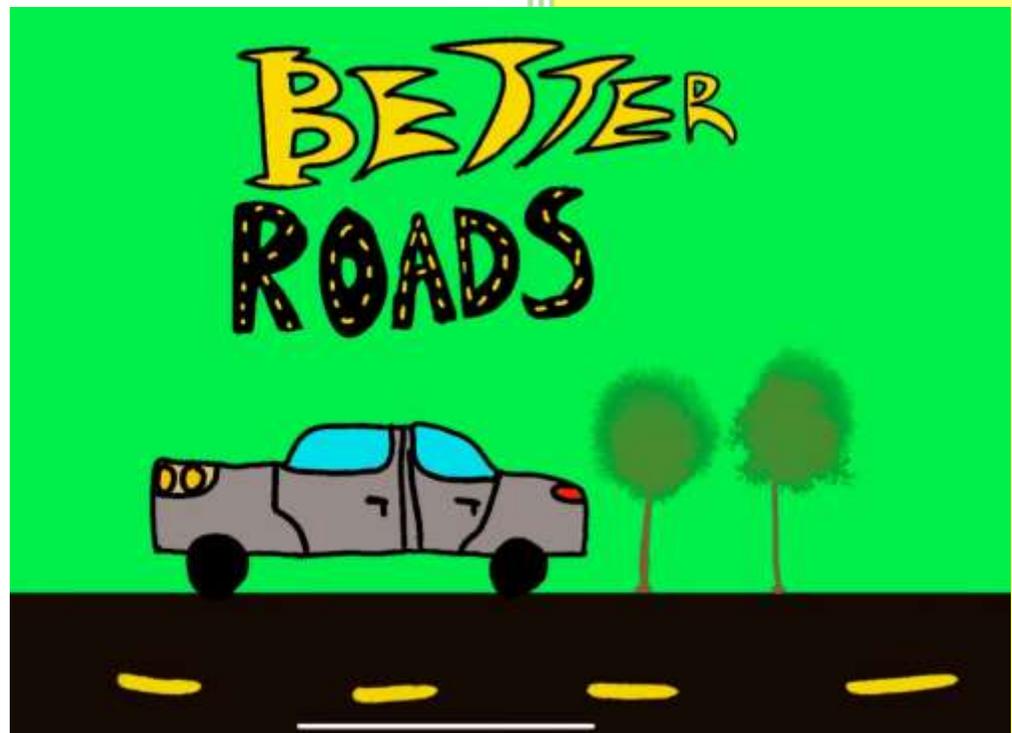


COURSE CATALOG



California Asphalt Pavement Association
Technical Training Classes
www.calapa.net

About CalAPA

The California Asphalt Pavement Association (CalAPA), founded in 1953, is a non-profit trade association representing the asphalt industry in California. Members of the association include asphalt producers, refiners, paving contractors, suppliers, engineering firms, testing labs, equipment manufacturing companies and others that are part of the industry.

This course catalog was developed to assist those who are in need of technical knowledge about asphalt to understand the different types of courses that are available through CalAPA and what each class covers.

Disclaimer: The material contained in this course catalog and in classes offered by CalAPA is meant for educational purposes only and in no way is a substitute or amendment for the specifications and contract requirements language on a public works project or a private construction project, nor is it intended to replace sound engineering judgment or practical common sense on the part of public officials or private industry. Further, no warranties are made express or implied by the educational information contained herein, and the authors emphasize that it is the responsibility of the specific various parties to a public works contract, or a private construction contract, to ensure that all legal, technical and safety requirements of the contracts are met.

Acknowledgements: The CalAPA Technical Training offerings are a result of years of development and contributions by CalAPA members under the guidance of the CalAPA Board of Directors and the CalAPA Technical Advisory Committee, as well as CalAPA instructors and agency personnel. The Executive Director of CalAPA is Russell W. Snyder, CAE. The Technical Director of CalAPA is Brandon Milar, P.E. The Regional Director of CalAPA is William Knopf. The Co-Chairs of the CalAPA Technical Advisory Committee are Tim Denlay with Knife River and Tracy Zubek with DeSilva Gates. The immediate past Co-Chair of the CalAPA Technical Advisory Committee is Toni Carroll with Graniterock.

