Mountain View Cold Storage for supporting this project.	Agriculture
1610EH100	501313	1	OEHA - 4 Website		Collaboration Center
161CCR100	501361	1	CAMPOS Retreat Facilitation		Collaboration Center
161CCR101	501379	1	OEHA 5- Climate Change		Collaboration Center
1610EH200	501384	1	OEHA -6 Outreach		Collaboration Center
161DT5400	501413	1	DTSC - Diversity and Inclusion		Collaboration Center
162LUP900	501458	1	The Science Enterprise Workshop: Supporting and Implementing Collaborative Science	Scientists, science-policy experts, and stakeholders will gather for a two-day workshop to better understand how collaborative science is being managed, funded, and communicated in several high-profile ecosystems around the country. The program is designed to identify common themes and differences in the approaches being used across the systems and to provide a foundation for discussion of how to best provide science support to managers working to improve the long-term health and viability of the nation's high-profile ecosystems.	Collaboration Center
162MDT100	501500	1	Metropolitan Water District of SoCal Water Reuse Forum		Collaboration Center
163CR500	502784	1	CDFA Executive Leadership Program		Collaboration Center
164CCR900	503939	1	Division of State Architecture - DSA		Collaboration Center
172CCR100	504061	2	Delta Stewardship Council Contract Custom Training 1.0		Collaboration Center
183EC001	505047	2	Delta Stewardship Council FY 2018 - 2019		Collaboration Center
181ECO101	505056	1	OEHA - 7 Public Outreach		Collaboration Center
161EDC201	309790	8	Forestry Institute for Teachers	The Forestry Institute for Teachers (FIT) is a one-week, experiential course for K-12 teachers. Registered participants may enroll for three academic quarter units. FIT is designed to increase participants' content knowledge, skills and resources to effectively teach their students about forest ecology and forest resource management practices. The program is intricately correlated with the California Department of Education's subject area standards and goals for Environmental Education. The program empowers teachers to foster conceptual learning, critical thinking and decision-making skills in their classrooms. For additional information visit <a href="http://www.forestryinstitute.org">http://www.forestryinstitute.org</a> forestryinstitute.org. &  A very important objective of FIT is to provide balanced, standards-based education that is vital to the understanding of how decisions are made about management of forests and the natural resources upon which humans depend. Another very important objective is to utilize a balanced approach in exploring the controversial issues surrounding California's forests. FIT participants examine how forest ecosystems and their management impact the needs of both rural and urban citizens in regard to water, wildlife, recreation, biological diversity, habitat protection and consumer products derived from forests. Lastly, participants also draft an environmental education curriculum or service learning project.	Education
161EDN200	416440	4	Edible Schoolyard Project Academy: Edible Education in the Field	This course is a 3.0 CEU option for registered participants in The Edible Schoolyard Project Summer Academy, Edible Education in the Field.  Participants will have an opportunity to learn about curriculum integration and development, funding strategies, volunteer management, class scheduling, rituals and routines of garden and kitchen classrooms, outreach strategies, and much more. Participants will leave the Academy with garden and kitchen lessons linked to academic standards, tools for developing programs in their own communities and strategies to strengthen existing programs, and an in-depth understanding of how the edible schoolyard operates on a daily basis. Finally, participants join a network of people all over the world who are engaged in bringing edible education programs to their communities.  For additional details, registration and inquiries when the course is not offered visit <a href="http://www.edibleschoolyard.org">http://www.edibleschoolyard.org</a> www.edibleschoolyard.org.	Education
184CRT011	505881	1	Forestry Institute for Teachers	The Forestry Institute for Teachers (FIT) was founded in 1993. FIT is a one-week course that is designed to provide K-12 teachers with increased content knowledge, skills and tools to effectively teach their students about forest ecology and forest resource management practices, including timber harvesting, prescribed burning and biomass harvesting. The forest environment is the basis for integrating the teaching and learning of many subject areas, including environmental science, physical science, social science, history, biology and forestry.	Education

