

For cost information and seating availability, out of agency learners should contact the training helpline at (512)416-2000 or email at training@txdot.gov. For more details on required prerequisites, mandatory equipment and training dates, TxDOT employees should log into PeopleSoft Training & Development and search by course code.

Course Code	Course Title	Description	Objectives	Duration (in hours)
BRG100	Bridge Construction Inspection	This course covers an inspector's responsibilities & the aspects of inspecting bridges upon construction. Focus on: substructure, superstructure, reinforcing steel, slab joints, concrete placement on slabs, finishing concrete, overlays & repairs, & more.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Explain the principles for checking elevations on a point of a bridge structure during construction. <input type="checkbox"/> 2. Identify the specifications and locate the tolerances allowed for various items of work performed. <input type="checkbox"/> 3. Recognize the importance of proper concrete and steel placement in a bridge construction. <input type="checkbox"/> 4. Explain the importance of knowing and adhering to the plans, specifications, and proposals. <input type="checkbox"/> 5. Explain why curing concrete is important. <input type="checkbox"/> 6. Identify the elements of a bridge substructure and superstructure.	20
BRG103	Underwater BRG Repair,Rehab,Count ermeasures - NHI130091B	This course is designed to enable design engineers to select, design, & specify appropriate & durable repairs to below water bridge elements. As well as to train staff in effective construction inspection of below water repairs.	Upon completion of the course, the participant will be able to: <input type="checkbox"/> 1. Determine whether below water repairs can be completed "in the wet", or require a cofferdam (or similar). <input type="checkbox"/> 2. Describe typical environmental constraints to performing repairs below water. <input type="checkbox"/> 3. Describe three methods of achieving a dry construction site within a body of water. <input type="checkbox"/> 4. List three attributes of good concrete repair mix designs. <input type="checkbox"/> 5. Describe the differences between flexible and rigid concrete forming systems. <input type="checkbox"/> 6. Describe underwater concrete placement techniques. <input type="checkbox"/> 7. Write installation procedures for pile jackets. <input type="checkbox"/> 8. Describe three methods for repair of pier scour. <input type="checkbox"/> 9. Describe the benefits of cathodic protection for bridge substructures. <input type="checkbox"/> 10. Describe four stages of underwater repair activities for underwater construction inspection.	16
BRG104	Design & Fabrication of Curved & Skewed Steel Bridges (NHI 130095B)	This course applies Load and Resistance Factor Design (LRFD) theory to the design of skewed and curved steel bridges. It includes design decisions, girder design verifications & design detail items, fabrication & construction.	Upon completion of the course, participants will be able to: <input type="checkbox"/> 1. Describe the bridge superstructure design, fabrication and construction process for skewed or horizontally curved steel I-girder superstructures and for horizontally curved steel box-girder superstructures in accordance with the AASHTO LRFD Specifications. <input type="checkbox"/> 2. Illustrate the application of the AASHTO LRFD Specifications to the design process for skewed and curved steel-bridge superstructures, taking into account erection and construction considerations. <input type="checkbox"/> 3. Demonstrate understanding of design specification requirements for skewed and curved steel girder bridges through the completion of participant exercises and guided walk-throughs and the review of design examples. <input type="checkbox"/> 4. Successfully complete applicable Learning Outcome Assessments with a combined score of 70 percent or higher.	20
BRG105	Bridge Workshop - TxDOT	An interactive workshop on bridge planning, design, construction, inspection & maintenance directed towards TxDOT staff involved in these areas. TxDOT policy will be discussed along with current developments & innovations in bridge design & construction.	Upon completion of this course, participants will be able to: 1. Describe the Highway Bridge Program (HBP) and how it is administered. <input type="checkbox"/> 2. Describe new and innovative methods for bridge design, construction methods, and maintenance. <input type="checkbox"/> 3. Describe the bridge inspection program and TxDOT's roles and responsibilities in its administration.	8

BRG106	Fundamentals of LRFR and Applications of LRFR for Bridge Superstructures - NHI 130092B	Provides bridge engineers with the fundamental knowledge necessary to apply the most recent AASHTO LRFR Specifications to bridge ratings. Provide participants with in-depth training in evaluating reinforced and pre-stressed concrete and steel bridges.	<p>Upon completion of the course, participants will be able to: <input type="checkbox"/></p> <ol style="list-style-type: none"> 1. Describe the purpose of performing a load rating<input type="checkbox"/> 2. Identify the benefits of the LRFR methodology<input type="checkbox"/> 3. Demonstrate the LRFR process and the general load rating equations<input type="checkbox"/> 4. Explain legal loads and their use in load rating<input type="checkbox"/> 5. Determine distribution factors for load rating<input type="checkbox"/> 6. State the LRFR limit states<input type="checkbox"/> 7. Select evaluation factors for rating<input type="checkbox"/> 8. Describe the process for load posting and importance of load posting<input type="checkbox"/> 9. Describe the procedure for checking overload permits<input type="checkbox"/> 10. Demonstrate the application of LRFR requirements by completing load rating exercises<input type="checkbox"/> 11. Identify material deteriorations that affect load capacity of bridge components<input type="checkbox"/> 12. Calculate the flexural resistances of a prestressed concrete girder for load rating<input type="checkbox"/> 13. Calculate the shear resistance of a prestressed concrete girder for load rating<input type="checkbox"/> 14. Apply the load rating procedures for concrete slab bridges<input type="checkbox"/> 15. Calculate the flexural and shear resistance of a steel I-girder bridge for load rating<input type="checkbox"/> 16. Evaluate fatigue for load rating a steel girder bridge<input type="checkbox"/> 17. Apply LRFR requirements by completing load rating exercises 	32
BRG200	Bridge Inspection Refresher (NHI-130053)	This course refreshes fundamental visual inspection techniques, bridge functions, issues relative to the nations' bridge infrastructures, proper condition & appraisal rating practices & professional obligations of bridge inspectors.	<p>Upon completion of the course, participants will be able to:<input type="checkbox"/></p> <ol style="list-style-type: none"> 1. Describe the current overall condition and condition trends for the nation's bridges.<input type="checkbox"/> 2. Identify recent National Bridge Inspection Standards (NBIS) revisions.<input type="checkbox"/> 3. Code National Bridge Inventory (NBI) items accurately.<input type="checkbox"/> 4. Identify and document inspection observations using standard methods.<input type="checkbox"/> 5. Evaluate defects based on the 2008 AASHTO Manual for Bridge Evaluation.<input type="checkbox"/> 6. Code NBI components using the Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges.<input type="checkbox"/> 7. Determine if overall structure/structural member is fracture critical prone.<input type="checkbox"/> 8. Inspect and evaluate a bridge's four-traffic safety features accurately.<input type="checkbox"/> 9. List the keys to ensuring a safe work environment.<input type="checkbox"/> 10. Explain bridge responses and bridge mechanic principles. 	24
COM130	Understanding and Using Access	Explores designing a database, creating, viewing, editing, and relating tables; sorting and filtering data; creating queries based on single and multiple tables; designing and using custom data entry forms; and creating/printing reports and labels.	<p>Upon completion of this course, participants will be able to:<input type="checkbox"/></p> <ol style="list-style-type: none"> 1. Explore database concepts and key features of Access<input type="checkbox"/> 2. Add edit, locate, and delete table records<input type="checkbox"/> 3. Use spell checker in tables<input type="checkbox"/> 4. Design, create, and modify tables<input type="checkbox"/> 5. Sort and filter data<input type="checkbox"/> 6. Create basic queries and queries based on multiple tables<input type="checkbox"/> 7. Establish permanent relationships between tables<input type="checkbox"/> 8. Design and customize data entry forms, reports, and mailing labels 	24

COM132	KAC Basic Administration	Covers scan settings for a Kofax Ascent Capture server; including document scanning, indexing, index verification, document assembly, batch class setting development, release mapping to FileNET CS systems & publishing batch settings.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Demonstrate how to successfully install the software; <input type="checkbox"/> 2. Demonstrate the the correct assembly of documents for scanning; <input type="checkbox"/> 3. Identify the required settings for batch class settings; <input type="checkbox"/> 4. Demonstrate the method to successfully release scanned images into the FileNet CS system; <input type="checkbox"/> 5. Demonstrate the method to publish batch settings.	16
COM133	Intro to TxDocs Online	An intro to the features, functions & options of Altien's ADM product (TxDocs Online). Includes lecture, discussion & lab work utilizing the FileNET Content Services solution in a Windows Internet Explorer environment.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Demonstrate proper utilization of the TxDocs Online interface to the back end FileNET Application. <input type="checkbox"/> 2. Demonstrate the steps taken to customize the interface - as needed - to successfully enter, search, retrieve and update documents in their electronic document management system.	8
COM201	Modeling Data at TxDOT	Modeling Data at TxDOT.	Upon completion of the course, participants will be able to: <input type="checkbox"/> 1. Identify and explain basic logical and physical data modeling concepts and techniques; <input type="checkbox"/> 2. Recognize frequently occurring patterns in data; and <input type="checkbox"/> 3. Describe sound data management practices.	8
CON105	Intro to Cst/Mnt Inspection	The course covers the duties & different facets of a construction inspector. It uses the current Standard Specifications Book, plan sheets, reviewing of testing methods of concrete, & responsibilities of an inspector for seal coating, striping, & more.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Describe the duties and responsibilities of an inspectors. <input type="checkbox"/> 2. Identify the bid items that make up the contract. <input type="checkbox"/> 3. Locate the tolerances allowed in the specifications. <input type="checkbox"/> 4. Explain ethical procedures. <input type="checkbox"/> 5. Record relative data to document inspection. <input type="checkbox"/> 6. Explain SW3P. <input type="checkbox"/> 7. Recognize the importance of traffic control. <input type="checkbox"/> 8. Explain the purpose of lime and cement stabilization. <input type="checkbox"/> 9. Describe the responsibilities of a hot mix roadway inspector. <input type="checkbox"/> 10. Describe field-testing of concrete. <input type="checkbox"/> 11. Describe the responsibilities of an inspector for seal coating or surface treatment work. <input type="checkbox"/> 12. Describe the responsibilities of an inspector for striping the roadway. <input type="checkbox"/> 13. Explain the responsibilities of an inspector for maintenance contracts. <input type="checkbox"/> 14. Perform basic mathematical calculations to support quantities.	24
CON107	PMIS Concept for Administratrs	An overview of PMIS data, reports & analyses for District Administrators, with special emphasis on what information is available and how it can be used.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Identify the types of pavement evaluation data available in PMIS; <input checked="" type="checkbox"/> Describe the differences between network-level and project-level pavement management, and explain how PMIS can be used to support both; <input type="checkbox"/> 3. Interpret PMIS data and scores; <input type="checkbox"/> 4. Use PMIS to monitor pavement condition, estimate total pavement needs, and assess the overall level of service provided by pavement maintenance.	5
CON110	PMIS Visual Rater Cert Conc Pv	This course trains district and contract employees to conduct visual distress evaluations on concrete pavements for the Pavement Management Information System (PMIS).	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Understand the Texas Reference Marker System and know how it is used to identify and locate PMIS sections in the field; <input type="checkbox"/> 2. Read a PMIS section list and automated rating form to identify the sections; <input type="checkbox"/> 3. Complete an automated rating form; <input type="checkbox"/> 4. Identify the distresses rated for concrete pavements; <input type="checkbox"/> 5. Conduct visual distress ratings for PMIS.	24

CON111	PMIS Visual Rater Cert Flex Pv	This course trains district and contract employees to conduct visual distress evaluations on flexible pavements for the Pavement Management Information System (PMIS).	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Understand the Texas Reference Marker System and know how it is used to identify and locate PMIS sections in the field; <input type="checkbox"/> 2. Read a PMIS section list and automated rating form to identify the sections; <input type="checkbox"/> 3. Complete an automated rating form; <input type="checkbox"/> 4. Identify the distresses rated for flexible pavements; <input type="checkbox"/> 5. Conduct visual distress ratings for PMIS.	24
CON112	Skid Measurement Sys Op Cert	This course trains district and division employees to operate and maintain calibration of Skid Measurement Systems.	Upon completion of this course, the participant will be able to: <input type="checkbox"/> 1. Identify the components of the system; <input type="checkbox"/> 2. Demonstrate power-up procedures; <input type="checkbox"/> 3. Demonstrate calibration procedures; <input type="checkbox"/> 4. Demonstrate system calibration verification procedures; <input type="checkbox"/> 5. Conduct measurements; <input type="checkbox"/> 6. Identify various data formats and process data.	8
CON113	Auto Pave Measure Sys Op Cert	This course trains district and division employees to operate and maintain calibration of Automated Pavement Measurement System.	Upon completion of the course, participants will be able to: <input type="checkbox"/> 1. Identify the components of the system; <input type="checkbox"/> 2. Demonstrate power-up procedures; <input type="checkbox"/> 3. Demonstrate sub-system static check procedures; <input type="checkbox"/> 4. Demonstrate system calibration verification procedures; <input type="checkbox"/> 5. Conduct network level measurements <input type="checkbox"/> 6. Conduct project level measurements; <input type="checkbox"/> 7. Identify various data formats; and <input type="checkbox"/> 8. Use Pro-View to process data.	12
CON114	Falling Wt Deflecto Op Cert	This course trains district and division employees to operate and maintain calibration of Falling Weight Deflectometer.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Identify the components of the system; <input type="checkbox"/> 2. Demonstrate power-up procedures; <input type="checkbox"/> 3. Demonstrate calibration procedures; <input type="checkbox"/> 4. Demonstrate system calibration verification procedures; <input type="checkbox"/> 5. Conduct measurements; and <input type="checkbox"/> 6. Identify various data formats and process data.	12
CON116	Critical Path Scheduling-Const	This course teaches construction personnel and designers how to enter and track the progress of a project and the contract time of a construction project using the critical path method (CPM) of scheduling.	Upon completion of the course, participants will be able to: <input type="checkbox"/> 1. Explain contract time administration and scheduling specifications. <input type="checkbox"/> 2. Identify the activities that control the overall construction time of the critical path. <input type="checkbox"/> 3. Check the progress of a project using the project schedule. <input type="checkbox"/> 4. Measure the affect an impact has on projects.	20
CON118	Construction Contract Admin	This course introduces and re-inforces the policies and guidelines used on construction projects and the recordkeeping process as outlines in the Construction Contract Administration Manual. This course replaces CON200.	Upon completion of the course, participants will be able to: <input type="checkbox"/> 1. Audit contract records. <input type="checkbox"/> 2. Demonstrate proper recordkeeping. <input type="checkbox"/> 3. Check Construction projects. <input type="checkbox"/> 4. Handle the administration of construction contracts.	24
CON120	Fundamentals of Concrete 201	Provides further information on the material qualities of fresh and hardened concrete, ideal placement, consolidation, finishing and curing techniques, specification requirements, concrete production and delivery operations.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Discuss the properties of materials used to make concrete. <input type="checkbox"/> 2. Evaluate concrete construction/material problems and describe troubleshooting methods. <input type="checkbox"/> 3. Review measures to prevent concrete construction/material problems. <input type="checkbox"/> 4. Identify issues that affect the durability of concrete.	4