About the cover: The cover artwork for this publication was created for CalAPA by Cameron You of West Sacramento, Calif.

About Professional Development Credit: The California Asphalt Pavement Association has met the standards and requirements of the Registered Continuing Education Program (RCEP) for registered civil engineers and land surveyors, and is an approved regional provider for the West Region (AZ, CO, ID, NM, MT, UT, NV, WY, AK, CA, HI, OR & WA). RCEP is a comprehensive registry of continuing education providers that have demonstrated adherence to high-quality, effective practices in the development and delivery of professional education activities for engineers and surveyors. Credit earned upon completion of selected classes in this program will be reported to RCEP.net. Certificates of Completion will be issued to all participants via the RCEP.net on-line system. These certificates for credit are separate from the certificate of completion issued to all attendees by CalAPA. Complaints regarding RCEP registered providers may be addressed to RCEP at 1015 15th St., NW, 8th Floor, Washington, D.C. 20005, or via the RCEP website at: www.RCEP.net.

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ABOUT THE CALAPA TECHNICAL TRAINING COURSE CATALOG

CalAPA offers training classes on asphalt pavement specifications, design, testing, acceptance, paving best practices and more. This catalog is intended to provide an overview of the classes CalAPA presents most frequently, content covered, and recommended prerequisites, if any. All class attendees receive a reference booklet and certificate of completion. Visit the CalAPA website for the latest list of classes and schedule. CalAPA also offers classes “on-demand” for employers who wish to host a class at their facility for their own employees. Contact CalAPA at (916) 791-5044 for additional details.

All classes are designed for a classroom setting or delivered via “virtual” web format. Unless otherwise noted, there is no “hands-on” component for the classes listed. CalAPA members receive discounts on all CalAPA technical training classes.

Asphalt Core Series

- ACS101 – Asphalt Pavement 101 (in person) *
- ACS102 – Asphalt Pavement 101 (web) *
- ACS110 – Quality Asphalt Paving (in person) *
- ACS111 – Quality Asphalt Paving (web) *

Quality Focus Series

- QFS210 – Principals & Best Practices of Asphalt Plant Production (in person)
- QFS211 – Principals & Best Practices of Asphalt Plant Production (web)
- QFS212 – Troubleshooting HMA Production (in Person)
- QFS213 – Troubleshooting HMA Production (web)
- QFS220 – Understanding the asphalt Job Mix Formula (in person)
- QFS221 – Understanding the asphalt Job Mix Formula (web)
- QFS230 – Understanding Caltrans Section 39 Asphalt Specifications (in person)
- QFS231 – Understanding Caltrans Section 39 Asphalt Specifications (web)
- QFS240 – Essentials of Asphalt Pavement Smoothness & Best Practices (in person)
- QFS241 – Essentials of Asphalt Pavement Smoothness & Best Practices (web)
- QFS250 – Asphalt Pavement Forensics (in person) *
- QFS251 – Asphalt Pavement Forensics (web) *

Specialist Series

- SS301 – ProVal Pavement Software Workshop (in person)
- XXXXX – PaveXpress (in person & web) **
- XXXXX – Balance Mix Design (in person & web)
- XXXXX – Porous Asphalt Pavements (in person & web) **
- XXXXX – Managing Mix Production (in person & web) **
- XXXXX – Parking Lot Paving Essentials (in person & web)**

* These courses are required as part of the CalAPA Quality Asphalt Paving Certificate program (web or in-person) plus one elective course chosen from the list above.

** Class in development.

ASPHALT CORE SERIES

Asphalt Pavement 101

Prerequisite: None. Some familiarity with roadway construction helpful.

Course description: An introductory class that covers the basics of asphalt pavements, from materials properties, design, specifications, production, placement, testing, acceptance and maintenance.

Key take-aways: The relationship and importance of temperature guidelines for Hot Mix Asphalt paving, including Warm Mix Asphalt; Typical pavement structure and terminology, including the Superpave mix design system; The importance of achieving optimum density in an asphalt mat; Best practices for efficient trucking and hauling operations; In-depth understanding of the benefit of using Recycled Asphalt Pavement (RAP) for economic and environmental benefits; A basic understanding of specifications used by state and local public agencies to ensure project success.