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161EDN050	375860	1	Best Practices of Environmental Education and Stewardship	<p>This course is a 3.0 CEU option for the California Environmental Foundation Institute Best Practices of Environmental Education and Stewardship.</p> <p>The Institute will provide instruction on three Saturdays by experts in best practices of environment-based pedagogy and environmental education (EE) content. Participants will learn how to apply the latest instructional strategies from veteran staff developers who work for the highly regarded K-12 Alliance. Participants will practice engaging their students in exciting, premier EE curricula identified by the California Department of Education. Selected EE lessons will be led by experts from the California Department of Fish and Game, the California Department of Forestry and Fire Protection, Metropolitan Water District, Los Angeles Department of Water and Power, and the California Water Foundation.</p> <p>Meaningful stewardship programs will be introduced by education professionals from the Jane Goodall Institute and the National Geographic Society. Following each Saturday institute, participants will collaborate with their local CREC network coordinator to determine their curriculum and community EE resource needs. Teachers will use these resources to implement an EE lesson that includes a school or community environmental stewardship project. Implementation results will be shared with their fellow participants at the following Saturday Institute where they will receive feedback and coaching on content, pedagogy, and environmental stewardship.</p> <p>All sample activities for teachers and their students will be correlated to California's Next Generation Science Standards and California's Common Core State Standards. Best practices of experiential instruction in environment-based lessons will be presented and later applied by the participants in planning school curriculum and stewardship projects.</p> <p>Topical Outline:</p> <p>The three major themes of the Institute are Systems, Diversity and Interrelationships. Content covered within each theme will feature cross-disciplinary topics of environment: resource management, biodiversity, conserving water and energy, ground water and surface water quality, and environment-based careers. Thematic presentations will be as follows:</p> <p>A wildlife expert from the California Department of Fish and Game and a biologist representing the Jane Goodall Institute will co-present an activity about water pollution and its effects on wildlife and wildlife habitat.</p>	Education
164MH211	336880	3	Telemedicine	<p>Learn to develop a comprehensive and strategic business plan for a telemedicine program. Discuss key legal and policy issues, including HIPAA and JCAHO rules on risk management, standards, regulations, compliance and ethics. Compare and contrast various telemedicine programs with the UC Davis program model to determine best practices for implementing and evaluating programs and emerging technologies.</p> <p>This course is designed for resident physicians, junior and senior specialists, nursing and paramedical professionals, telemedicine coordinators, hospital administrators and graduating medical students who wish to attain the knowledge, understanding and practical preparation for planning, implementing and practicing telemedicine.</p> <p>&lt;a href="http://youtu.be/yeA41G-Dcw"&gt;Preview a sample of this course.</p> <p>This is not a self-paced course. Students will progress through the course together. Lessons will be posted one week at a time. The previous week's lesson will remain available for the duration of the course. Students who enroll after the start date of the course will have to contact the instructor regarding missed lessons.</p>	Health Sciences
161INL200	404800	2	Critical Topics in Environmental Law in a Comparative Perspective	DNP	Law & Public Policy
172HSD122	152571	2	Designing and Delivering Effective Health and Safety Training	<p>Build the skills necessary to effectively train others in health and safety. Learn to design, develop and deliver workplace health and safety training programs using a wide range of instructional methods. Explore various approaches to instruction, including participatory techniques and tips for engaging a specific audience and facilitating discussions and small group activity methods. Topics include:</p> <ul style="list-style-type: none"> <li>Adult learning principles</li> <li>Assessing audience needs</li> <li>Course development</li> <li>Instructional methods</li> <li>Presentation techniques</li> <li>Evaluation and feedback</li> </ul> <p>You will develop and deliver a presentation using the techniques covered and are encouraged to bring work-related projects and supporting materials. A laptop computer is recommended, but not required. This is a required course for the Health and Safety Training Professional Concentration.</p>	Occupational & Environmental Management
164HSD536	153130	1	Indoor Air Quality Management	<p>Learn about indoor air quality and related health issues, with emphasis on commercial and institutional buildings. Examine common indoor air quality complaints, including concerns about mold, chemicals, odors and persistent health complaints. Discover green building concepts and how indoor air quality fits with LEED building designs and certifications. Review indoor air quality problems, including:</p> <ul style="list-style-type: none"> <li>Common indoor air pollutants and their sources</li> <li>How to investigate indoor air quality and building illness complaints</li> <li>Air sampling and analysis for indoor air pollutants</li> <li>Building ventilation and the role it plays in indoor air quality</li> <li>Remedies for indoor air quality complaints</li> <li>Regulations that pertain to indoor air quality</li> </ul> <p>The complex issues of indoor air quality complaints and concerns will also be addressed. Case studies provide real-life examples of how to recognize and address these critical issues. This course is an elective in the Workplace Health and Safety Certificate Program.</p>	Occupational & Environmental Management