CON204	Using ACI 211 for TxDOT Proj	Course covers concrete mix design techniques, focusing on ACI 211 Standard Practice for Selecting Proportions for Normal, Heavyweight & Mass Concrete, including site manager example entry. Intended to be taken in conjunction with CON205 and CON206.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> □ 1. Discuss volumetric properties of aggregates, cement, fly ash and the concrete mixture; □ 2. Discuss the specification requirements for mix design, including minimum strength, maximum water-cement ration, maximum cement content, pozzolan substitution rates, air entrainment and slump; □ 3. Explain how to calculate an overdesign value and apply it to a mix design; □ 4. Perform a mix design manually and with the aid of the "Concrete Mix Design and Control Workbook" developed by TxDOT; □ 5. Explain the testing requirements of trial batches; □ 6. Explain the requirements of Item 421 with regard to calibration of plants and trucks; and □ 7. Explain the specification requirements of Item 421 for concrete delivered to a project, including temperature, time, slump, air and strength. 	4
CON205	Fundamentals of Concrete 101	Provides an introduction on the material qualities of fresh and hardened concrete, ideal placement, consolidation, finishing and curing techniques, specification requirements, and concrete production and delivery operations.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Explain the basic principles of cement hydration. □ 2. Discuss the role of pozzolans in concrete. □ 3. Describe the effects of water content on concrete properties. □ 4. Identify concrete properties important for constructability. □ 5. Identify concrete properties important for durability. □ 6. Explain the role of chemical admixtures on concrete properties. □ 7. Explain the importance of consolidation, finishing and curing. □ 8. Describe Item 421 Hydraulic Cement Concrete. □ 9. Discuss basic operations of concrete production (materials, plant operations, delivery, etc.). 	8
CON206	Concrete Paving	Introduction on how to construct & inspect concrete pavement; replaces CON103 Concrete Pavement Inspection. Covers material characteristics, preparation & communication & proper construction techniques. Intended to be taken in conjunction with CON205.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> □ 1. Discuss 2004 Specifications for Items 360 and 421; □ 2. Identify mix design requirements and the impact of material properties on construction; □ 3. Identify steps to achieve a properly constructed Concrete Pavement; □ 4. Explain the standard content for pre-paving conferences; and □ 5. Identify what a paving construction/quality control plan contains. 	8
CON207	HUB Purchasing Requirements	This training is an instructor led course required for all TxDOT purchasers to review and discuss state HUB rule changes. The training will ensure that districts follow standard procedures regarding the TxDOT HUB Program.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Procure purchases using current HUB program requirements; □ 2. Review past and current HUB requirements and procedures; □ 3. Retrieve information regarding HUB procedures; □ 4. Coordinate with the BOP office to expand opportunities to the HUB communities; □ 5. Evaluate the Good Faith Effort requirements for contracts over \$100,000.00 for commodity purchases; □ 6. Track HUB subcontractor payments. 	3

CON209	Dispute Resolution	An intro course offered by the Construction Division on fundamental techniques in resolving disputes. Problem solving concepts are presented to facilitate the successful resolution of project issues encountered during the administration of a contract.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Define, restate, and discuss the Laws, Rules, and TxDOT policy governing the administration of a dispute.□ □ 2. Provide early recognition of possible project issues in regards to communication problems, possible project delays, design problems and contract administration issues.□ □ 3. Distinguish between the different categorical types of disputes and the damages associated to each.□ □ 4. Apply the methods presented and improved their ability to provide fair and reasonable recommendations leading towards the resolution of disputes.□ □ 5. Increase their ability to analyze and resolve project issues at the project or contract administering office level. 	16
CON303	Bridge Deck Workshop	Covers bridge deck construction: PCP deck panels, bridge screeds, concrete placement operations, inspection & troubleshooting tips, review of projects, etc. Key info is highlighted in reference manuals & current issue of the Tx Standards Specifications.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> □ 1. Demonstrate an understanding of bridge deck inspection;□ □ 2. Explain the requirements for bridge deck construction, the reasons behind them; □ □ 3. Identify the critical items for inspection;□ □ 4. Explain the importance of PCP deck panels for deck construction. 	6
CON408	Asphalt Binder Testing	Course on the Dynamic Shear Rheometer (DSR) and Rotational Viscometer (RTV); demonstrating testing & calibration procedures and solutions to common problems that may arise with the test or equipment.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> □ 1. Perform DSR and RTV testing more consistently and repeatedly;□ □ 2. Diagnose problems with their equipment or technique;□ □ 3. Calibrate the equipment; and□ □ 4. Perform minor repairs and adjustments without intervention by CSTM&P. 	4
CON409	5 Wk Hwy Mat Engineering I	Part 1 of 2-part course on applied knowledge in highway engineering materials & quality control. Customized for Tx; modules include soils & foundations, sampling & statistics & aggregates.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> □ 1. Identify and describe the characteristics and engineering properties of the materials utilized in highways;□ □ 2. Identify and describe teh selection and important design properties of highway materials;□ □ 3. Describe the important steps and considerations inthe mix design procedures;□ □ 4. Develop an effective materials acceptance plan;□ □ 5. Describe the field and laboratory testing procedures and the significance of the test results, along with their relationship to laboratory designs; and□ □ 6. Describe the issues and trends of importance to TxDOT materials engineering personnel. 	120
CON410	5 Wk Hwy Mat Engineering II	Part 2 of 2-part course on applied knowledge in highway engineering materials & quality control. Customized for Tx; modules include portland cement & concrete and asphalt and asphalt mixtures.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> □ 1. Identify and describe the characteristics and engineering properties of the materials utilized in highways;□ □ 2. Identify and describe teh selection and important design properties of highway materials;□ □ 3. Describe the important steps and considerations inthe mix design procedures;□ □ 4. Develop an effective materials acceptance plan;□ □ 5. Describe the field and laboratory testing procedures and the significance of the test results, along with their relationship to laboratory designs; and□ □ 6. Describe the issues and trends of importance to TxDOT materials engineering personnel. 	80

CON411	Inspect of Flexi Base & Embank	This course will introduce proper techniques for construction and inspection of embankments, flexible base and stabilized layers. Participants are required to successfully complete prerequisite CON814 Spec- Book	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. List the general duties of the inspector.□ 2. Identify the material properties of flexibe base and embankment. □ 3. Describe how material properties affect construction and performance.□ 4. State the importance of proper preparation of the subgrade.□ 5. Identify proper material delivery, stockpiling and handling techniques.□ 6. Describe proper placement techniques.□ 7. Describe proper compaction.□ 8. Explain field testing and acceptance.□ 9. Identify finishing and curing techniques.□ 10. Cite the related 2004 specifications on embankment, flexible base and stabilized layers.□ 11. Discuss the importance and agenda items of pre-paving meetings. 	16
CON500	Site Mgr Inspector Field Rptg	The course provides an overview of the following areas: <ul style="list-style-type: none"> □ Contract Administration, Field Data Collection, Pipeline & Zip Contract and Materials Inquiry. 	Upon completion of this course, participant will be able to: <ul style="list-style-type: none"> □ 1. Use the automated construction management system 'SiteManager';□ 2. Access contract and contractor information;□ 3. Complete a Daily Work Report;□ 4. Document contractor activity;□ 5. Transfer information to and from a PC to a server-based PC. 	12
CON501	Site Mgr Contract Admin	This course is a hands-on computer-based training in the use of SiteManager contract administration functionality involving recording and documenting installed work items, DWRs, Diaries, contractor payments and testing of materials used.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Use the automated construction management system 'SiteManager'. 	12
CON502	SiteManager for Area Engineers	This course is a hands-on computer-based training in the use of SiteManager construction management functionality as it relates to TxDOT Area Engineers involving the recording and documenting of construction activities, payments, and more.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Use the automated construction management system "SiteManager". 	6
CON503	SiteManager Materials Mgtmt	This course provides comprehensive hands-on training in the use of SiteManager involving the recording and documenting of materials used and tests performed on materials used for a project.	Upon completion of this course, participant will be able to: <ul style="list-style-type: none"> □ 1. Use 'SiteManager' to research online sample and testing requirements for a material for a particular project;□ 2. Input material sample information;□ 3. Record test results for a material;□ 4. Access material templates and spreadsheets. 	12
CON510	Intro to Construction Contract Management	This course provides tools & information to manage contractor-provided construction schedules. Topics include Scheduling: Basics & Requirements; The Critical Path Method; Updates & Controls; Project Mgmt; as well as understanding Standard Spec. Item 8.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Identify the need for monitoring, updating, and controlling the schedule and its relationship to project completion and project costs; 2. Identify the types of schedule delays that are common during construction projects; 3. Understand the authority of the Receiving Agency project manager relative to maintaining the construction schedule. 	6

CON818	Contract Administration Core Curriculum - NHI - 134077	Covers basic Federal-aid requirements & FHWA policy in the October 2014 CACC manual. Participants should complete one of NHI's intro courses to FA Highway Program & MUST watch FA Essentials video before enrolling: www.fhwa.dot.gov/federal-aidessentials/ .	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Use the Contract Administration Core Curriculum Manual (CACC) and other FHWA resources in order to answer questions regarding program-level and project-level requirements on Federal Aid (FA) projects; <input type="checkbox"/> 2. Describe the impact program-level contract requirements have on individual FA projects; <input type="checkbox"/> 3. Identify the contract requirements associated with administering FA projects for Federal and State entities at the pre-award, advertising and award, and post-award and constructions stages.	16
CTR104	Best Value Contract at TxDOT	Covers law, terms & conditions, signature authority, ethics, planning, risk mgt, communication mgt, work scope, fee schedule & payment, solicitation, negotiation, selection, documentation, work authorizations, change mgt, invoices, eval & close-out.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Identify the various roles in the contracting process and apply that knowledge to particular contracts; <input type="checkbox"/> 2. Choose appropriate contracting vehicles based on the legal and contracting principles that apply to each contracting type; <input type="checkbox"/> 3. Plan a professional services procurement, choose the correct type of contract, and identify and manage the risks inherent in the contracting process; <input type="checkbox"/> 4. Design and write a scope of work that clearly identifies the work that will be done and the standard that will be applied; <input type="checkbox"/> 5. Identify the various methods of payment, gauge their respective risks and benefits, and choose the one most suited to a particular contract; <input type="checkbox"/> 6. Design and write a fee schedule that minimizes the risk of confusion or abuse; <input type="checkbox"/> 7. Conduct negotiations with potential providers of professional services; <input type="checkbox"/> 8. Develop and apply selection criteria to ensure a fair and productive competitive process in terms both of quality and of price; <input type="checkbox"/> 9. Review contract deliverables, approve and process invoices, and manage all aspects of the provider relationship; and <input type="checkbox"/> 10. Draft, issue, and manage work authorizations.	32
CTR105	TX Transportation Contracting	A general overview of contracting types at TxDOT and the inherent risks with each type of contract. It also addresses contract planning, procurement, scopes of work, fee schedules, contract management, contract law, contract claims, and ethics.	Upon completion of this course, participants will be able to: 1. Identify many different types of contract in common use at TxDOT. 2. Assess the strengths, vulnerabilities, and risks of each type of contract. 3. Recognize and predict the cycle of activities followed in contracting. 4. Apply basic concepts involved in contract planning, procurement, scopes of work, fee schedules, and contract management. 5. Identify when ethical issues arise in contracting. 6. Recognize how significant legal principles are applied in the contracting process.	7
CTR106	Negotiating TxDOT Contracts	How to prepare for contract negotiations, as well as, techniques to use during contract negotiations & particular contracting issues, including scopes of work, fee schedules, work schedules, competitive negotiations, disputes & change management.	Upon completion of the course, participants will be able to: <input type="checkbox"/> 1. Assemble a negotiation team and develop positions; <input type="checkbox"/> 2. Control the negotiation environment; <input type="checkbox"/> 3. Conduct negotiations using a wide variety of techniques; <input type="checkbox"/> 4. Recognize negotiation techniques used by others; <input type="checkbox"/> 5. Engage in effective negotiations on a wide variety of contract issues.	8

