



Transportation Engineering Training Program (TETP)

## What's New?

### Transportation Engineering Training Program (TETP)

In 2006, the TETP team started the initiative to develop training courses for CDOT engineering staff. The first course to be delivered was the 5-day Transportation Core Curriculum (TCC) suite of classes. In February 2017, TETP will be celebrating the 10-year anniversary of the TCC course. During this time over 500 CDOT staff have taken the course and expanded their network of fellow CDOT contacts.

In celebration of this anniversary, the TETP is excited to announce its schedule of training classes for fiscal year 2017!

#### Instructor-led Classes

##### Design

- Applied Roadway Design (Updated 2017)
- Context Sensitive Solutions
- Critical Path Method (CPM) – Design (Updated 2017)
- Work Hour Estimation (Updated 2017)
- Interchange Planning & Design
- CDOT Lighting Design
- Project Development Manual
- Project Scoping (Coming 2017)
- Reading Structural Plans
- Transportation Core Curriculum
- Writing for Engineering Professionals

##### Construction

- Construction Project Administration
- Critical Path Method (CPM) – Construction (Updated 2017)
- Disputes and Claims Resolution
- Managing Contract Time

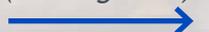
#### eLearning Classes

##### Design

- Budget Management
- Cost Planner Tool / Risk Management (Coming 2017)
- Design Project Administration
- Plan Checking
- Specifications Writing and Development (Coming Soon)
- Survey Basics

##### Construction

- Change Orders (Coming 2017)





Construction Manual - Section 100  
Construction Project Financials (Form 65)  
*(Coming Soon)*  
Force Accounts *(Coming 2017)*  
Materials Technician Training *(Coming 2017)*

### Project Management Advancement Program (PMAP)

CDOT Project Managers are masterful coordinators of what sometimes seems like the impossible. If you've ever wondered how they do it and are interested in enhancing your project management skills, then PMAP is for you. PMAP is a certification program designed specifically for CDOT that leverages project management best practices from PMI, FHWA, and most importantly, CDOT. The PMAP curriculum helps teach you the CDOT way to successfully manage and deliver a project.

For more information please visit <http://intranet.dot.state.co.us/employees/Training/pmap>



emphasizes quality lighting for motorists by encouraging effective lighting methods and designing for optimal visibility, minimizing glare, increasing uniformity and reducing light pollution. By the end of the course, Traffic, Design and Project Engineers will be able to identify highway lighting methods and understand lighting design concepts, guidelines, state law, standards and specifications that are critical to successfully develop lighting plans for transportation projects.

## Class Descriptions

### Applied Roadway Design (4-day course - \$1050)

PEs and IETs with 0-5 years of experience can benefit from Applied Roadway Design, a 4-day course where participants apply CDOT's roadway design principles through true-to-life activities and exercises. During this course, attendees will practice using the CDOT "Roadway Design Guide," AASHTTO's "Greenbook," and other resources to develop design criteria and use that criteria in designing a roadway.

### Budget Management (eLearning)

In this online course, Project Managers and Engineers will get a basic understanding of project construction budgets, resource allocation, and the budget management process during each phase of construction. The course introduces the software programs used to manage different parts of the financial and planning process as well as the STIP, key budget terms, overs and unders and indirect costs.

### CDOT Lighting Design (2-day course - \$350)

The Lighting Design for CDOT Projects course

### Construction Change Orders (eLearning)

For Project and Resident Engineers involved with change orders for construction projects, this course uses examples of change orders, from simple to complex, to explain the who, what, why, and when of change orders. It also explores how change orders and explanation letters need to be written and processed to effectively modify the contract between CDOT and the construction contractor, including Federal and State regulations and requirements.

### Construction Project Administration (3-day course - \$460)

The Construction Project Administration specialty course introduces best practices in project administration for CDOT project managers. Best practices in understanding the contract and its implications, facilitating meetings, conducting field inspections, completing and reporting paperwork, and accessing and interpreting documentation will be presented. Includes prerequisite eLearning course "Construction Manual - Section 100."