161HSD500	154120	1	Health and Safety for Workers: Laws and Regulations	<p>Learn the relevant laws and regulations pertaining to occupational health and safety, including Cal/OSHA and federal OSHA; criminal considerations, such as supervisors' and managers' responsibilities; workers' compensation jurisdiction, claims and benefits; the claims process and program administration; and legal liability. Case studies illustrate both simple and complex issues.</p> <p>Administering health and safety programs requires up-to-the-minute, working knowledge of laws and regulations. Learn to use the Internet to research the most current regulations during a computer lab session. This course is for individuals who have interests in, or responsibilities for, administering occupational health and safety programs. This is a required course for the Workplace Health and Safety Manager Certificate Program.</p>	Occupational & Environmental Management
163HSD580	163740	4	Ergonomics in the Workplace	<p>Learn the fundamentals of ergonomics in industrial and office workplaces. Discuss medical issues, regulatory strategies, engineering solutions and productivity improvements. If your employees experience problems with lifting, repetitive motion or overexertion, their improper work practices may cause serious and long-term disabilities. A review of safe work practices, with a focus on basic ergonomics may help your organization. Develop ergonomic recognition and identification skills necessary for implementation of an overall injury prevention strategy. Discussions and exercises will focus on problem solving in real occupational situations. This is a required course for the Workplace Health and Safety Manager Certificate Program.</p>	Occupational & Environmental Management
162HSD501	163830	5	Health and Safety Management and Program Development	<p>Explore the various approaches to health and safety management, including methods to obtain and maintain top management support; methods to obtain and maintain employee/union support; how to determine the real cost of accidents; behavior modification practices; the success and failure of rewards and recognition programs; and techniques for system-based auditing. Learn how to investigate the causes of accidents, organize health and safety committees and develop health and safety training programs. This is a required course for the Workplace Health and Safety Manager Certificate Program.</p>	Occupational & Environmental Management
172HSD522	163860	3	Fire and Life Safety Awareness	<p>Discover the types of built-in fire protection features and fire and life safety hazards common to the educational and workplace environments. This course features "passive" fire protection features, maintenance of exits, knowledge and use of fire extinguishers, impact to and from other occupants, human behavior before and during an emergency, proper storage techniques and services potentially available through local fire departments. This is a required course for the Workplace Health and Safety Manager Certificate Program.</p>	Occupational & Environmental Management
161HSD101	169911	3	Health and Safety Refresher for Hazardous Waste Workers - 8 Hours	<p>This course provides hazardous waste-site employees and supervisors with the annual refresher training in health and safety for hazardous waste workers. Current topics include: chemical and oil spill cleanup, animal feeding operations, personal safety, and urban survival, marijuana gardens, biological hazards, heavy equipment, heat illness prevention and heavy metals. New case studies and exercises accompany each module. This course meets requirements established by OSHA for training under the Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) 29 CFR 1910.120(e) (8) and the equivalent California Standard 8 CFR 5192 (e) (8). Participants should first complete the 40-Hour Health and Safety Training for Hazardous Waste Workers.</p>	Occupational & Environmental Management
163HSD533	311320	12	Bloodborne and Airborne Pathogens	<p>Learn best practices and industry standards for reducing occupational exposure to bloodborne and airborne pathogens in your workplace. Examine approaches for identifying and selecting engineering control devices and safer work practices in a variety of occupational settings. Gain an understanding of Cal/OSHA Bloodborne and Airborne Pathogens Standards, and review examples and descriptions of a variety of new products and devices. There will be ample opportunity for questions, answers and discussion.</p>	Occupational & Environmental Management