CTR107	Intro to Intergovern Contracts	Guides TxDOT personnel through the intergovernmental contracting process & the fundamentals of processing interagency contracts, advance funding agreements, agreements with other state & federal entities & interlocal governments. Previously DEV406.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Identify different contracting mechanisms used with various governmental entities and determine which mechanism should be used with each entity and in each circumstance. <input type="checkbox"/> 2. Write a simple scope of work and fee schedule or budget for an intergovernmental contract. <input type="checkbox"/> 3. Conduct a simple negotiation. <input type="checkbox"/> 4. Administer a simple contract, including file maintenance, payment of invoices, monitoring of performance, and change management.	8
CTR108	Intro to Contr w/Priv Entities	Guides TxDOT personnel through the intergovernmental contracting process & the fundamentals of processing contracts with private entities. Previously DEV407.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Recognize basic principles of contract law and apply those principles to common issues that may arise in TxDOT contracts. <input type="checkbox"/> 2. Identify problems that arise in TxDOT contracts, explore the possible consequences of those problems, and learn ways to reduce the likelihood of contracting problems. <input type="checkbox"/> 3. Write a simple scope of work and fee schedule for a contract with a private entity. <input type="checkbox"/> 4. Administer a simple contract, including processing work authorizations, file maintenance, payment of invoices, monitoring of performance, and change management.	8
CTR109	Interagency Contracts	This course will teach TxDOT personnel how to analyze, prepare, and administer interagency contracts. <input type="checkbox"/> Previously DEV409, Advanced Interagency Contracts.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Distinguish circumstances in which interagency contracts may or may not be used based on the laws governing the use of these contracts. <input type="checkbox"/> 2. Draft a scope of work and budget for an interagency contract. <input type="checkbox"/> 3. Conduct a simple negotiation. <input type="checkbox"/> 4. Administer an interagency contract, including issuing notices to proceed, file maintenance, payment of invoices, monitoring of performance, and change management.	8
CTR110	Advance Funding Agreements	This course will teach TxDOT personnel how to analyze and prepare advanced funding agreements. <input type="checkbox"/> Previously DEV410, Advanced Funding Agreements.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Identify various types of advance funding agreements and the circumstances in which each should be used. <input type="checkbox"/> 2. Draft a budget page for an advance funding agreement. <input type="checkbox"/> 3. Draft a scope of work for a non-construction advance funding agreement. <input type="checkbox"/> 4. Administer an advance funding agreement, including oversight of local performance, file maintenance, handling construction change orders, and change management.	8
CTR615	Consultant Management/Administ	Covers Project Management & Contract Administration roles & responsibilities from the selection & award process through contract close-out for engineering, surveying & architectural contracts. Previously DES615 Consultant Management/Administration.	Upon completion of this course, participants will be able to: <input type="checkbox"/> <input type="checkbox"/> 1. Demonstrate their understanding of the selection process steps. <input type="checkbox"/> 2. Develop acceptable fee schedules. <input type="checkbox"/> 3. Prepare and negotiate the scope, staffing categories, overhead rates and labor rates related to consultant contracts. <input type="checkbox"/> 4. Develop legally sufficient contracts, work authorizations and supplemental agreements. <input type="checkbox"/> 5. Explain how to properly enforce consultant contract agreements. <input type="checkbox"/> 6. Describe how to actively manage consultants and monitor the contract requirements and associated budget.	32
CTR616	Consultant Error & Omission	Covers the steps in identifying an error or omission, responsibility for additional costs, how to process change orders correctly, the use of correct reason codes & the understanding of the entire process. Previously DES616	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Demonstrate an understanding of the Consultant Errors & Omission Correction and Collection procedures and policy. <input type="checkbox"/> 2. Determine if an error or omission has occurred. <input type="checkbox"/> 3. Identify the necessary steps for determining the "best" solution to an error or omission. <input type="checkbox"/> 4. Determine that a design plan was "complete" and "correct" on bid	

		Consultant Error & Omission.	<p>day. <input type="checkbox"/></p> <p>5. Measure the impact a change order has on a project, such as mitigating delays. <input type="checkbox"/></p> <p>6. Identify the basis for additional costs to TxDOT to be pursued for reimbursement. <input type="checkbox"/></p> <p>7. Differentiate between Consultant Liability and Total Liability on an error or omission. <input type="checkbox"/></p> <p>8. Analyze communications and timing of the error or omission submittal. <input type="checkbox"/></p> <p>9. Select the correct Change Order code by recognizing the perspectives of all relevant parties and receiving consensus on the code within TxDOT. <input type="checkbox"/></p> <p>10. Recognize the importance of fair and consistent implementation of the procedures.</p>	16
DES102	Design Concepts from AASHTO	<p>Describes key concepts and content contained in the American Association of State Highway & Transportation Officials' (AASHTO's) Policy on Geometric Design of Highways and Streets (the "Green Book").</p> <p>Participants will complete an end-of-course exam.</p>	<p>Upon completion of the course, participants will be able to: <input type="checkbox"/></p> <p>1. Identify elements of design for highways and streets, including various sight distance requirements. <input type="checkbox"/></p> <p>2. Know where to find safe minimum radius, super elevation values and development lengths for banking of horizontal curves. <input type="checkbox"/></p> <p>3. Find safe minimum vertical curve distances for sag and crest curves at different design speeds. <input type="checkbox"/></p> <p>4. Explain the difference between roadway and roadside elements. <input type="checkbox"/></p> <p>5. Describe design considerations for rural highways, urban arterials and freeways. <input type="checkbox"/></p> <p>6. Explain the importance of at-grade intersection design options. <input type="checkbox"/></p> <p>7. Describe general principles to determine interchange design in urban areas. <input type="checkbox"/></p> <p>8. Describe different warrants for the construction of interchanges.</p>	24
DES106	Freeway Design and Operations	<p>Addresses various aspects of freeway design and operations. Introduces changes to existing freeway systems which may be necessary to accommodate future traffic demands.</p>	<p>Upon completion of this course, participants will be able to: <input type="checkbox"/></p> <p>1. Explain freeway flow characteristics. <input type="checkbox"/></p> <p>2. Identify the elements in freeway project development. <input type="checkbox"/></p> <p>3. Describe frontage road design issues. <input type="checkbox"/></p> <p>4. Identify interchange configurations. <input type="checkbox"/></p> <p>5. Explain safety considerations for freeway design and operations. <input type="checkbox"/></p> <p>6. Define the functional requirements for freeway design.</p>	24
DES107	Interstate Access Course	<p>This two day course provides practical information for applying the FHWA policy on requests for new or revised access to the Interstate system. Related topics include geometric design, traffic analysis, and the safety analysis.</p>	<p>Upon completion of this course, participants will be able to:</p> <p>1. Compare and contrast various interchange alternatives;</p> <p>2. Provide insights on making good decisions with regard to new or modified access.</p>	16
DES108	Urban Street Design	<p>Focuses on the design of major urban streets. Urban collector and residential streets is included; however, the focus is the appropriate range in standards based on functional design criteria.</p>	<p>Upon completion of the course, participants will be able to: <input type="checkbox"/></p> <p>1. Identify design elements of major urban streets. <input type="checkbox"/></p> <p>2. Explain the principles for planning and designing public street systems. <input type="checkbox"/></p> <p>3. Explain the principles of horizontal and vertical alignment for city streets. <input type="checkbox"/></p> <p>4. Explain intersection design principles and their significance to urban street systems. <input type="checkbox"/></p> <p>5. Describe the design of medians as a specific element in the design of urban streets.</p>	24

DES109	Plans, Specifications and Estimates Package	Describes processes used to assemble and review project plans, specifications and estimates. Participants should be familiar with the basic operations of TxDOT's Design Construction Information System (DCIS).	Upon completion of the course, participants will be able to: <input type="checkbox"/> 1. Explain the importance of an accurate PS&E package. <input type="checkbox"/> 2. Describe the process of assembling a PS&E package. <input type="checkbox"/> 3. Explain the importance of accurate entries into DCIS. <input type="checkbox"/> 4. Identify factors that can affect unit bid prices. <input type="checkbox"/> 5. Explain the purpose of General Notes. <input type="checkbox"/> 6. Describe differences between a district review of the PS&E package and a division review.	16
DES110	Right-of-Way Considerations	Provides the steps involved in ROW acquisition and the impact of project design. Encourages increased coordination between designers and ROW personnel to identify potential project restraints.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Discuss the impact of ROW acquisition and its legal constraints and considerations on project development and engineering/technical staff. <input type="checkbox"/> 2. Identify and explain the importance and impact that design decisions made during TxDOT transportation projects have on the ROW acquisition process. <input type="checkbox"/> 3. Identify state and federal laws that govern ROW acquisition and utility accommodations.	16
DES111	Introduction to Roadway Design	Introduces roadway design engineers to the design concepts and principles necessary to develop roadway construction plans. Participants must bring a scientific calculator and straight edge.	Upon completion of the course, participants will be able to: <input type="checkbox"/> 1. Discuss the characteristics and interrelationships between motor vehicle operators, the variety of motor vehicles and the various types of Texas roadway designs. <input type="checkbox"/> 2. Discuss the general roadway design process. <input type="checkbox"/> 3. Utilize the Roadway Design Manual to develop design criteria for a proposed highway improvement. <input type="checkbox"/> 4. Discuss the importance of preparing a design summary report. <input type="checkbox"/> 5. Identify site-specific documentation. <input type="checkbox"/> 6. Verify documentation pertaining to the site by performing a site visit. <input type="checkbox"/> 7. Explain the submittal and approval process for typical section designs. <input type="checkbox"/> 8. Identify roadway alignments, including the center line alignment, curve and tangents in the design drawing. <input type="checkbox"/> 9. Establish the beginning and end points of a vertical alignment. <input type="checkbox"/> 10. Evaluate roadway design with respect to safety concerns. <input type="checkbox"/> 11. Design a typical cross-section of roadway. <input type="checkbox"/> 12. Describe the process for determining utility conflicts, side road and driveway tie-ins and surface drainage concerns. <input type="checkbox"/> 13. Describe the major components of bridge layout drawings. <input type="checkbox"/> 14. Describe the types of retaining walls used by TxDOT and where they are generally located. <input type="checkbox"/> 15. Discuss the rules and regulations pertaining to storm water pollution prevention plans (SW3P) for both permanent and temporary control projects. <input type="checkbox"/> 16. Discuss the purpose of drainage plans. <input type="checkbox"/> 17. Discuss the purpose of Signing, Pavement Markings, Traffic Signals and Illumination plans. <input type="checkbox"/> 18. Discuss the purpose of traffic control plans. <input type="checkbox"/> 19. Discuss the purpose of landscape design plans. <input type="checkbox"/> 20. Discuss the purpose of special specifications and general notes. <input type="checkbox"/> 21. Describe the importance and key components of miscellaneous roadway design details. <input type="checkbox"/> 22. Incorporate all pertinent design changes into the design drawing.	28

DES114	TxDOT Highway Materials Engrng	Course is designed for experienced engineering personnel who require knowledge in a broad spectrum of highway materials. The course includes demonstrations of key test procedures at the Materials and Tests section laboratory of the Construction Division.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Identify and describe engineering properties of highway materials. <input type="checkbox"/> 2. Identify and describe causes for poor performance of materials or structures. <input type="checkbox"/> 3. Outline and define material selection criteria. <input type="checkbox"/> 4. Describe new materials-related technologies. <input type="checkbox"/> 5. Describe and apply field and laboratory testing and inspection procedures. <input type="checkbox"/> 6. Describe mixture design procedures. <input type="checkbox"/> 7. Administer OC/OA specifications.	80
DES116	Introduction to Highway Project Development	Focuses on major activities listed in the "TxDOT Project Development Process Manual". Participants must bring current "TX Standard Specifications for Construction & Maintenance of Highways, Streets & Bridges" book, scientific calculator & straight edge.	Upon completion of the course, participants will be able to: <input type="checkbox"/> 1. Describe major processes in project development. <input type="checkbox"/> 2. Use the online manual for project development. <input type="checkbox"/> 3. Explain the major components of highway plans and specifications. <input type="checkbox"/> 4. Identify major resources available for project development.	28
DES119	Preliminary Design Process	Outlines the preliminary design process of a transportation improvement project. Includes the various tasks and sequences required to obtain schematic approval.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Review the Project Development Process Manual. <input type="checkbox"/> 2. Discuss major project development tasks and sequence. <input type="checkbox"/> 3. Describe a Preliminary Design Conference. <input type="checkbox"/> 4. Identify schematic requirements and types. <input type="checkbox"/> 5. Review the Design Summary Report (DSR). <input type="checkbox"/> 6. Identify potential project stakeholders. <input type="checkbox"/> 7. Discuss transportation project funding. <input type="checkbox"/> 8. Discuss toll feasibility. <input type="checkbox"/> 9. Review the requirements of public involvement. <input type="checkbox"/> 10. Review horizontal alignments in accordance with design criteria. <input type="checkbox"/> 11. Identify activities in the geometric schematic development process. <input type="checkbox"/> 12. Identify the purpose and benefits of Value Engineering. <input type="checkbox"/> 13. Identify the benefits and process of schematic reviews.	16
DES121	Building Roads the TxDOT Way	Provides a non-technical overview of building major highways in metropolitan areas. Introduces terminology and aspects of what designers, planners, environmental specialists, right-of-way agents, etc. consider when building roads the TxDOT way in Texas.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Describe how TxDOT roads are developed from inception to construction. <input type="checkbox"/> 2. Explain factors that impact the planning, design and construction of highways. <input type="checkbox"/> 3. Identify terminology and acronyms common to the three levels of project authorization: PLAN, DEVELOP and CONSTRUCT. <input type="checkbox"/> 4. Describe basic project development responsibilities of TxDOT divisions and districts. <input type="checkbox"/> 5. Explain employees' role in the building of roads in Texas.	8
DES122	Design & Const. for Ped Acces	This course provides an update on accessible pedestrian facility design with a focus on compliance with the Americans With Disabilities Act (ADA) and the Texas Accessibility Standards (TAS). Previously known as "Designing for Pedestrian Access"	Upon completion of the course, the participant will be able to: <input type="checkbox"/> 1. Discuss accessible design for various disabilities served and their needs. <input type="checkbox"/> 2. Use specifications provided in the course for the design of curb ramps and landings, sidewalks, and street crossings.	4