### Construction Manual - Section 100 (eLearning)

The CPA: Section 100 eLearning course introduces



the key subsections in the Section 100 Standard Specification. It addresses the basic rules and regulations of project administration and issues where the majority of conflicts and disputes on a project arise. This is a pre-requisite for the instructor-led Construction Project Administration course.

### Context Sensitive Solutions (1/2 day course - \$100)

This course is an introduction to the basic elements and principles of Context Sensitive Solutions. It provides the participants with the background and tools to work with a multi-disciplinary team to apply Context Sensitive Solutions to project design.

### Cost Planner Tool and Risk Management (eLearning)

The Cost Planner Tool was developed to assist CDOT in achieving accuracy, accountability, and consistency when developing cost estimates during the planning and scoping phases of project development. This course explains the basics of cost estimating and using the tool when planning, scoping and designing projects.

The Risk Management course describes how risks, and managing those risks, impacts cost estimating. Participants will learn how to use the tools available to identify, track and plan for risks during a project.  
BD

### CPM Scheduling for Design (1-day course - \$100)

Scheduling and manipulating CDOT design schedules in Microsoft Project 2013 can be a challenge. This course covers the fundamental techniques used to create and analyze a CPM

schedule, create a reasonable and achievable design and recovery schedule, create drawdown cost reports, and analyze a complex CPM schedule from the Design Engineer's perspective. Includes prerequisite eLearning course "MS Project 2013 Basics."

### CPM Scheduling for Construction (1-day course - \$100)

CDOT construction schedules in Microsoft Project 2013 require some specific skills to develop and manipulate. In this course, participants learn the fundamental techniques, create a reasonable and achievable construction schedule, incorporate contractors' schedules and updates, and analyze a complex CPM schedule from the Construction Engineer's perspective. Includes prerequisite eLearning course "MS Project 2013 Basics."

### CPM Scheduling: MS Project 2013 Basics (eLearning)

This online course presents the basic functions of Microsoft Project 2013 Scheduling software and its application to managing CDOT project schedules. In addition, participants will learn about the role critical path methodology plays in successfully managing project delivery.

### Design Project Administration (eLearning)

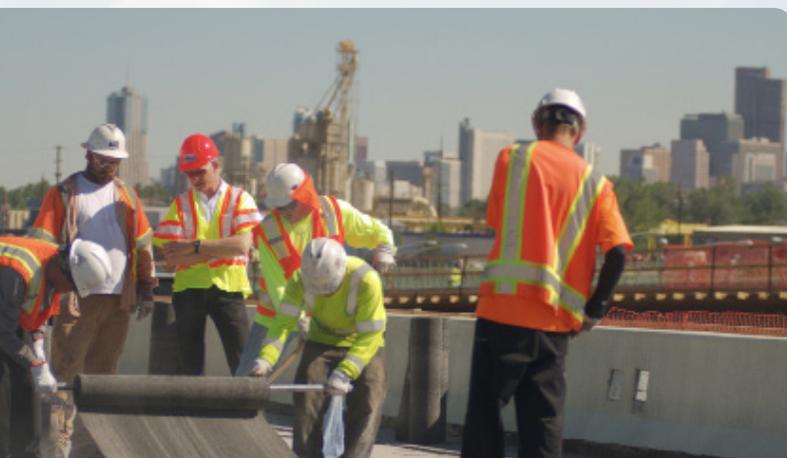
In this online course, new project designers and managers receive information and resources needed to effectively perform design project administration. This course serves as a resource tool that allows for easy access to information and items supporting the primary steps in the design process including scoping, FIR, FOR, and Ad.

### Disputes and Claims Resolution (1-day course - \$100)

This introductory course provides instruction on resolving disputes and claims according to CDOT specifications, using the Dispute Resolution Board and the Arbitration and Litigation process.

### Force Accounts (eLearning)

For Project and Resident Engineers involved in working with force accounts on construction projects, this course uses examples of force accounts, from simple to complex, to explain the who, what, why, and when of force accounts.