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161HSD554	360980	1	Introduction to Chemical Hazards	<p>Proper management of hazardous materials is vital to minimizing potential health and/or environmental damage. Improve your understanding of the underlying health and environmental impacts of chemical hazards by reviewing the toxic effects of materials and the basic mechanism of action of classes of toxic agents. Examine:</p> <ul style="list-style-type: none"> <li>Basic chemical principles and definitions</li> <li>Important physical characteristics, such as physical states of chemicals, solubility, and vapor pressure and density</li> <li>Common hazardous properties, such as flammable and explosive agents</li> <li>Corrosive effects</li> </ul> <p>Discuss the use of occupational and environmental thresholds and criteria. Case studies demonstrate how these principles apply to actual situations. Those with limited scientific training who plan to take more advanced health and safety or environmental health courses, such as Industrial Hygiene, will benefit. This course is an elective in the Workplace Health and Safety Certificate Program and a required course in the Environmental Management for Industry and Facilities Professional Concentration.</p>	Occupational & Environmental Management
161HSD599	365480	1	Workplace Health and Safety Online Information Session	<p>Please join us in this online webinar to explore career opportunities in workplace health and safety and environmental compliance. If you are seeking a career in safety management, environmental management, loss control, risk assessment, hazardous waste work, emergency management, construction, manufacturing, workers compensation, ergonomics or hazardous materials management, this free information session can provide the answers you are looking for.</p> <p>You will hear from industry professionals, instructors and staff who have an array of experience in environmental, health and safety management. Discover how UC Davis Continuing and Professional Education's courses and programs can help advance your career or provide you with a new career. We offer:</p> <ul style="list-style-type: none"> <li>Workplace Health and Safety Manager Certificate Program</li> <li>8-hour HAZWOPER training</li> </ul> <p>A question and answer session will be included.</p>	Occupational & Environmental Management
161HSD502	378900	3	Industrial Safety Hazard Control	<p>Expand your understanding of industrial safety hazard control by learning to identify and assess hazards in the workplace. Learn to recognize priority hazards as well as strategies for removing them. Discover how to use regulations as tools to identify and control hazards. Examine case studies and learn from the field, then brainstorm potential solutions to real-life problems.</p> <p>This is a required course for the Workplace Health and Safety Manager Certificate Program.</p>	Occupational & Environmental Management
161SWE126	383180	4	Health and Safety Training for Hazardous Waste Workers - 24 hour	<p>Learn about hazard awareness, waste regulations and exposure; medical monitoring; health and safety planning, laws and rights; personal protective equipment, decontamination, emergency response, and site characterization and control as required by 29 CFR 1910.120(e) (3), (8) CCR 5192 in California) and OSHA's Hazardous Waste and Emergency Response training standard (HAZWOPER). This course is meant for workers who:</p> <ul style="list-style-type: none"> <li>Enter hazardous waste sites only occasionally for a specific limited task (i.e., groundwater monitoring, land surveying or geo-physical surveying)</li> <li>Are unlikely to be exposed over permissible exposure limits</li> <li>Work regularly in areas monitored and fully characterized as having, under permissible exposure limits, and where respirators are not necessary</li> </ul> <p>Participants receive a certificate upon successful completion.</p> <p>Please note: Those required to characterize a space, monitor for contaminants or whose jobs exceed the requirements of 24-hour training should instead take Health and Safety Training for Hazardous Waste Workers - 40 hour.</p>	Occupational & Environmental Management
163HSD573	385090	14	Environmental Auditing	<p>Learn the key concepts involved in conducting an environmental audit. Topics include the purposes of audits and assessments, audit planning and program design, and pre-audit activities. Examine how to conduct audit interviews and inspections, evaluate management systems and learn techniques for reporting your audit findings. This is an elective in the Environmental Management for Industry and Facilities Professional Concentration.</p>	Occupational & Environmental Management
161HEA120	390140	1	UCOP Risk Summit	DNP	Occupational & Environmental Management
161HSD504	500129	1	Industrial Hygiene Sampling and Monitoring Instruments	<p>In this overview, you will learn about the theories, techniques and procedures associated with the use of instruments to measure air contaminants and physical agents, such as noise, heat and related exposures. Designed specifically for those responsible for employee safety and health, this course includes lectures and hands-on laboratory exercises addressing the methods and procedures of using common industrial hygiene monitoring instruments, sample collection and laboratory analysis, and interpretation of results. The limitations of these techniques will also be discussed. This is a required course for the Workplace Health and Safety Manager Certificate Program.</p>	Occupational & Environmental Management