DES302	Primavera 6.2 Resource Mgrs	This course will instruct resource managers (defined as Supervisors or Lead Workers responsible for assigning resources to design project activities) on how to balance the workload across resources using Primavera P6.2.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Demonstrate how to set user settings to achieve consistent reporting across the TxDOT Enterprise <input type="checkbox"/> 2. Evaluate current and projected workloads and make resource assignments using P6.2 Client and P6.2 Web <input type="checkbox"/> 3. Understand and interpret project and portfolio data in dashboards and portals <input type="checkbox"/> 4. Identify how to review a staffing request from a Project Manager in Primavera 6.2 <input type="checkbox"/> 5. Recognize how to view and manage documents pertaining to projects in Primavera 6.2 <input type="checkbox"/> 6. Review workloads to avoid under or overloading of staff <input type="checkbox"/> 7. Identify the process of getting help when needed	8
DES501	Design Build Risk Transf & Mgt	Design build (DB) has a very different Risk Management and Risk Mitigation strategy than Design Build (DBB). Hence, a "paradigm shift" on the procurement contracts, contract management, and implementation of these projects is very different.	1. Identify the differences in the owner's role in implementing Design Build projects versus Design-Bid-Build projects. <input type="checkbox"/> 2. Discuss and practice what flexibility means on innovative projects. <input type="checkbox"/> 3. Describe risk transfer and how it relates to Design Build projects. <input type="checkbox"/> 4. Identify opportunities for innovation and how to maximize innovation opportunities in project development. <input type="checkbox"/> 5. Explain how Design Build delivery adds value to projects and how that value is achieved throughout the implementation phase.	16
DES600	Highway Stormwater Pump Station Design (NHI - 135028)	Provides detailed instruction in the design & analysis of highway stormwater pump stations including guidance on location and type selection. A major portion of the course is hydraulic design procedures for sizing & optimizing pump station performance.	Upon completion of the course, participants will be able to: 1. Describe what a pump station is and where they are used; 2. Define the drainage area for a pump station and construct the resulting mass inflow curve; 3. Calculate the storage volume required for a pump station and discuss ways to acquire that volume; 4. Determine pump operational schedule and perform mass curve routing of the inflow hydrograph; 5. Calculate the size of the discharge line and select required pump size; 6. Define dimensions of the wet well and perform system evaluation; 7. Describe basic mechanical and electrical concepts important in pump station design; 8. Describe available pump station software.	8
DES601	Basic Hydrology & Hydraulics	Provides an introduction to basic hydraulic principles and techniques. Content adapted from the TxDOT Hydraulic Design Manual, FHWA HDS-02-00X and other sources. Participants must bring a scientific calculator and Engineering Scale (English units).	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Derive watershed parameters. <input type="checkbox"/> 2. Derive flow rates, using hydrologic methods. <input type="checkbox"/> 3. Discuss the concepts of the continuity equation, energy, weir and orifice. <input type="checkbox"/> 4. Perform a simple hydraulic analysis.	24
DES602	Urban Storm Drain Design	Provides concepts and procedures of hydraulics and hydrology pertinent to the design of urban storm drains. Participants must bring a scientific calculator and engineering scale (English units). Participants will complete an end-of-course exam.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Identify urban storm drain design challenges. <input type="checkbox"/> 2. Describe components of an urban drainage system plan. <input type="checkbox"/> 3. Determine run-off rates for storm drain design. <input type="checkbox"/> 4. Discuss hydrologic and hydraulic methods for stormwater management. <input type="checkbox"/> 5. Select and design locations for storm drain inlets. <input type="checkbox"/> 6. Design layout and sizes of storm drain conduits. <input type="checkbox"/> 7. Evaluate the hydraulic gradeline of a storm drain design. <input type="checkbox"/> 8. Identify computer applications that would be useful.	20

DES604	Culvert Analysis and Design	Concentrates on rural & urban economic, operational & technical considerations necessary to develop proper culvert designs for roadway projects that conform with TxDOT design practices. Participants must bring a scientific calculator & engineering scale.	Upon completion of the course, participants will be able to: <input type="checkbox"/> 1. Identify key channel, roadway and regulatory issues that impact culvert performance and design. <input type="checkbox"/> 2. Identify key references and design analysis aids. <input type="checkbox"/> 3. Explain channel and culvert hydraulic principles. <input type="checkbox"/> 4. Apply analysis tools for troubleshooting. <input type="checkbox"/> 5. Identify and incorporate key documentation requirements for reports and plans.	24
DES606	Watershed Modeling Using HEC-HMS	Provides training on the Hydrologic Engineering Center (HEC) Hydrologic Modeling System (HMS) software for watershed modeling. NOTE: This course can be waived upon receipt of required documentation.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Explain the fundamentals of watershed run-off computations. <input type="checkbox"/> 2. Simulate performance of water control measures. <input type="checkbox"/> 3. Use the HEC-HMS interface and menus to set up rainfall run-off models, routing models and urban and reservoir-controlled basin models. <input type="checkbox"/> 4. Use HEC-HMS to solve both routine and complex hydrologic engineering design problems. <input type="checkbox"/> 5. Troubleshoot HEC-HMS projects. <input type="checkbox"/> 6. Evaluate and review consultant projects that use HEC-HMS. <input type="checkbox"/> 7. Develop a complete scope of work for consultant projects, using HEC-HMS.	24
DES607	Urban Drainage Design (NHI-135027)	Provides a detailed introduction to urban roadway drainage design. Design guidance for solving basic problems encountered in urban roadway drainage design is provided.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Determine run-off (peak flows and volumes) from urban watersheds. <input type="checkbox"/> 2. Apply basic hydraulic principles to urban drainage design. <input type="checkbox"/> 3. Perform roadway drainage designs, using various roadway inlets. <input type="checkbox"/> 4. Size and/or analyze storm drain conveyance systems. <input type="checkbox"/> 5. Establish the energy and hydraulic grade lines for storm drains. <input type="checkbox"/> 6. Design and/or analyze detention basins.	24
DES608	Culvert Design - NHI 135056	How to hydraulically size & design a highway culvert; topics include allowable headwater at the inlet, permissible outlet velocity, energy dissipation measures, aquatic organism passage, mechanisms of culvert failures, repair & rehabilitation options.	Upon completion of this course, the participant will be able to: <input type="checkbox"/> 1. Justify the importance of culvert design. <input type="checkbox"/> 2. Explain the overall culvert design process. <input type="checkbox"/> 3. Summarize basic hydraulic concepts. <input type="checkbox"/> 4. Discuss factors influencing hydraulic performance and design of culverts. <input type="checkbox"/> 5. Explain how to calculate culvert outlet velocity. <input type="checkbox"/> 6. Apply nomographs and computer methods to design a roadway culvert. <input type="checkbox"/> 7. Design culverts that meet aquatic organism passage (AOP) requirements. <input type="checkbox"/> 8. Assess impacts of repair and rehabilitation of culverts on hydraulic performance. <input type="checkbox"/> 9. Design energy dissipator and debris control structures for culverts. <input type="checkbox"/> 10. Design culverts for various situations. <input type="checkbox"/> 11. Discuss culvert failures and how they can be prevented.	24
DES610	Roadside Safety Systems -Roadway Designer Training	This course addresses the need for guard fence systems, terminals, and crash cushions, their performance capabilities, and the selection, design, and layout parameters that ensure an optimal installation.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Explain when a traffic barrier is the "best" choice for shielding a hazardous condition; <input type="checkbox"/> 2. Describe how different systems perform under actual crash conditions; <input type="checkbox"/> 3. Explain how a designer selects a barrier system and designs it to fit a specific location; <input type="checkbox"/> 4. Explain what constitutes an "optimal installation"; <input type="checkbox"/> 5. Locate recent crash testing updates and resources to aid in design.	8

DES701	MicroStation SS3 Upgrade (all users)	Users will learn to draft/edit dgn files using MicroStation tools including: trim, cut, fillet, copy, move, attaching references, turning levels on and off, and annotating with annotation scale.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> □ 1. Explain the changes in MicroStation when moving to the SS3 version of the tool. □ □ 2. Use the new version of Microstation to draft and edit dgn files. 	4
DES702	MicroStation SS3 Upgrade (GEOPAK Users)	Users will learn about geographic coordinate systems, stencil pavement markings, traffic simulations, and point clouds. Topics covered include how to: create simple sheets, assign coordinate systems to the dgn, and import/export the dgn to Google Earth.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> □ 1. Describe the tools required for visualization of a 3D model;□ □ 2. Apply new 3D tools in the upgraded Microstation environment; 	4
DES703	GEOPAK Upgrade to SS3	Users will learn how to: import terrain models, use new civil tools to draft Vertical and Horizontal Alignments along with the Edge of Pavement, create and apply cross sections and superelevations, annotate cross sections and calculate simple earthwork.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> □ 1. Explain the upgraded tools in the new GEOPAK software;□ □ 2. Incorporate the new GEOPAK tools into the existing design workflows;□ □ 3. Work with the upgraded GEOPAK software to make 3D models. 	17
DES704	GEOPAK Advanced	Users will learn how to create: templates for complex projects, pavement slabs, stripes, curbs, and end conditions for templates. Also, users will learn how to work with templates while working in a 3D model and using civil cells.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> □ 1. Explain principles of 3D modeling and how they relate to using templates and civil cells;□ □ 2. Work with templates and civil cells in the context of a 3D model. 	11
DES705	GEOPAK Survey	Users will learn how to work with Open Roads survey data. Topics include: general settings, data file parsing, importing and editing ASCII and RAW survey data, creating terrain models from field books, editing linear features, and adjusting survey data.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> □ 1. Import, edit, and export different kinds of Open Roads survey data;□ □ 2. Incorporate and edit Open Roads survey data into design work. 	8
DES706	Bentley Descartes	Users will learn about different types of Point Clouds, how to attach and classify Point Clouds, how to control a Point Cloud by manipulating it with clips and sections, and how to extract features from Point Clouds by following 3D clusters of points.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> □ 1. Incorporate point clouds into design workflows;□ □ 2. Attach and classify Point Clouds, manipulate Point Clouds, and extract features from Point Clouds. 	3
DES707	Civil Rendering	Users will learn how to: visualize civil projects, set up views and environments, integrate realistic 3D content, stamp pavement markings into drawings, visualize designs, and more.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> □ 1. Use the available tools to visualize civil projects within the Microstation design environment. □ Produce 3D renderings of projects using Microstation. 	4

DES708	ProjectWise for Power Users	The user will learn about the ProjectWise platform and how it is implemented at TxDOT. The end user will learn about the ProjectWise explorer client and how it can be used to access the different ProjectWise Data Sources at TxDOT.	Upon completion of the course participants will be able to: <ul style="list-style-type: none"> □ 1. Explain the ProjectWise platform.□ □ 2. Use ProjectWise to store and access documents and design files.□ □ 3. Modify file structure and user access lists as required.□ 	8
DES709	ProjectWise for End Users	The user will learn about the ProjectWise platform and how it is implemented at TxDOT. The end user will learn about the ProjectWise explorer client and how it can be used to access the different ProjectWise Data Sources at TxDOT.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Store and access documents and design files using ProjectWise. 	8
DES720	GPS Basic Data Collect-GIS Map	Provides instruction in basic GPS concepts, field data collection (1-5 m & meter accuracy), post-processing techniques & exporting collected data to a GIS. The curriculum in this course is aimed specifically at GIS applications & covers PFO v. 5.4.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Explain GPS concepts; □ □ 2. Use TxDOT supported GPS hardware and software; □ □ 3. Organize information for a database; □ □ 4. Conduct mapping sessions; □ □ 5. Collect GPS data in real-time and autonomously; □ □ 6. Post-process autonomous data;□ □ 7. Create waypoints; □ □ 8. Navigate with GPS; □ □ 9. Export data to a GIS; and □ □ 10. Provide metadata for each project. 	20
DES728	GEOPAK Corridor Modeling - 3D	Covers 3D design tools within the department's engineering applications, GEOPAK Corridor Modeling roadway design software & Microstation v. V8i/SS2. Design process supersedes the Proposed Cross Sections with Criteria portion in GEOPAK II training.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> □ 1. Perform all aspects of Corridor Modeling - 3D Design.□ □ 2. Create templates.□ □ 3. Apply point constraints, end conditions, and parametric constraints.□ □ 4. Apply style constraints, name overrides, and alternate surfaces.□ □ 5. Utilize tools within roadway designer.□ □ 6. Apply temporary dimension lines, key stations, and point controls.□ □ 7. Apply template transitions, super-elevations, and end condition exceptions.□ □ 8. Utilize overlay and stripping components in conjunction with cross slope optimization.□ □ 9. Apply vertical adjustment settings, smooth and apply adjusted vertical alignment.□ □ 10. Utilize multi-center curves target aliasing and corridor clipping options. 	32
DES729	GEOPAK Survey	GEOPAK ensures consistency & accuracy of survey data from initial field collection to construction staking. Course reviews data collected in the field, edits survey data & creates design files in MicroStation v. V8i/SS2.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Create projects in GEOPAK Survey; □ □ 2. Import data from Survey Data Management System (SDMS) and other raw survey data format; □ □ 3. Become familiar with coordinate geometry; □ □ 4. Become familiar with Digital Terrain Models (DTMs), contouring, and cross-sections; □ □ 5. Create parcels, perform area computations, and generate metes and bounds notes; □ □ 6. Create horizontal alignments; □ □ 7. Translate data between coordinate systems; □ □ 8. Generate reports; □ □ 9. Upload control files to SDMS; □ □ 10. Create MicroStation design files for use with GEOPAK 	20