## Interchange Planning and Design (2-day course - \$350)

CDOT Geometric Design Engineers and Planners will learn about basic traffic operational and geometric design principles for various interchange types. The course covers the latest tools and techniques for planning and designing service interchanges and the process of efficient study for interchange effectiveness.

## Managing Contract Time (1-day course - \$100)

This course is an overview of how to manage contract time, designed for Project Managers and Project Engineers. It covers using CPM schedules to manage contract time and address delay issues on construction projects. There will be detailed discussions on issues that arise with an early completion date, how to handle a delay, float ownership, the benefit of using a baseline schedule, and the risks and benefits of certain actions. Includes prerequisite eLearning course "Managing Contract Time."

## Managing Contract Time (eLearning)

The online section of this course familiarizes learners with important information found in existing CDOT materials relating to managing contract time and addressing delays. Project Managers and Project Engineers learn about how to identify types of delays, establish contract time and determine when to use different contract types and methods.

## Professional Services Selection Panel Training

This 2 hour training course prepares engineers and project managers to be panel members for Professional Service's Selections. The course reviews state and federal statutes that govern the selection process. This is mandatory training for being on a selection panel.

## Plan Checking (eLearning)

A quality set of contract documents creates competitive bids and results in fewer disputes or claims. This course is designed to provide a basic understanding of how to improve plan quality by using an appropriate plan checking process. Participants will have the opportunity to review a set of plans that are ready for advertisement

and to cross check them with the specifications and engineer's estimate. Students will make use of the PS&E checklist and compare the advantages of different methods of checking plans. The course is segmented into 6 modules: Introduction to Plan Checking, Your Plan Checking Process, Checking the Plan Sheets, Pay Items, Special Provisions and Additional Plan Documents.

## Project Development Manual (eLearning)

The Project Development Manual is designed to support projects, provide effective management, and avoid common pitfalls. This course introduces the PDM and CDOT's specific policies and processes to ensure all projects are conducted consistently and efficiently.

## Construction Project Financials (Form 65) (eLearning)

This online course identifies and explores the Project Financials Statement, more commonly known as Form 65, and how you can identify, interpret and understand the financial status of your project, focusing on Post Award.

## Project Lifecycle Simulation (eLearning)

Project Lifecycle is a knowledge-level online simulation that places participants in an environment where they can experience tradeoffs that are often part of complex projects. Participants learn about important project lifecycle levers and drivers, and gain a deeper appreciation for how each CDOT functional area contributes to managing the complexities of a large scale project.



## Reading Structural Plans (2-day course - \$350)

This course prepares engineers, technicians and inspectors to read and interpret structural plans in order to provide design input, identification of design conflicts and constructability issues, and ensure construction compliance. Participants will use existing CDOT structural plans for exercises, activities, and group discussion.

## Specifications Writing and Development (eLearning)

Specifications, a critical part of any CDOT contract, communicate the procedures, materials, equipment, and payment terms needed to complete the work. This course introduces designers to the tools, processes, and best practices for creating specifications packages.

## Survey Basics (eLearning)

This course introduces the fundamentals of surveying as it relates to highway construction projects. Participants learn, in an online format, how to coordinate systems, survey plan sheet and survey data, how to verify project locations, and understand concepts, tools and technology of construction surveying.

## Transportation Core Curriculum

Transportation Core Curriculum brings together the various functions involved in a CDOT project to establish multi-disciplinary knowledge within CDOT's engineering work force, using facilitator presentations and group discussion and activities. This knowledge helps the decision making processes throughout a transportation project be more cost effective, timely, efficient, and responsive to CDOT's internal and external customers' needs. Includes prerequisite eLearning course "Project Lifecycle Simulation."

## Work-Hour Estimation (1-day course - \$100)

This course provides the fundamentals for developing work-hour estimates for both in-house and consultant staffed projects. Participants establish core knowledge on developing a detailed project scope of work using CDOT's Generic Scope of Work. Includes prerequisite eLearning course "Scope of Work."

## Work-Hour Estimation: Scope of Work (eLearning)

This online course provides the fundamentals for developing work-hour estimates for both in-house and consultant staffed projects. Participants establish core knowledge on developing a detailed project scope of work using CDOT's Generic Scope of Work. This eLearning is a pre-requisite to the in-class Work-Hour Estimation course.