161HSD503	500130	5	Introduction to Industrial Hygiene	<p>This overview provides an introduction to the science of industrial hygiene, including the process of recognition, evaluation and control of occupational health hazards. Learn methods to anticipate and recognize such hazards, including basic principles of toxicology, occupational health hazards (e.g., exposure to chemical agents and dusts), biological agents (e.g., allergenic and infectious diseases), and exposures to physical agents (including noise, radiation, heat and vibration) are addressed. Examine the general concepts on measuring and evaluating exposures to these agents, and how such exposures are controlled by personal protective equipment and engineering methods. Designed for individuals responsible for occupational safety and health, this is a required course for the Workplace Health and Safety Manager Certificate Program.</p>	Occupational & Environmental Management
161AR8280	500264	5	How to Comply with California's Heavy-Duty Diesel Vehicle Regulations		Occupational & Environmental Management
161HEA100	500927	18	40-Hour Hazardous Waste Operations (HAZWOPER) Training	<p>Professionals involved with hazardous waste operations, where potential exposure to regulated hazards exist, will learn how to maintain compliance with 29 CFR 1910.120 and 8 CCR 5192 regulations. Topics covered include chemical and physical hazard recognition, hazard controls, selection of personal protective equipment, air monitoring, respiratory protection, site control, decontamination, field-specific operations (drum handling, trenching and excavation, etc.) and an introduction to emergency response. Classroom instruction and a field exercise inform the use of personal protection equipment, monitoring, sampling and decon practices. Participants will receive a printed copy of the PowerPoint presentation and a CD containing the course manual. Individuals who are medically evaluated and present a physician's written consent and bring their personal respirator will receive a complementary qualitative fit test.</p>	Occupational & Environmental Management
161TPP101	500931	2	Tribal Pesticide Program Council - FY2016 (EVTPO1)		Occupational & Environmental Management
161PSM803	501082	4	Pesticide Educational Resources Collaborative - FY2016 (EVPERO1)		Occupational & Environmental Management
162HSD513	501232	5	Emergency Preparation and Management	<p>Is your organization prepared for emergency situations? Does it comply with state and federal laws that require actionable and current emergency response plans? Gain insight into being more proactive in emergency preparedness by developing strategies to help prevent and mitigate hazards, as well as for response and recovery efforts. Discuss key components of emergency response plans and management techniques common to all emergency situations, such as:</p> <ul style="list-style-type: none"> <li>Natural disasters</li> <li>Fire</li> <li>Security threats</li> <li>Hazardous materials incidents</li> </ul> <p>Expand your understanding with an overview of relevant local and federal government response plans and agencies, the Incident Commands System (ICS), disaster notifications, crisis management skills, decision making under pressure, effective communication techniques, and media and public relations factors. This course is required for the Workplace Health and Safety Manager Certificate Program.</p>	Occupational & Environmental Management
0	501415	4	Tribal Pesticide Program Council - FY2017 (PSTPO2)		Occupational & Environmental Management
164HSD500	502690	8	Environmental Management and Sustainability Online Information Session	<p>Join us for this free online webinar to learn how professional education programs from UC Davis Extension can help you excel at your work, earn a promotion or switch careers.</p> <p>Hear from instructors, explore course content and learn about financing opportunities with UC Davis Extension; top quality Environmental Management and Sustainability courses and professional concentrations in topics such as:</p> <ul style="list-style-type: none"> <li>Environmental and Toxics Laws and Regulations</li> <li>Environmental Compliance</li> </ul> <p>Enroll today!</p>	Occupational & Environmental Management
163PSM103	502734	1	Pesticide Educational Resources Collaborative - FY2017 (PSPERO2)		Occupational & Environmental Management
172TPP101	503937	13	Tribal Pesticide Program Council (TPPC) - FY2020 (PSTPO5)		Occupational & Environmental Management

Custom Section Number	Code	No. of Offerings	Course Name	Course Description	Program Office