DES730	GEOPAK I	This course provides instruction in utilizing GEOPAK for roadway design and construction plan set creation. Course covers Microstation v. V8i/SS2 (Current training materials introduced May 2013).	Upon completion of this course, participants will be able to: 1. Utilize Project Manager as a workflow guide; 2. Become proficient in using coordinate geometry commands; 3. Create and store horizontal alignments; 4. Use the Design and Computation Manager to store roadway features and calculate quantities; 5. Extract topographical data from a Digital Terrain Model (DTM); 6. Calculate original ground profiles; 7. Generate original ground cross-sections; 8. Create and store vertical alignments; and 9. Prepare construction plan sheets.	32
DES731	GEOPAK II	Advanced instruction in utilizing GEOPAK roadway design software. Participants must bring GEOPAK I manual to class & be able to perform all aspects of GEOPAK covered in GEOPAK I training. Course covers Microstation v. V8i/SS2.	Upon completion of this course, participants will be able to: 1. Calculate super-elevation; <input type="checkbox"/> 2. Utilize criteria to define design cross-sections; <input type="checkbox"/> 3. Calculate earthwork; <input type="checkbox"/> 4. Create custom reports; <input type="checkbox"/> 5. Place and label utilities on design cross-sections; <input type="checkbox"/> 6. Use 3-D modeling tools; <input type="checkbox"/> 7. Create 3-D cross-sections; and <input type="checkbox"/> 8. Create B-spline surfaces.	32
DES733	Survey Data Management Sys	This is a hands-on course designed to instruct students on collecting, editing and processing survey data collected in the field using a total station, digital level or automatic level with AASHTO SDMS and create a file for exporting to a CAD software.	Upon completion of this course, participants will be able to: 1. Identify software structure, settings, and tolerances; <input type="checkbox"/> 2. Identify various surveying tasks; <input type="checkbox"/> 3. Establish control and control files; <input type="checkbox"/> 4. Perform various calculations; and <input type="checkbox"/> 5. Generate alignments and stakeout reports.	32
DES734	AASHTO SDMS Training	This course features Dr. Ray Hintz, who will provide information on survey data collection and processing which TxDOT has adopted.	Upon completion of this course, the participant will be able to: 1. Assist in the implementation of the SDMS Collector; <input type="checkbox"/> 2. Assist in the implementation of the SDMS Processor.	12
DES738	GEOPAK Drainage	This course will teach TxDOT designers how to design and analyze drainage systems using GEOPAK Drainage. Course covers Microstation v. V8i/SS2 (Current training materials introduced May 2013).	Upon completion participants will be able to: 1. Design and analyze drainage systems; and <input type="checkbox"/> 2. Integrate hydraulic designs with roadway designs.	24
DES739	ArcGIS - Arcinfo	Intro to geographic information systems (GIS) technology & the use of ArcGIS Desktop v. 10 software for mapping & analyzing spatial data. Covers principles & techniques of general GIS technology & spatial data using the ArcView module of ArcGIS.	Upon completion of the course, participants will be able to: 1. Understand general GIS principles <input type="checkbox"/> 2. Recognize, gather, input, query, edit, analyze and display spatial data using ArcGIS <input type="checkbox"/> 3. Work with point, line, polygon and dynamic segmentation features <input type="checkbox"/> 4. Create new data layers <input type="checkbox"/> 5. Utilize single-source data from TSD's enterprise geodatabases <input type="checkbox"/> 6. Create, maintain, manage, plan, design, report and monitor GIS projects that use TxDOT data	20
DES740	GPS/RTK Survey	Global Positioning System (GPS) surveying procedures for Real Time Kinematic surveys. Covers basic theory, prep of files, equipment setup, data analysis & exporting a final product. Uses Trimble Access v. 2013.42.	Upon completion of the course, participants will be able to: 1. Use Trimble equipment for topographical and other TxDOT level 3 and 4 surveys; <input type="checkbox"/> 2. Load necessary files into the data collector, set up the equipment and perform the survey; <input type="checkbox"/> 3. Download the data, review and edit the data and export it to the design software.	20

DES799	One-Dimensional Modeling of River Encroachments with HEC-RAS (NHI-135041)	Application of HEC-RAS software, developed by the Hydrologic Engineering Center of the U.S. Army Corps of Engineers. Modeling principles and techniques will be presented using the latest version of HEC-RAS.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> 1. Manage HEC-RAS files. 2. Navigate the HEC-RAS windows. 3. Describe the types of hydraulic modeling situations for which one-dimensional application of HEC-RAS is appropriate. 4. Describe one-dimensional hydraulic modeling principles used in HEC-RAS including conservation of energy, mass, and momentum. 5. Build input data files for use with HEC-RAS for steady state applications with and without roadway encroachments including bridges, culverts, and multiple openings. 6. Develop one-dimensional water surface elevations and velocity estimates using the HEC-RAS computer program. 7. View and manipulate the output from the HEC-RAS computer program. 8. Evaluate hydraulic conditions using HEC-RAS modeling program through various transportation related hydraulic structures including weirs, culverts, and bridges. 9. Identify and troubleshoot modeling problems, including those indicated by errors, warnings, and notes. 	24
DES800	Two-Dimensional Hydraulic Modeling of Rivers at Highway Encroachments (NHI-135095)	Intro to two-dimensional modeling concepts, background data necessary to support a model, hydraulic modeling parameters, mesh development., model simulation parameters, model calibration, hydraulic structures, and reviewing two-dimensional model results.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> 1. Recognize the differences between 1D and 2D hydraulic models 2. Use background data in SMS for 2D modeling projects 3. Use SMS to setup and run 2D models 4. Visualize and review 2D model results 5. Add structures to 2D models 6. Evaluate 2D hydraulic parameters for use in bridge scour analysis 	24
DES803	Fracture Critical Inspect -NHI 130078	Course uses current practices, while addressing new technologies available to bridge inspectors. Features hands-on workshops for popular types of nondestructive evaluation (NDE) equipment & an inspection plan case study for a fracture critical bridge.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> 1. Identify fracture critical members (FCMs) 2. Identify problematic details 3. Identify areas most susceptible to fatigue and fracture 4. Record defects 5. Evaluate defects 6. Evaluate nondestructive evaluation (NDE) methods 7. Evaluate retrofit details 	28
DES804	Safety Inspection of In-Service Bridges (NHI-130055)	Based on FHWA 2012 BIRM. Must complete 1 of these before enrollment: Engr Concepts for Bridge Inspectors (NHI 130054), Intro to Safety Inspec of In-Service Bridges (NHI 130101); or Prereq Assessment for Safety Inspec of In-Service Bridges (NHI 130101A)	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> 1. Discuss duties and responsibilities of a bridge inspector and define inspection concepts. 2. List inspection equipment needs for various types of bridges and site conditions. 3. Describe, identify, evaluate and document various components and deficiencies that can exist on bridge components and elements. 4. List design characteristics and describe inspection methods and locations for common concrete, steel and timber structures. 5. Identify and evaluate various culvert and waterway deficiencies. 6. Discuss the need to inspect underwater portions of bridges. 7. Describe non-destructive evaluation methods for basic bridge materials. 8. Demonstrate how to field inspect and evaluate common concrete, steel and timber bridges. 	80

DES805	Stream Stab/Scour Hwy Brg-NHI 135046	This comprehensive training provides preventive techniques for identifying, analyzing, and calculating various hydraulic factors that impact bridge stability.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> □ 1. Identify indicators of stream instability that can threaten bridges.□ □ 2. Identify stream types and their potential for instability problems.□ □ 3. Describe open-channel hydraulics concepts in bridge scour and stream instability analyses.□ □ 4. Define types of scour that can occur at bridge crossings.□ □ 5. Describe aggradation, degradation, and contraction scour.□ □ 6. Calculate contraction scour for live bed and clear water conditions.□ □ 7. Describe factors that influence scour at piers.□ □ 8. Calculate pier scour for three typical case studies.□ □ 9. Describe the factors that influence scour at abutments.□ □ 10. Describe how HEC-18, HEC-20, and HEC-23 provide analysis procedures for stream instability and bridge scour.□ □ 11. Perform Level I and II analyses.□ □ 12. Classify a stream using two different classification systems.□ □ 13. Conduct a qualitative analysis of stream responses.□ □ 14. Apply the HEC-18 scour equations to determine total scour at a bridge.□ □ 15. Determine the need for a Scour Plan of Action at a scour-critical bridge. 	24
DES807	Strm/Scr Instability-Ctrmeasur (NHI135048)	Overview of countermeasures to highway related failures from effects of stream instability, scour, erosion & stream aggradation & degradation problems. Includes an intro to instrumentation for scour monitoring. Prereqs are NHI 135046, 135086 & 135087.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> □ 1. Develop a plan of action for a scour critical bridge□ □ 2. Propose countermeasures for stream instability and scour problems□ □ 3. Identify countermeasures for bridge scour and stream instability using the HEC-23 countermeasures matrix□ □ 4. Design selected countermeasures with HEC-23 design guidelines. 	20
DES808	Practical Highway Hydrology (NHI-135067)	Based on HDS #2 Highway Hydrology manual, participants learn to select & implement techniques for estimating peak flows & flood hydrographs in gaged & ungaged streams for watersheds of the size typically encountered in highway drainage design.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> □ 1. Identify which peak flow design methods are suitable for given watershed characteristics and design requirements.□ □ 2. Estimate times of concentration.□ □ 3. Apply the SCS, regression and rational methods for peak flows.□ □ 4. Analyze gage flows, using Log-Pearson III Frequency Analysis.□ □ 5. Develop hydrographs, using the unit hydrograph and other techniques.□ □ 6. Perform storage routing calculations.□ □ 7. Design a storm water management facility. 	24
DES816	Des of Mhicy Stbliz Walls-NHI 132042	This Design of Mechanically Stabilized Earth Walls & Reinforced Soil Slope course covers tools & cost effective practices in the design of MSEWs using load resistance factor design (LRFD) & construction of earth retention structures.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> □ 1. Recognize potential applications for MSEWs and RSS structures for use in transportation facilities □ □ 2. Prepare conceptual and basic (i.e., for simple geometry) designs, and be able to check contractor-submitted designs for walls and slopes □ □ 3. Examine and select appropriate material properties and parameters used in design □ □ 4. Calculate the cost of conceptual MSEWs and RSS structures and determine if construction is a cost-effective option□ □ 5. Select appropriate specification/contracting method(s) and prepare detailed specifications for materials and methods of construction □ □ 6. Define and communicate major components of construction inspection of MSEWs and RSS structures to confirm compliance with design 	24

DES819	Advanced Concepts in ArcGIS De	Advanced techniques in geographic information systems (GIS) utilizing ArcGIS Desktop software for mapping and analyzing spatial data. Instruction expands on the principles and techniques covered in the Introduction to GIS - ArcView class.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Symbolize features using different types of attributes □ 2. Appropriately use label or annotations □ 3. Add map elements to a layout and modify their properties □ 4. Identify QC checks for data quality □ 5. Define a coordinate system and project/transform geographic datasets □ 6. Manage the way tables display attribute data □ 7. Apply a workflow for creating and editing features □ 8. Interpret how the hierarchical structure of environment setting can affect your workflow □ 9. Use advanced geoprocessing tools and models to conduct spatial analyses 	24
DES820	Hydro Analysis/Model w/WMS (NHI135080)	Uses data derived from geographical info systems (GIS) to develop hydrologic estimates & model runoff from watersheds. Also uses digital terrain data for development of watershed parameters required by most commonly used hydrologic analysis programs.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> □ 1. Automate basin delineation in WMS with GIS vector data, DEMs, and TINs. □ 2. Efficiently use digital watershed data for hydrologic modeling parameter development. □ 3. Locate and obtain digital data sources for watershed delineation and hydrologic model development. □ 4. Use WMS to build hydrologic input data files for use with HEC-1 (HMS), TR-20, TR-55, regional regression equations, and Rational Method programs, including instruction on how to graphically view the output. 	24
DES821	Hydraulic Design of Safe Bridges	Provides participants with an intensive training on the hydraulic analysis and design of bridges. The goal is to provide information needed to safely build bridges, while optimizing costs and limiting the impact to property and the environment.	Upon completion of this course the participant will be able to: <ul style="list-style-type: none"> 1. Describe the ways hydraulic design affects bridge performance and public safety; 2. Describe hydraulic conditions that occur in the vicinity of bridges; 3. Identify regulatory requirements and design constraints important to bridge projects; 4. Describe the input requirements for one-dimensional models; 5. Identify conditions when one-dimensional modeling is adequate to develop accurate hydraulic results for safe bridge design; 6. Describe the effects of atypical bridge hydraulic conditions on bridge design; 7. Perform a qualitative risk assessment for a bridge replacement project. 	24
DES822	Highways in the Coastal Environment	The purpose of this course is to teach important concepts and terminology of coastal science and engineering to highway engineers for use in the planning and design of coastal roads.	Upon completion of this course the participant will be able to: <ul style="list-style-type: none"> 1. Describe coastal engineering design issues related to highways using standard terminology with an understanding of the physical processes unique to this design environment; 2. Identify appropriate planning, analysis, and design methods for highways and bridges exposed to coastal surge and waves; 3. Describe differing levels of complexity involving coastal engineering and appropriate qualifications of engineers and coastal engineering consultants to address this complexity in design. 	24
DEV009	Lose and Win	The Lose and Win program (one hour, once a week for 8 weeks) will give you the fundamentals of weight loss, offer you practical everyday tips on how to lose pounds, maintain a healthy weight, and manage stress.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Estimate appropriate portion sizes; □ 2. Incorporate physical activity into everyday life; □ 3. Plan healthy meals; □ 4. Choose healthier options when dining out; □ 5. Manage stress. 	8