## Writing for Engineering Professionals (3-day course - \$460)

Writing for Engineering Professionals is a technical-writing classroom training program, customized for those in civil engineering, the environmental sciences, construction, and related fields. Writing is taught as a science, not an art. Metrics and strategies are provided as objective measures of writing's clarity and conciseness.





# TETP FY 2017 TRAINING CALENDAR

2016

2017

	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
<b>GENERAL ENGINEERING</b>												
Construction Inspector Qualification Testing	11	15	12	17	14	12	9	13	13	10	15	12
Professional Services Selection Panel Training	Contact Kyle Dilbert											
Project Development Manual	ILT on hold. eLearning available through CDOT Learning Management System (LMS)											
Budget Management (eLearning)	Available through CDOT Learning Management System (LMS)											
Train the Trainer			R1 Plains KOA	30-2			4-6	R1 Large Maint.				
Transportation Core Curriculum (Prerequisite: Project Lifecycle 1 mo. prior)								27-03	Doubletree in Aurora			
Writing for Engineering Professionals (Write-Logic)										4-6	CTMC TrailRidge	
<b>ENVIRONMENTAL</b>												
Context Sensitive Solutions (As Needed)												
<b>SURVEY AND ROW</b>												
Survey Basics (eLearning)	Now available through CDOT Learning Management System (LMS)											
<b>ROADWAY DESIGN</b>												
Applied Roadway Design									7-10	R1 N. Holly Turnpike		
Cost Planner Tool & Risk gmt. (new e-learning coming soon)	Coming soon through CDOT Learning Management System (LMS)											
CPM Scheduling for Design (New prerequisite eLearning coming soon)				HQ, RM 279	13		HQ, RM 279	1		11	HQ, RM 279	
"Design Project Administration (eLearning)"	Available through CDOT Learning Management System (LMS)											
Work Hour Estimation (New eLearning prerequisite course coming soon)					29	FHU				20	FHU	
Interchange Planning and Design					16-17	CTMC Trailridge						
CDOT Lighting Design				26-27	MH Lighting							
"Plan Checking (eLearning)"	Available through CDOT Learning Management System (LMS)											
Specifications Writing for Designers (New eLearning coming soon)	Coming soon through CDOT Learning Management System (LMS)											
<b>CONSTRUCTION MANAGEMENT</b>												
Construction Change Order (New eLearning coming soon)	Coming soon through CDOT Learning Management System (LMS)											
Construction Project Admin. (Prerequisite Section 100 eLearning)			CTMC Trailridge	8-10	N. Holly Turnpike	24-26			14-16	R1 Large Maint		
Construction Project Financials (new eLearning coming soon)	Coming soon through CDOT Learning Management System (LMS)											
CPM Scheduling for Construction (New prerequisite eLearning coming soon)				HQ, RM 279	14		HQ, RM 279	2		12	HQ, RM 279	
Disputes and Claims Resolution						1	R1 Large Maint					
Force Accounts (New eLearning coming soon)	Coming soon through CDOT Learning Management System (LMS)											
Managing Contract Time (Prerequisite eLearning course)							10	CTMC Trailridge				
Materials Technician Training (New eLearning coming soon)	Coming soon through CDOT Learning Management System (LMS)											
<b>STRUCTURES</b>												
Reading Structural Plans									21-22	N. Holly Turnpike		



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## Contact Us:

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303.757.9298

[Allison.Wilson@state.co.us](mailto:Allison.Wilson@state.co.us)

### Seating Availability

Seating availability depends on CDOT's internal training needs and demands.

### Registration

To enroll in a TETP course, please send an email to the contact listed above and you will receive information on how to register.

### Cost

There is no charge to register for eLearning courses. Costs for Instructor-led courses are noted in class descriptions and must be paid in full prior to attending class.

### Disclaimer

These educational courses are intended as guidance regarding design, construction and management of transportation projects and do not constitute official rules or regulations of CDOT.