173HSD581	504154	9	Industrial Ergonomics	This interactive, two-day course will emphasize practical problem-solving approaches to ergonomics in various non-office settings, including utilities, local and state governments, and other industrial activities. Evaluation techniques for workplace layout, lifting and other manual material handling activities, and tool selection and design will be demonstrated. Real-world examples of control strategies to reduce or eliminate risk factors will be illustrated.  At the conclusion of this course, participants will be able to discuss and demonstrate methods for evaluating a variety of industrial work settings and will be able to use those principles and techniques to make appropriate ergonomics recommendations to fit their specific work environments.  Please note: this course will not cover office ergonomics.	Occupational & Environmental Management
173PSM102	504452	1	Pesticide Educational Resources Collaborative - FY2018 (PSPER03)		Occupational & Environmental Management
182TPP101	504863	20	Tribal Pesticide Program Council - FY2019 (PSTPP04)		Occupational & Environmental Management
173PME201	504872	11	Pesticide Education for Medical Professionals - FY2018 (PSPME01)		Occupational & Environmental Management
182HSD540	504926	2	Fall Protection in the Workplace	Falls from elevation are a leading source of fatal and disabling injuries. Different trigger heights, regulatory requirements and types of work require different approaches and types of protection. This class will consider a variety of methods for protecting from the risk of falls: guardrails, hole covers, nets, fall arrest, fall restraint, fall positioning, controlled access zones, and other alternative methods. Planning for accidental falls and rescue/retrieval practices are also a necessary part of fall protection and will be reviewed. Examples of equipment and hands on practices will be covered, and participants will engage in scenario exercises. The class is designed to provide knowledge and develop skills in the analysis of fall hazards, the selection and application of best practices and equipment and means to prevent falls.	Occupational & Environmental Management
183PSM102	505490	1	Pesticide Educational Resources Collaborative - FY2020 (PSPER05)		Occupational & Environmental Management
183PME201	505566	15	Pesticide Education for Medical Professionals - FY2019 (PSPME02)		Occupational & Environmental Management
1645NR312	503020	3	Climate Change: Why the Earth is Getting Hotter	Discuss the historical and present temperature data of the earth, the concept of an energy balance for the earth and the importance of various atmospheric gasses in controlling the earth's temperature (i.e., greenhouse and non-greenhouse gases, ozone hole). We will also consider anthropogenic and nonanthropogenic forcing that modifies the energy balance for the earth, the pros and cons of climate models and an overview of the ongoing vigorous debate about climate change. Course content is aimed at the nonspecialist, but will contain some technical information that will be presented in terms understandable to the general public.	Senior Programs
1645NR310	503021	1	The Future of Transportation: Are Airplanes and Autonomous Vehicles really Sustainable?	Transportation engineers and planners have long classified our complex transportation system as vehicles versus users, or by mode (cars, airplanes, trains, buses, bikes, etc.). The increasingly global system is a labyrinth of public and private actors, high and low technology. There is widespread agreement that the current system is not sustainable in terms of equity, economy or environment. While the potential applications of technology to improve our transportation system are numerous, there is little agreement on which solutions are reasonable to pursue. This course provides an outline of the transportation system, its resiliency (or lack thereof) and its environmental impacts. It then delves into consideration of the future forecasts for people, travel, fuels and vehicles. The course touches on the role of community land use patterns, the sharing economy and the potential bounds on our mobility.	Senior Programs
1645NR319	503023	1	UC Davis Sierra Foothill Research Center Tour	The oak woodland rangelands, which encircle California's Central Valley, provide watersheds for the state's critical water supplies. They are also habitat for diverse bird species and other wildlife, and offer open space and viewsheds to the public. Most rangeland is privately owned and thus must offer some economic return to its owners. How do landowners achieve financial return while maintaining open space and other societal values on these lands? Travel by bus to a large rangeland research center in the Yuba County foothills where University of California researchers have been studying these questions since the 1960s. Tour the center and learn about current and past research. During our bus ride, the group will hear discussion of some of the Sacramento Valley's diverse crops and the agricultural changes that take place as rich valley soils give way to the shallower soils and rougher terrain of the foothills.  Note: Bus trip to Yuba County. Meet at UC Davis Extension, 1333 Research Park Dr., Parking Lot 81, at 8:00 a.m. to board the bus. Participants must be able to get on the bus on their own and walk through the venue and surrounding grounds unassisted. This may include walking on gravel and uneven ground and standing for long periods of discussion. Those using assistive devices or mobility aids are encouraged to contact the OLLI office prior to registering for this course to discuss the navigability of the tour site. Course fee includes catered lunch at the research center.	Senior Programs