DEV010	Healthy Eating Every Day	An 8-week course focusing on improved health and quality of life through balanced eating. Participants will be shown how to develop skills for improved eating habits, overcoming obstacles, and setting goals. This course will be delivered by WebEx.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Incorporate dietary balance and serving sizes in their daily diet. <input checked="" type="checkbox"/> 2. Set effective goals. <input type="checkbox"/> 3. Identify and plan strategies to deal with their own eating triggers. <input type="checkbox"/> 4. Overcome obstacles to shopping for healthy foods and use food labels to assess food choices. <input checked="" type="checkbox"/> 5. Identify social support needed and plan strategies for those not supportive of new eating habits. <input type="checkbox"/> 6. Put a plan in place to prevent lapses, relapses, and collapses of healthy eating habits. <input type="checkbox"/> 7. Decipher the truth about dietary supplements and fad diets. <input checked="" type="checkbox"/> 8. Use the skills to implement a daily healthy diet.	10
DEV098	ESS Instructor-Led Training	Employee self-service instructor-led training will provide employees with a step-by-step guide for processes that employees will be able to conduct in the new PeopleSoft 9.2 system.	The objective of this course is to show employees how to: <input type="checkbox"/> 1. View and update personal information such as addresses, phone number, marital status, and emergency contact information. <input type="checkbox"/> 2. View Compensation History and Statement of Earnings. <input type="checkbox"/> 3. View and update Direct Deposit, Benefit Replacement Pay (BRP), and W4 tax information.	1
DEV103	Success at Work	This day and a half course provides employees with the techniques and tools to be successful in effective communication, customer service, and problem solving. Participants should be ready to learn and have fun at the same time.	Upon completion of the course, participants will be able to: <input type="checkbox"/> 1. Identify and describe the Communication Model <input type="checkbox"/> 2. Identify and describe the Listening Model <input type="checkbox"/> 3. Identify communication barriers <input type="checkbox"/> 4. Describe and apply problem-solving techniques <input type="checkbox"/> 5. Gain an understanding of the components of quality customer service <input type="checkbox"/> 6. Identify ways to improve customer service	12
DEV113	Myers-Briggs Type Indicator (MBTI)	This course will introduce the 16 personality types based on the work of Carl Jung, Katherine Cook Briggs, and Isabel Briggs Myers. The course will help you understand how people perceive the world and make decisions.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Complete the Myers-Briggs Assessment. <input type="checkbox"/> 2. Discuss their MBTI type. <input type="checkbox"/> 3. Describe their preferences and the preferences of others. <input type="checkbox"/> 4. Identify ways to use differences constructively.	4
DEV115	Practical Supervision	Provides practical tools & techniques for supervising employees. Topics include multi-generational workforce, team building, Situational Supervisor Model, GROW coaching, Performance Management Rated Factors, leadership & motivation.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Identify your Supervisory skills and how to improve them. <input type="checkbox"/> 2. Identify the differences in our multi-generational workforce. <input type="checkbox"/> 3. Apply the principles of Situational Supervision in your supervisory duties. <input type="checkbox"/> 4. Identify strategies to motivate employees. <input type="checkbox"/> 5. Describe strategies to build an effective team. <input type="checkbox"/> 6. Apply the concepts of the Four Stages of Team Development to your team. <input type="checkbox"/> 7. Apply the concepts of the GROW coaching module to coach your team. <input type="checkbox"/> 8. Practice developing employee responsibilities. <input type="checkbox"/> 9. Practice documenting and rating evaluations.	20
DEV116	7 Habits of Highly Eff People®	The 7 Habits of Highly Effective People® is a three day instructor-led course that helps employees improve interpersonal communication, take initiative, establish greater trust, strengthen relationships, increase influence, and balance key priorities.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Identify the principles underlying personal and interpersonal effectiveness. <input type="checkbox"/> 2. Identify reactive behaviors and develop proactive responses that increase your circle of influence. <input type="checkbox"/> 3. Develop a Personal Mission Statement. <input type="checkbox"/> 4. Develop and implement a weekly plan of prioritized tasks based on your mission, roles, and goals. <input type="checkbox"/> 5. Demonstrate through role-play courage and consideration to create mutual benefit to build an effective long-term relationship. <input type="checkbox"/>	24

			<p>6. Create a Win-Win agreement. <input type="checkbox"/></p> <p>7. Apply listening skills to improve knowledge and understanding. <input type="checkbox"/></p> <p>8. Apply the principle that diagnosis precedes prescription when listening. <input type="checkbox"/></p> <p>9. Utilizing win-win thinking and empathetic communication skills to create synergy in a personal and professional situation.</p>	
DEV119	Training Basics for Trainers	This course explores the fundamental skills of a trainer. Participants will learn elements of class preparation, adult learning principles, learning styles, classroom management techniques, working with group activities, and training evaluation.	<p>By the end of this course participants will be able to:</p> <ol style="list-style-type: none"> 1. Identify and build upon the attributes of an effective trainer. 2. Develop strategies for handling disruptive participants. 3. Explore trainer tips, tricks, and traps. 4. Demonstrate a variety of training techniques. 	20
DEV120	Training Curriculum Design	Focuses on curriculum development process flow, research, delivery methods, curriculum development plan, style guide standards, learning objectives & instructional methods. Completion is a requirement for the TxDOT Instructor Certification Program.	<p>Upon completion of this course, participants will be able to: <input type="checkbox"/></p> <ol style="list-style-type: none"> 1. Identify and apply design techniques using a Curriculum Development Plan; <input type="checkbox"/> 2. Demonstrate Storyboarding techniques of the curriculum design stage; <input type="checkbox"/> 3. Design engaging training curriculum; <input type="checkbox"/> 4. Design a class using behavioral learning objectives which are measurable. 	40
DEV121	Training Curriculum Development	Individual project-based course for developers who completed DEV120. Must complete minimum 2 of: Enhancing Writing Skills, Using PowerPoint to Develop Training Guides, Finalizing Course Materials or	<p>Upon completion of this course, participants will be able to: <input type="checkbox"/></p> <ol style="list-style-type: none"> 1. Improve individual writing skills with more direct and concise strategies and practice (Topic: Enhancing Writing skills); <input type="checkbox"/> 2. Improve technical writing skills for course development (Topic: Developing Technical/performance-based manuals); <input type="checkbox"/> 3. Develop engaging PowerPoint training guides; <input type="checkbox"/> 4. Finalize course materials for production. 	12
DEV122	Training Coordination and Collaboration	Designed for employees who have an impact on Training at TxDOT, especially District Training Liaisons, Division Training Coordinators, Field Training Coordinators to clarify tasks, roles & responsibilities, and to improve teamwork in WFD.	<p>Upon completion of this course, participants will be able to:</p> <ol style="list-style-type: none"> 1. Define what training is in your own words; 2. Explain why training is important to TxDOT's values, mission, and objectives; 3. Describe the types of training offered at TxDOT; 4. Explain Bloom's taxonomy and its role in training; 5. Explain the Kirkpatrick model for training evaluation; 6. Explain the ADDIE model of training lifecycle; 7. Identify the training roles and how they fit in the ADDIE model (e.g. trainer, instructional system designer, division training coordinator); 8. Discuss the tasks needed to prepare for, set-up, implement, and close a class; 9. Share solutions to common problems faced in coordinating training; 10. Locate job aids for using the "PeopleSoft Training and Development" system to support employee training and class coordination. 	8
DEV123	Professional Development	This project-based course is initiated by WFD for employees who are being mentored, coached, and encouraged to practice new skills gained in TxDOT courses. The projects change according to the purpose of course. Participants will enroll through WFD only.	<p>Upon Completion of this course the participant will be able to:</p> <ol style="list-style-type: none"> 1. Practice the skills outlined by WFD; 2. Demonstrate understanding of adult learning principles; 3. Apply adult training concepts to a TxDOT project; 4. Apply adult learning principals to a training project; 5. Use the ADDIE model in support of adult learning. 	8

DEV125	Five Choices to Extraordinary Productivity	This course measurably increases productivity of individuals, teams, and organizations. Participants make more selective, high-impact choices about where to invest their valuable time, attention, and energy.	<p>Upon completion of this course, participants will be able to:</p> <ul style="list-style-type: none"> 1. Understand the key productivity problems of the 21st century. <input type="checkbox"/> 2. Articulate the language and methodology of "discerning" important from less important. <input type="checkbox"/> 3. Structure what extraordinary looks like in their current, most important roles. <input type="checkbox"/> 4. Explore how to manage appointments, tasks, contacts, notes and documents. <input type="checkbox"/> 5. Understand the impact of brain health and the five energy drivers on day-to-day performance. <input type="checkbox"/> 6. Put together a process for implementing the five choices. 	8
DEV126	Area Engineer Program	This course will provide TxDOT Area Engineers with a foundation of essential concepts. Personal mastery, team building, personnel management, project based learning and technical topics will be covered in the course.	<p>Upon completion of this course, participants will be able to:</p> <ul style="list-style-type: none"> 1. Produce a team project through collaboration in a team environment. <input type="checkbox"/> 2. Identify general duties and responsibilities of an Area Engineer. <input type="checkbox"/> 3. Develop and deliver an effective presentation. <input type="checkbox"/> 4. Apply TxDOT safety, personnel management, public affairs and policies/procedures to everyday work. <input type="checkbox"/> 5. Integrate Area Engineer best practices by networking with other Area Engineers in the state. <input type="checkbox"/> 6. Prepare and conduct critical employee conversations. 	16
DEV127	TxDOT-AASHTO Leadership Training	This course was designed to provide grounding in fundamentals as well as more sophisticated concepts and practices in the management of transportation department operations. This course emphasizes the challenges of administering complex organizations.	<p>Upon completion of this course, participants will be able to:</p> <ul style="list-style-type: none"> 1. Apply specific techniques to sustain the performance of a high-performing team <input type="checkbox"/> 2. Categorize his/her personality typology using a specific personality assessment instrument <input type="checkbox"/> 3. Apply the understanding of personality inventory results to work performance situations <input type="checkbox"/> 4. Differentiate between interpersonal and team personality dynamics <input type="checkbox"/> 5. Describe aspects of my Leadership/Change Style Profile <input type="checkbox"/> 6. Describe mentoring in his/her own words as distinct from supervision and coaching <input type="checkbox"/> 7. Practice leadership skills drawn from personality typology, Leadership/Change Style profiling and mentoring <input type="checkbox"/> 8. Describe the tenets of Listening Practices <input type="checkbox"/> 9. Exercise Listening Practices during role-playing and other training events <input type="checkbox"/> 10. Describe the principles of impactful presentations <input type="checkbox"/> 11. Define what it means to say the organization has a "Culture of Accountability" <input type="checkbox"/> 12. Describe challenges and opportunities in leading a multigenerational workforce <input type="checkbox"/> 13. Create a team presentation about a relevant and topical policy issue accepted by senior organization leaders <input type="checkbox"/> 14. Explain the role of creativity in decision making <input type="checkbox"/> 15. Explain organizational culture change in his/her own words <input type="checkbox"/> 16. Explain the Five Step Organizational Change Model <input type="checkbox"/> 17. Explain how to lead the Seven Stages of Change Transition <input type="checkbox"/> 18. Construct a Change Communication Plan <input type="checkbox"/> 19. Discuss time management in the context of work-life balance <input type="checkbox"/> 20. Explain the Eight Step Conflict Resolution Model <input type="checkbox"/> 21. Create four Individual Implementation Plans that can be executed within the next 12 months <input type="checkbox"/> 	64

			<p>22. Create and deliver an impactful team presentation about a relevant and topical policy issue accepted by senior organization leaders <input type="checkbox"/></p> <p>23. Resolve interpersonal conflict in a high performance team dynamic <input type="checkbox"/></p>	
DEV128	Feedback Workshop	Providing effective feedback is a critical communications task in all interpersonal relationships. This workshop defines a model of "holistic feedback" and practices two simple formats for communicating feedback.	<p>Upon completion of this course, participants will be able to:</p> <ol style="list-style-type: none"> 1. Explain what "holistic feedback" is. (RECALLING, UNDERSTANDING) 2. Analyze how "holistic feedback" serves communications during situational supervision, coaching, mentoring, counseling and collaborative resolution (UNDERSTANDING, ANALYZING) 3. Explain the "Sandwich Method" for communicating (RECALLING) 4. Modify the "Sandwich Method" to be a feedback model (APPLYING) 5. Explain the "STAR" Model for communicating (RECALLING) 6. Modify the "STAR" Model to be a feedback model (APPLYING) 7. Choose a holistic feedback model to use during a role play scenario (UNDERSTANDING, EVALUATING) 8. Deliver holistic feedback using one of the models covered in the forum (APPLYING) 9. Provide actionable feedback to someone delivering holistic feedback (EVALUATING) 	3
DEV201	NEO Cultural Diversity - TxDOT	Cultural Diversity is designed to inform new employees how to recognize and address diversity issues and familiarize new employees with TxDOT policies dealing with diversity situations.	<p>Upon completion of the course, participants will be able to: <input type="checkbox"/></p> <ol style="list-style-type: none"> 1. Understand the meaning of valuing diversity in the workplace. <input type="checkbox"/> 2. Be more aware of their surroundings. <input type="checkbox"/> 3. Explain the association between biases, assumptions, prejudices and stereotyping. <input type="checkbox"/> 4. Generate ideas about how we can eliminate discrimination. <input type="checkbox"/> 5. Explain diversity as it affects TxDOT. 	1.5
DEV202	NEO Sexual Harassment & Griev	Sexual Harassment is designed to inform new employees of EEO laws, directives, regulations and Affirmative Action Program incentives.	<p>Upon completion of this course, the participant will be able to: <input type="checkbox"/></p> <ol style="list-style-type: none"> 1. Define the two types of sexual harassment. <input type="checkbox"/> 2. Describe types of evidences for determining sexual harassment. <input type="checkbox"/> 3. Identify potential liability for sexual harassment. <input type="checkbox"/> 4. Discuss EEOC guidelines for preventing sexual harassment. <input type="checkbox"/> 5. Identify corrective actions included in the TxDOT sexual harassment policy. <input type="checkbox"/> 6. Identify TxDOT procedure for handling a sexual harassment complaint. 	1
DEV204	NEO ADA - Non-Supervisors	ADA is designed to cover the Americans with Disabilities Act and TxDOT's reasonable accommodation policy and procedures.	<p>Upon completion of the course, participants will be able to: <input type="checkbox"/></p> <ol style="list-style-type: none"> 1. Identify groups covered by ADA. <input type="checkbox"/> 2. Define key ADA legal terms. <input type="checkbox"/> 3. Distinguish between essential and marginal job functions. <input type="checkbox"/> 4. Describe TxDOT's reasonable accommodation policy. 	4
DEV212	Executive New Employee Orient	Designed as an executive-level overview to familiarize new executives with TxDOT organization, benefits, policies & procedures. This course is provided at the discretion of the Director of Human Resources.	<p>Upon completion of this course, participants will be able to: <input type="checkbox"/></p> <ol style="list-style-type: none"> 1. Describe the Grievances Process. <input type="checkbox"/> 2. Explain the TxDOT guidelines for reporting sexual harassment and related improper conduct on the job. <input type="checkbox"/> 3. Explain the implications of the substance abuse policy on and off the job. <input type="checkbox"/> 4. Describe the Violence Prevention Program. <input type="checkbox"/> 5. List the programs within Employee Outreach 	16