Length of course: 4 Hours

Who should take this course: Private industry and public agency personnel new to asphalt pavements, including engineers, inspectors, materials technicians and maintenance personnel. The class, which is constantly updated with new information, is appropriate for those with more experience as a refresher course.

Quality Asphalt Paving

Course description: A “boots on the ground” class geared for paving crews and others who want to understand proper asphalt paving techniques. The class covers best practices for asphalt paving and patching, as well as proper use of equipment, trucking, safety and inspection.

Prerequisite: None. Some familiarity with roadway construction helpful.

Key take-aways: The importance of coordinating plant, trucking and laydown production; How different types of trucks or equipment can assist or damage the quality of the finished product; The different forces on the paver screed and how that affects the quality of the mat; Types of grade references and when automatics should or shouldn't be used; How environmental variables affect the ability to achieve desired densities; The influence of roller speed as it applies to compaction; Proper techniques with regard to raking and joints; Proper “pic spacing” of cold-plane grinders and why that is important; Tack coats and interlayers – what they are and how to use them.

Length of course: 4 hours

Who should take this course: Workers employed in the public or private sector, and their supervisors, who perform work in the field paving asphalt or conducting maintenance on asphalt pavements.

QUALITY FOCUS SERIES

Essentials of Asphalt Pavement Smoothness & Best Practices

Prerequisite: Some experience in asphalt paving; “Completion of Asphalt Pavement 101” and “Quality Asphalt Paving” strongly recommended.

Course description: An overview of the latest asphalt pavement smoothness specifications, technology and best practices for achieving a smooth asphalt pavement project, which is particularly important for achieving incentives under new state specifications.

Key take-aways: In-depth review of the current state of asphalt pavement specifications and acceptance criteria; Best practices for paving to achieve optimum smoothness, including planning, equipment operation, paving techniques and testing.

Length of course: 4 hours

Who should take this course: Engineers, contractors, materials technicians, paving superintendents, foremen and paving crew employees.

Understanding Caltrans Section 39 Asphalt Pavement Specifications

Prerequisite: Some experience in asphalt paving design, construction and inspection; Completion of “Asphalt Pavement 101” and “Quality Asphalt Paving” strongly recommended.

Course description: An overview of the section of the Caltrans specifications devoted to Hot Mix Asphalt pavement design, inspection and acceptance.

Key take-aways: Understanding the organization of the Caltrans specifications as they relate to asphalt pavements; Recent changes to the specifications with regard to mix design, construction and acceptance; Understanding the interplay between the specification, test methods, construction manual guidance and other sources of information.

Length of course: 2 hours

Who should take this course: Engineers, materials technicians and others who perform work or conduct inspections on asphalt pavement public works projects.

Understanding the Job Mix Formula

Prerequisite: Some experience in asphalt pavement design, production and construction. Completion of “Asphalt Pavement 101” and “Quality Asphalt Paving” strongly recommended. Completion of “Understanding Caltrans Section 39 Asphalt Specifications” is suggested.

Course description: Any successful asphalt pavement project begins with a Job Mix Formula, a detailed recipe for making Hot Mix Asphalt to exacting standards to meet the specifications and design expectations of the project owner. The JMF must demonstrate that, once full-scale production begins, laboratory conditions can be replicated in the field during paving operations. The course provides an overview of the purpose of a JMF, challenges and tips to overcome them, terminology, various forms, checklists and tests that may be part of a JMF.

Key take-aways: Overview of JMF concepts and best practices; Key terminology and test methods; logistical challenges and ways to overcome them; troubleshooting problems with a JMF; How to avoid costly delays.

Length of course: 4 hours

Who should take this course: Materials engineers, technicians and others who need to understand the key concepts that go into creation of a Job Mix Formula.

Asphalt Pavement Forensics

Prerequisite: Some experience in asphalt pavement design, production and construction. Completion of “Asphalt Pavement 101” and “Quality Asphalt Paving” strongly recommended.

Course description: When asphalt pavements fail, it is important to understand why so that the proper remedy can be applied. This course covers the myriad of problems that can contribute to pavement failures, and a step-by-step approach (forensic engineering) to determining the cause and developing a solution.

Key take-aways: Understanding the principals of asphalt pavement forensics; Understanding the challenges inherent in asphalt pavement design and construction, and recommendations on how to overcome the challenges; Focusing on sub-grade, sub-base, pavement cross-section specifications, and asphalt production and construction techniques that are needed for successful asphalt pavement performance; The course is applicable to roadways, airfields, and commercial/industrial pavements.