1645NR322	503024	1	Wine and Geology: What Makes Napa Valley Wines so Special?	Wine grapes are especially sensitive to the soil in which they are grown and the climatic conditions under which they ripen. Because of its complex geologic history, many different types of rocks are present in the Napa Valley and these rocks weather into an even broader range of soil types. In addition, the unique topography of the greater Bay Area produces large changes in climate over short distances. Explore how all of these factors come together to create a greater diversity of high-quality wines in the Napa Valley than in any other wine-growing region of comparable size.	Senior Programs
1645NR610	503026	1	California Wheat Commission Milling/Baking Lab Tour	Bread is a staple in practically every world culture. Do we take it for granted? Learn more about the California Wheat Commission, including white and wheat quality and blending and baking quality standards. Visit the commission's wheat quality laboratory and hear about testing performed at the lab. Learn about the different wheat classes available in the U.S. wheat market, how prices are set and who U.S. wheat sources are. Discussion will include the wheat-breeding program at UC Davis. Limited enrollment.  Note: Participants must drive themselves to Woodland to meet at the laboratory. A map will be sent before the class. This tour will require moderate walking and long periods of standing for discussion.	Senior Programs
1645NR612	503027	1	Capitol Park Tree Tour	The California State Capitol grounds are home to a splendid assortment of temperate and semi-tropical zone tree species. It is one of the few gardens where you'll see Northern pines rubbing shoulders with gorgeous oaks; from the jungles of the Southern Hemisphere. The collection is also home to some of the largest trees of their species in existence, such as the Deodar Cedar and California Fan Palm. Warren Roberts, superintendent emeritus of the UC Davis Arboretum, will be our guide and the storyteller for this special walking tour of the Capitol Park grounds. Limited enrollment.  Note: Bus trip to Sacramento. Meet at UC Davis Extension, 1333 Research Park Dr., Parking Lot 81, at 9:30 a.m. to board the bus. Participants must be able to get on the bus on their own and walk for prolonged periods through the park grounds unassisted on a variety of walking surfaces. Tour will include long periods of standing for discussion and may include climbing steps. Wear sturdy, comfortable walking shoes. Participants will have time to visit any of several nearby restaurants for a no-host lunch before the return trip to Davis.	Senior Programs
1645NR620	503029	1	Putah Creek: Flowing Through Our Communities and Lives	Explore our local watershed and learn about the history of Putah Creek and the ongoing restoration and enhancement projects being enacted. The Lower Putah Creek Coordinating Committee and Putah Creek Council will introduce you to this local waterway during a morning presentation in Winters. After a no-host lunch break, the group will enjoy a two-hour tour of restoration projects along the creek. Limited enrollment.  Note: Participants must drive themselves to the Winters Community Library Parsons Room. A map will be sent before the class. There will be a break for a no host lunch at nearby restaurants. You must be able to drive to various outdoor sites along the waterway and negotiate a variety of walking surfaces with a potential for climbing short embankments. There will be uneven ground. Please wear sturdy, comfortable shoes and be prepared to walk and stand for long periods of discussion.	Senior Programs
1645NR623	503030	1	Reimagining the UC Davis Arboretum Waterway	What to do about the Arboretum waterway? This is a question that has been asked for the last 30 years. The historic North Fork of Putah Creek was cut off from the rest of the stream in 1874. In the 1950s, it was reshaped into the long, shallow pond that it is today. As essential infrastructure for the UC Davis storm water system, the waterway serves a very distinct purpose; however, it can be so much more. Hear about the plans to make the waterway into an urban wildlife area, to flow again, and turn what has been an overlooked resource into a regional jewel. Hear about the new designs for the waterway, the timeline for implementation and what this will mean for residents in the region.	Senior Programs
1745NR611	504576	1	UC Davis Raptor Center Tour and Hawk Walk	Learn how to identify raptors by their unique morphological features. We will concentrate on the raptors that are either residents or visitors to our local area in a two-hour lecture. Then join Jo and walk along the levee for one hour to identify local raptors and other wildlife. Wear comfortable clothes and walking shoes. Bring drinking water and binoculars. Course cost includes entrance fee. A map to the Raptor Center will be sent to you in advance of the class. Limited enrollment.  Suggested reading: The Sibley Guide to Birds, David Allen Sibley, Knopf Publishing	Senior Programs
	<b>Total</b>	<b>739</b>			