DEV213	Executive Performance Mgt	Designed as an executive-level overview to assist new executives in administering the department's performance management process within their scope of accountability. This course is provided at the discretion of the Director of Human Resources.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Explain the purpose of performance management <input type="checkbox"/> 2. Implement the department's performance management policy. <input type="checkbox"/> 3. Review the four phases of employee evaluations.	1
DEV214	Executive Progressive Discipli	Designed as a executive-level overview to assist new executives in administering the department's disciplinary action process within their scope of accountability. This course is provided at the discretion of the Director of Human Resources.	Upon completion of this course participants will be able to: <input type="checkbox"/> 1. Explain and implement disciplinary action according to TxDOT policy. <input type="checkbox"/> 2. Define specific expectations on the Disciplinary Action Letter to move employees from disciplinary action to high performance. <input checked="" type="checkbox"/> 3. State the two types of disciplinary processes. <input type="checkbox"/> 4. Review department disciplinary actions. <input type="checkbox"/> 5. Explain the purpose of administrative leave. <input type="checkbox"/> 6. Rescind a Disciplinary Action Letter.	1
DEV215	Recruiting and Hiring- Executive	Provides hiring mgrs with procedures & best practices for screening, interviewing & hiring the best candidate. Should complete DEV044 ERP Managing Recruitment and Hiring prior to class.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Discuss current HR policy for recruiting, screening, interviewing, and onboarding. <input type="checkbox"/> 2. Provide overview of the process for creating and posting a Job Opening. <input type="checkbox"/> 3. Provide overview for screening applications for job-related education, experience, and competencies. <input type="checkbox"/> 4. Apply the Standard Rating Criteria for scoring interview questions.	1
DEV216	Leadership One	A 3 month course offering skills to enhance leadership strengths in leading, & strategies for building professional relationships. Course includes team building, project based learning & self-reflection. Application required. See notes & attachments.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. To develop the skills of motivated, emerging leaders, empowering them to address the challenges of TxDOT's ever-changing environment. <input type="checkbox"/> 2. To enable leaders to work collaboratively through effective communication and teamwork. <input type="checkbox"/> 3. To instill all participants with the organization's core values and mission. <input type="checkbox"/> 4. To develop and improve leadership skills through the implementation of varied tools and techniques for personal mastery.	16
DEV220	Progressive Discipline	This course provides supervisors with the knowledge and skills to effectively handle poor employee performance. Course includes: a technique for counseling employees, proper documentation strategies, and how to initiate a disciplinary action in ERP.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Evaluate their team for potential problems associated with a lack of ability. <input type="checkbox"/> 2. List five ways to overcome performance problems associated with a lack of ability. <input type="checkbox"/> 3. Describe options available before disciplinary action. <input type="checkbox"/> 4. Plan a counseling session. <input type="checkbox"/> 5. Use the Painless Performance improvement model to address performance issues. <input type="checkbox"/> 6. Document the counseling and discipline process correctly. <input type="checkbox"/> 7. Describe the types of disciplinary actions.	8
DEV222	Commission/Admin Ethic/Compl	This course covers ethics law, policies and the department internal compliance program. It is customized for commission members, commission staff, and department administration.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Identify resources to answer questions; <input type="checkbox"/> 2. Use resources to make decisions; <input type="checkbox"/> 3. Interpret decisions organizational impact.	1

DEV225	New Employee Orientation	This instructor-led course provides new employees with the opportunity to explore TxDOT's basic organizational structure and culture, employee-centered programs and services, community connections, and other considerations for new employment.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> 1. Recognize TxDOT's organizational culture and structure <input type="checkbox"/> 2. Recognize TxDOT's mission, goals, and values <input type="checkbox"/> 3. Recognize TxDOT's connections with Texas communities <input type="checkbox"/> 4. Recognize their role and responsibilities within TxDOT's organization <input type="checkbox"/> 5. Recognize TxDOT's websites and local resources for various organizations and programs <input type="checkbox"/> 6. Recognize employee-centered TxDOT programs and services <input type="checkbox"/> 7. Review TxDOT's Safety Program, Ethics Policy, Equal Employment Opportunity, acceptable use of IT resources, Media Relations, and Public Information Law <input type="checkbox"/> 8. Review and discuss TxDOT's Substance Abuse and Violence Prevention policies <input type="checkbox"/> 9. Experience a positive, informative, and welcoming New Employee Orientation. 	8
DEV226	Championing Diversity	The Franklin Covey Championing Diversity© class helps participants learn how to increase understanding, deepen trust, communicate more productively, achieve higher levels of collaboration, and boost creativity and innovation together.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> 1. Define diversity. <input type="checkbox"/> 2. Describe the importance of a diverse workforce. <input type="checkbox"/> 3. Link leveraging diversity to business results. <input type="checkbox"/> 4. Adjust to changing demographics. <input type="checkbox"/> 5. Challenge unproductive beliefs and stereotypes. <input type="checkbox"/> 6. Explain the value of each employee's unique contribution. <input type="checkbox"/> 7. Lead and work effectively with diverse teams. 	8
DEV227	Foundations of Trust	Participants discover how to communicate transparently with peers and managers; improve their track record of keeping commitments; focus on improving internal "customer service" with others who depend on their work and build team trust.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> 1. Increase personal credibility. <input type="checkbox"/> 2. Increase trust with key stakeholders. <input type="checkbox"/> 3. Exhibit behaviors that increase trust. <input type="checkbox"/> 4. Create an environment of high trust that will increase creativity, innovation, and a greater commitment to achieving results. 	8
DEV228	Managing Millennials	Discover a framework that enables managers to diagnose individual millennial challenges and apply skills proven to make a difference with millennial employees.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> 1. Gain a deeper understanding of the generational differences in the workforce. <input type="checkbox"/> 2. See why millennials are more different than any other generation managed. <input type="checkbox"/> 3. Increase job satisfaction for all employees. <input type="checkbox"/> 4. Unleash the creativity and potential of millennial employees. <input type="checkbox"/> 5. Discover nine skills to increase overall successful management. 	4
DEV229	Leading Across Generations	This course will help leaders recognize the importance of putting generational differences to work in finding more creative solutions to problems, fostering productive dialog, and engaging team members in giving their highest and best contributions.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> 1. Gain an understanding of the specific differences between the four generations in today's workforce. <input type="checkbox"/> 2. Learn why the typical approaches no longer work with four generations in the workplace and what does. <input type="checkbox"/> 3. Discover how stereotyping hinders communication and engagement. <input type="checkbox"/> 4. Resolve the sticking points where in one generation's style or perspective conflicts with those of another generation. <input type="checkbox"/> 5. Understand the eleven (11) most common generational sticking point scenarios using the included reference cards to find solutions. <input type="checkbox"/> 6. Learn to engage the "whole person" in helping team members from every generation apply their unique talents and contributions. <input type="checkbox"/> 7. Know how to conduct a "Whole-Person Engagement Conversation" to identify areas for improving enagement. 	4

DEV231	Leading at the Speed of Trust	Trust has been considered a "soft issue," yet new research is turning this age-old assumption on its head demonstrating that trust has a measurable, observable, and relevant effect on an organization's bottom line.	Upon completion of this course, participants will be able to: 1. Choose to make building trust an explicit goal of their work. 2. Learn how others perceive their trustworthiness from their personal TQ report. 3. Understand the real, measurable Trust Taxes they might be paying without realizing it. 4. Change Trust Taxes to Trust Dividends, which are the benefits that come from growing relationships of trust. 5. Make action plans to built Trust Accounts with all the key stakeholders. 6. Begin using the Language of Trust as an important cultural lever.	16
DEV232	EEO and EEO Inquiry Training	Provides individuals with an explanation of the EEO process, including EEO definition, different types of EEO complaints, the formal EEO employee reporting structure by inquiry type, and reporting responsibility along with contact information.	Upon completion of this course, the participant will be able to: 1. Explain what EEO means. 2. Define the different types of EEO complaints. 3. Differentiate between the formal EEO complaints. 4. Formal EEO reporting structure by query type. 5. Identifies the human resources representative responsibility for the EEO process. 6. Provides important contact information for the Ethics and EEO section at TxDOT.	1
DEV234	Generational Diversity	This course will allow participants to gain an understanding of generational diversity, characteristics of each generation, and help participants apply effective strategies to work with the various generations in the workplace.	Upon completion of this course learners will be able to: 1. Define what diversity is. 2. Identify diversity categories other than race and gender. 3. Describe the importance of a diverse workplace. 4. Understand what defines a generation. 5. Identify characteristics and gain a better understanding of the four generation. 6. Challenge unproductive beliefs and stereotypes. 7. Explain the value of each employee's contribution. 8. Gain a deeper understanding of generational diversity.	8
DEV240	Recruiting and Hiring	Course provides hiring managers and designees with the policies, procedures and best practices associated with screening, interviewing and hiring the best candidate.	Upon completion of this course, participants will be able to: 1. Identify and discuss current HR policy for recruiting, screening, interviewing, and onboarding. 2. Develop job-related, legally-defensible interview questions. 3. Identify the benefits and limitations of a job simulation and interview panel. 4. Screen applications for job-related education, experience, and competencies. 5. Conduct an effective interview. 6. Apply the Standard Rating Criteria for scoring interview questions. 7. Discuss requirements for onboarding new employees' performance expectations.	5
DEV241	Lead Self	Develops a base of personal leadership skills for front-line employees such as operators, admin & technical experts. Requires ongoing participation over four months for leadership sessions, on-line courses, on the job activities & coaching sessions.	Upon completion of this course, participants will be able to: 1. Manage self; 2. Use communication techniques; 3. Solve problems; 4. Focus on performance; 5. Improve teamwork; 6. Manage change leadership.	4 months
DEV242	Lead Others	Builds team leadership skills for small & complex group leaders & those with direct/indirect supervisory responsibilities. Requires participation over 4 months of leader-led sessions, on-line courses, on the job activities & coaching sessions.	Upon completion of this course, participants will be able to: 1. Manage self; 2. Use communication techniques; 3. Solve problems; 4. Focus on performance; 5. Improve teamwork; 6. Manage change leadership; 7. Think strategically; 8. Increase business knowledge.	4 months

DEV243	Lead Self-Coaching	Develops coaching skills to support assigned Lead Self participant. Includes a coaches role, coaches checklist and planning for coaches sessions. Provides guidance on setting expectations by both participant and coach.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Manage self; <input type="checkbox"/> 2. Use communication techniques; <input type="checkbox"/> 3. Solve problems; <input type="checkbox"/> 4. Focus on performance; <input type="checkbox"/> 5. Improve teamwork; <input type="checkbox"/> 6. Manage change leadership; <input type="checkbox"/> 7. Think strategically; <input type="checkbox"/> 8. Increase business knowledge.	4 months
DEV244	Lead Others-Coaching	Develops coaching skills to support assigned Lead Others participant. Includes a coaches role, coaches checklist and planning for coaches sessions. Provides guidance on setting expectations by both participant and coach.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Manage self; <input type="checkbox"/> 2. Use communication techniques; <input type="checkbox"/> 3. Solve problems; <input type="checkbox"/> 4. Focus on performance; <input type="checkbox"/> 5. Improve teamwork; <input type="checkbox"/> 6. Manage change leadership; <input type="checkbox"/> 7. Think strategically; <input type="checkbox"/> 8. Increase business knowledge.	4 months
DEV245	Lead TxDOT	A field and forum course designed to provide ongoing leadership skill development and build industry knowledge/awareness through cross-functional interactions and activities.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Manage self; <input type="checkbox"/> 2. Use communication techniques; <input type="checkbox"/> 3. Solve problems; <input type="checkbox"/> 4. Focus on performance; <input type="checkbox"/> 5. Improve teamwork; <input type="checkbox"/> 6. Manage change leadership; <input type="checkbox"/> 7. Think strategically; <input type="checkbox"/> 8. Increase business knowledge.	4 months
DEV246	PEPS Academy	A field and forum course designed to clarify performance expectations and provide necessary tools for success in the PEPS division.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Manage self; <input type="checkbox"/> 2. Use communication techniques; <input type="checkbox"/> 3. Solve problems; <input type="checkbox"/> 4. Focus on performance; <input type="checkbox"/> 5. Improve teamwork; <input type="checkbox"/> 6. Manage change leadership; <input type="checkbox"/> 7. Think strategically; <input type="checkbox"/> 8. Increase business knowledge.	4 months
DEV247	Extraordinary Leader Workshop	The Extraordinary Leader Workshop takes a strength based approach to leadership development, helping organizations develop leaders who produce and accelerate positive business outcomes.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Use the 360 feedback survey to identify leadership strengths from peers and direct reports; <input type="checkbox"/> 2. Use the Overall Leadership Effectiveness Index to compare the participant's score against global norms; <input type="checkbox"/> 3. Use the Competency Companion Development Guide; <input type="checkbox"/> 4. Create an action-oriented development plan that facilitates goal setting & follow through; <input type="checkbox"/> 5. Apply leadership development in daily, on-the-job activities.	8
DEV248	Situational Leadership	A one day course designed to provide attendees with practical techniques for successfully leading a group of employees. Incorporating Proactive Leadership, Situational Supervision, Types and Styles of Communication, Planning and Scheduling, and Ethics.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Assess the impact of leadership roles on decision making <input type="checkbox"/> 2. Apply the principles of Situational Supervision in your leadership duties <input type="checkbox"/> 3. Apply communication styles of effective leadership <input type="checkbox"/> 4. Promote ethical decision making among their team <input type="checkbox"/> 5. Apply the time management and planning methods to improve the quality of work produced by themselves and their team	7
DEV260	NEO - Substance Abuse	Substance Abuse is designed to provide new employees with information regarding substance abuse in general, as well as the department's substance abuse policy and program.	Upon completion of the course, participants will be able to: <input type="checkbox"/> 1. Realize the impact of substance abuse in the workplace. <input type="checkbox"/> 2. Define "enabling" and list some of the ways enabling can occur in the workplace. <input type="checkbox"/> 3. Identify co-worker responsibilities. <input type="checkbox"/> 4. Identify prohibited activities and related administrative/disciplinary actions described in TxDOT's substance abuse policy. <input type="checkbox"/> 5. Identify the types of drug and alcohol testing required for department employees.	1