Length of course: 4 hours

Who should take this course: Newer as well as experienced engineers, inspectors, contractors and material suppliers.

SPECIALIST SERIES

Principles & Best Practices for Asphalt Plant Production

Prerequisite: Some experience in asphalt plant operations. Completion of “Asphalt Pavement 101” and “Quality Asphalt Paving” strongly recommended.

Course description: An in-depth look at proven best practices to optimize asphalt plant operations, including troubleshooting and best practices.

Key take-aways: Best practices for cold feed blending; Asphalt storage and asphalt metering; Aggregate drying; Dust collection and fines return; Recycle mix production; Drum-Mix blending; Batch plant blending; Finished product storage and load-out.

Length of course: 8 hours

Who should take this course: Asphalt plant operators with intermediate to advanced experience.

Troubleshooting HMA Plant Production

Prerequisite: Some experience in asphalt plant operations. Completion of “Asphalt Pavement 101” and “Principles & Best Practices for Asphalt Plant Production” strongly recommended.

Course description: This class focuses exclusively on several HMA quality challenges that are regularly experienced during a project, including gradation problems, asphalt content issues, voids consistency and segregation. The instructor will cover identifying the various issues and best practices for resolving them quickly.

Key take-aways: Identifying inconsistency in asphalt mixes during production and determining likely sources of the inconsistencies, and steps to take to resolve them quickly. The class encourages participants to “customize” their experience by bringing up specific questions germane to their own plants and getting answers to those questions.

Length of course: 4 hours

Who should take this course: Asphalt plant operators with intermediate to advanced experience.

ProVAL Pavement Software Workshop

Prerequisite: Familiarity with state and federal asphalt pavement specifications, including pavement smoothness targets and pay factors. Participants must bring a laptop to the class for hands-on demonstrations utilizing the ProVAL software.

Course description: An in-depth training on the latest version of ProVAL, a pavement smoothness software used on Caltrans projects. look at proven best practices to optimize asphalt plant operations, including troubleshooting and best practices.

Key take-aways: Understand the current version of the Profile Viewing and Analyzing software (ProVAL); Refresh some of the fundamentals of pavement profiling and analysis methods; Understanding the

advantages, limitations and pitfalls related to analyzing and interpreting pavement profiles; Provide hands-on experience utilizing the ProVAL software.

Length of course: 8 hours

Who should take this course: Contractors and public agency personnel who are involved in asphalt paving utilizing smoothness specifications and incentives.

INSTRUCTORS

Skip Brown

Norman “Skip” Brown, is owner of Asphalt Consulting Services and former longtime owner of an asphalt pavement construction company based in Sacramento who has personally supervised the placement of more than 4 million tons of asphalt in his career.

George Chang

George Chang, P.E., Ph.D., is Director of Research for the Transtec Group, the principal developer of the ProVAL pavement smoothness software. He has conducted training classes for the software around the United States.

Brandon Milar

Brandon Milar, P.E., is Director of Technical Services, California Asphalt Pavement Association. He manages all technical aspects of the association, interacts with local, state and federal agencies and academia, and is principal staff to the CalAPA Technical Advisory Committee. He also serves on the Caltrans-industry Pavement & Materials Partnering Committee.

Tim Murphy

Tim Murphy is owner, Murphy Pavement Technology and is a nationally known consultant and expert in asphalt pavements who has conducted training classes around the United States on asphalt pavement forensics and other asphalt-related topics.

Greg Reader

Greg Reader is a longtime asphalt plant Quality Control manager and consultant and is currently the manager of the Sacramento materials laboratory of G3Quality.

Mike Robinson

Mike Robinson, P.E., is an asphalt pavement consultant and longtime employee of highway construction companies and the California Department of Transportation.

Roger D. Smith

Roger D. Smith is a private consultant and former Caltrans senior materials engineer and executive with the California Asphalt Pavement Association as well as regional engineer with the Asphalt Institute.

Terry “TJ” Young

Terry “TJ” Young is a nationally recognized expert in the operation of asphalt plant equipment and conducts training sessions nationwide on asphalt plant optimization and best practices.