DEV261	Sub Abuse - Commercial Drivers	This course provides commercial drivers with essential information regarding the unique requirements for commercial drivers under the department's substance abuse policy.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> 1. Explain the reason they are subject to drug and alcohol testing. □ 2. List and describe the types of testing they are subject to. □ 3. List the types of substance they will be tested for. □ 4. Describe drug and alcohol testing procedures. □ 5. Identify the consequences of positive test results. □ 6. Describe the mandatory referral process. □ 7. List the additional prohibitions commercial drivers are subject to. □ 8. List the reasons commercial drivers can be terminated under this policy. 	1
DEV262	Sub Abuse - Safety Sensitive	This course provides employees in safety sensitive positions with essential information regarding the unique requirements for safety sensitive employees under the department's substance abuse policy.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> 1. Explain the reason they're subject to drug and alcohol testing. □ 2. List and describe the types of testing they are subject to. □ 3. List the types of substances they will be tested for. □ 4. Describe drug and alcohol testing procedures. □ 5. Identify the consequences of positive test results. □ 6. Describe the mandatory referral process. □ 7. List the additional prohibitions safety sensitive employees are subject to. □ 8. List the reasons safety sensitive employees can be terminated under this policy. 	1
DEV263	Sub Abuse - Crew Members	This course provides ferry vessel crewmembers with essential information regarding the unique requirements for crewmembers under the department's substance abuse policy.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> 1. Explain the reason they are subject to drug and alcohol testing. □ 2. List and describe the types of testing they are subject to. □ 3. List the types of substance they will be tested for. □ 4. Describe drug and alcohol testing procedures. □ 5. Identify the consequences of positive test results. □ 6. Describe the mandatory referral process. □ 7. List the additional prohibitions that crewmembers are subject to. □ 8. List the reasons crew members could be terminated under this policy. 	1
DEV264	Maintenance Leadership Development Program	Developing outstanding leaders in the field of maintenance for today and the future. This course will focus on formal class training, topical discussions and field studies, scheduled organizational rotations, and methods and technologies.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> 1. Describe and use basic and advanced leadership skills; □ 2. Provide mentoring, coaching, and counseling skills to their employees; □ 3. Apply skills in budgeting, planning, equipment use, and materials selection; □ 4. Demonstrate application of learning by participating in a cycle of rotations; □ 5. Develop a team work model for use within maintenance operations. 	6 months
DEV265	Leadership to the Third Power (L3) - Rootin' Tootin' Boot Camp	Designed specifically for supervisors & managers within Engineering Operations & modeled after the principles of the One Minute Manager by Ken Blanchard & Spencer Johnson. Focus on daily ops, project monitoring & performance feedback.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> 1. Describe and compare basic leadership theories and change management techniques so that they are successful in their jobs; □ 2. Apply new tools for supervision and management to be used for day-to-day operation; □ 3. Demonstrate new skills for managing and supervising employees. 	16

DEV266	Substance Abuse - SCOs	Provides an overview of the TxDOT substance abuse program to Substance Control Officers (SCOs) with recent changes to the program, policy & procedures and particular emphasis on reasonable cause testing requirements.	<p>Upon completion of this course, participants will be able to: <input type="checkbox"/></p> <ol style="list-style-type: none"> 1. Provide an overview of the substance abuse program and available resources. <input type="checkbox"/> 2. List the five employee types covered by the substance abuse policy. <input type="checkbox"/> 3. Describe the prohibitions and administrative/disciplinary actions for each employee type. <input type="checkbox"/> 4. Identify steps of the mandatory referral process and mandatory referral requirements. <input type="checkbox"/> 5. Describe reasons for termination under this policy and discuss the termination process. <input type="checkbox"/> 6. Explain the role and responsibilities of the Employee Assistance Program (EAP). <input type="checkbox"/> 7. Access and complete the required substance abuse program forms. <input type="checkbox"/> 8. Make post-accident determinations using the Post-Accident Determination Checklist <input type="checkbox"/> 	8
DEV267	Substance Abuse - Supervisors	Provides supervisors with an overview of the dept substance abuse program, information regarding recent changes to the dept substance abuse policy/procedures, with emphasis on reasonable cause testing requirements.	<p>Upon completion of this course, participants will be able to: <input type="checkbox"/></p> <ol style="list-style-type: none"> 1. Provide an overview of the substance abuse program and available resources. <input type="checkbox"/> 2. Describe the prohibitions and administrative/disciplinary actions for each of the five employee types. <input type="checkbox"/> 3. Identify steps of the mandatory referral process and mandatory referral requirements. <input type="checkbox"/> 4. Describe recent changes to the department's substance abuse policy. <input type="checkbox"/> 5. Describe reasons for termination under this policy and discuss the termination process. <input type="checkbox"/> 6. Explain the role and responsibilities of the Employee Assistance Program (EAP). <input type="checkbox"/> 7. Recognize the signs and symptoms of drug and alcohol abuse. <input type="checkbox"/> 8. Confront employees and document incidences regarding substance abuse. <input type="checkbox"/> 9. Document reasonable cause issues using the Indicators of <input type="checkbox"/> 	4
DEV280	Workplace Violence - VPMS	This course provides Violence Program Managers (VPMS) with important information about the department's program and policy on violence in the workplace and educates participants on their roles and responsibilities as VPMS.	<p>Upon completion of this course, participants will be able to: <input type="checkbox"/></p> <ol style="list-style-type: none"> 1. Provide an overview of the violence program and available resources. <input type="checkbox"/> 2. List and describe the four categories of violence. <input type="checkbox"/> 3. Describe the prohibited behaviors and administrative/disciplinary actions required for each. <input type="checkbox"/> 4. Discuss the steps in the mandatory referral process and mandatory referral requirements. <input type="checkbox"/> 5. Describe reasons for termination under this policy and discuss the termination process. <input type="checkbox"/> 6. Explain the role and responsibilities of the Employee Assistance Program (EAP). <input type="checkbox"/> 7. Discuss domestic violence as it pertains to the workplace. <input type="checkbox"/> 8. Describe reporting responsibilities associated with the violence program. <input type="checkbox"/> 9. Discuss immediate response procedures and investigation procedures <input type="checkbox"/> 	4

DEV281	Workplace Violence-Supervisors	This course provides supervisors with important information about the department's violence in the workplace policy and educates participants on their roles and responsibilities in relation to this program.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> 1. Provide an overview of the violence program and available resources. □ 2. List and describe the four categories of violence. □ 3. Describe the prohibited behaviors and administrative/disciplinary actions required for each. □ 4. Discuss the mandatory referral process and mandatory referral requirements. □ 5. Describe reasons for termination under the policy and discuss the termination process. □ 6. Identify the role and responsibilities of the Employee Assistance Program (EAP). □ 7. Discuss domestic violence as it pertains to the workplace. □ 8. Describe reporting responsibilities associated with the violence program. □ 9. Discuss immediate response procedures and investigation procedures. □ 	4
DEV282	Violence Prevention	Explains TxDOT's violence prevention program; including the categories of violence, prohibited behaviors, admin & disciplinary actions, mandatory referral process, Employee Assistance Program, domestic violence & recognition of early warning signs.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> 1. Explain the department's violence program and available resources, 2. List and describe the four categories of violence, 3. Describe the prohibited behaviors and the administrative/disciplinary actions that will be taken if the policy is violated, 4. Discuss the mandatory referral process, 5. Describe reasons for termination under the policy, 6. Identify the role of the Employee Assistance Program (EAP), 7. Discuss domestic violence as it pertains to the workplace, 8. Describe reporting responsibilities associated with the violence program, 9. Discuss immediate response procedures and investigation procedures, and 10. Recognize the early warning signs fo potentially violent or aggressive employees. 	1
DEV283	Violence Prevention-Employees	For current employees who have been directly or indirectly involved in a violent situation. Employees need to recognize & report any sign of violence. This course covers the signs of workplace violence & the necessary steps in prevention.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> 1. Explain the purpose of the Violence Prevention policy. □ 2. Identify unacceptable behaviors in the workplace. □ 3. Explain reporting responsibilities. □ 4. Identify administrative/disciplinary actions. □ 5. Identify reasons an employee could be terminated. 	1
DEV284	Violence Prevention-HRD Employees	For current HR employees who have been directly or indirectly involved in a violent situation. Employees need to recognize & report any sign of violence. This course covers the signs of workplace violence & the necessary steps in prevention.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> 1. Explain the purpose of the Violence Prevention policy. □ 2. Identify unacceptable behaviors in the workplace. □ 3. Explain reporting responsibilities. □ 4. Identify administrative/disciplinary actions. □ 5. Identify reasons an employee could be terminated. 	1
DEV300	Enhancing Your Presentation Sk	This course provides many opportunities for participants to present a specified topic in a safe, fun, and interactive learning environment.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> 1. Identify personal delivery strengths and opportunities for improvement. □ 2. Identify key components for effective presentation delivery □ 3. Develop a presentation outline □ 4. Select appropriate learning goals and focus points □ 5. Develop and use effective presentation aids. 	16

DEV415	Introduction to Project Management	Serves as an introduction and overview of project management. Based on the Project Management Institute (PMI) and the book, The Fast Forward MBA in Project Management.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Explain key project management terms and techniques. □ 2. Identify project stakeholders. □ 3. Describe a project charter and project management plan. □ 4. Develop a work breakdown structure and manage project scope. □ 5. Identify basic steps to build a project schedule and cost baseline. □ 6. Describe key concepts for developing and managing a high-performing project team. □ 7. Control a project. □ 8. Close a project. 	16
DEV417	Project Management - Risk Assessment	Presents the processes, tools and techniques needed to effectively manage risks on TxDOT projects. Based on the Project Management Institute (PMI) standards, as defined by the Guide to the Project Management Book of Knowledge (PMBOK).	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Discuss common risk management terminology. □ 2. Describe and consistently execute the six steps in the risk management process. □ 3. Develop a plan for managing project risks. □ 4. Utilize a variety of techniques for gathering and assessing risk information. □ 5. Assess risks to determine which are "big" risks. □ 6. Develop responses to improve the potential for project success. □ 7. Incorporate risk management into the lifecycle of a project. □ 8. Foster the development of best practices. 	24
DEV418	Project Management - Resource Management	Provides project management concepts related to the management of project resources. Based on the Project Management Institute (PMI) standard, as presented in the Guide to the Project Management Body of Knowledge (PMBOK) and TxDOT-specific applications.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Identify and define required project resources. □ 2. Estimate resources for scheduling and budgeting purposes. □ 3. Develop a project cost baseline and cash flow. □ 4. Create a Resource Management Plan document. □ 5. Manage and control project resources effectively. 	24
DEV419	Project Management - Scheduling	Presents processes required to create and manage a project schedule. Based on the Project Management Institute (PMI) standards, as presented in the Guide to the Project Management Body of Knowledge (PMBOK) and TxDOT-specific information.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Decompose a project scope to identify all required activities and resources. □ 2. Estimate resources and task duration. □ 3. Analyze network diagrams and task dependencies to determine a project's critical path. □ 4. Develop a realistic resource-loaded schedule. □ 5. Monitor and control the schedule throughout a project. 	24
DEV425	Instructor Development Course	This course prepares instructors to teach from a set of training materials, create training materials or modify existing courses with learning outcomes, instructor manuals, visual aids, exercises, workshops, and assessments.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> □ 1. Explain the five steps in the ISD system. □ 2. Write a behavioral learning outcome. □ 3. Develop various types of visual aids. □ 4. Present, measure, and review a learning outcome. □ 5. Demonstrate at least two forms of interactivity and positive interpersonal skills. □ 6. List five training techniques (e.g., Do not talk to the flip chart; do not stand in front of the projector; and do not stand in one place). □ 7. Demonstrate how to reach the three styles of learning. □ 8. Develop an appropriate assessment tool to measure learning. □ 9. Deliver a 15-minute training session that demonstrates adult learning principles. 	36

DEV430	Spreadsheet Engineering	Introduction to best practice in analytical model building using Excel.	Upon completion of this course, participants will be able to:☐ 1. Develop facility in generating insights via spreadsheet modeling in a variety of realistic situations. ☐ 2. Able to recognize the key problem in a situation, ☐ 3. Develop a structure for analyzing the problem, ☐ 4. Able to carry out a cogent analysis, ☐ 5. Present the analysis and insights to interested parties in a convincing, non-technical manner.	6
DEV507	HR Online Disciplinary Action	This course will enable HR staff and managers to process a disciplinary action using HR Online.	Upon completion of this course, participants will be able to:☐ 1. Create disciplinary action (DA) cases(s) in HR Online;☐ 2. Submit the case using workflow;☐ 3. Generate and print the DA letter and DA management reports.	3
DEV602	Enhancing Your Excel Skills	This course helps individuals advance their basic knowledge of Microsoft Excel; topics include using advanced formulas, creating charts, Pivot Tables, and macros, and applying conditional formatting rules.	Upon completion of this course the participant will be able to: 1. Review the basics of Excel 2. Create Advance Formulas in Excel 3. Create Charts, Pivot Tables, and Macros 4. Apply Conditional Formatting Rules	8
DEV801	EEO Compliance Training	This course fulfills a training requirement pursuant to Texas labor Code, Section 21.556.	Upon completion of this course, participants will be able to:☐ 1. Discuss the laws, theories, procedures, policy and guidelines relative to EEO.	8
DEV975	Exceptional Customer Service	Exceptional Customer Service		4
ENV102	Maintaining Project Consistency	Project consistency refers to the Federal and state requirement that transportation projects must be described consistently in all applicable plans, programs, project cost, and estimated letting date.	Upon completion of this course, participants will be able to:☐ 1. Define project consistency and identify the causes of project inconsistencies and the critical junctures in the project development process where project consistency should be reviewed.☐ 2. Identify resources and best practices that minimize project delays and financial risk, including the Project Consistency Checklist.☐ 3. Provide contact information for external entities and TxDOT offices of primary responsibility (OPR's) as well as communication guidelines for resolving project inconsistencies.	4
ENV103	Storm Water Pollu Prevent Plan	An on-site inspection of field installed storm water erosion & sediment control best management practices (BMPs). Including associated documentation in compliance with Texas Pollution Discharge Elimination System's requirements.	Upon completion of this course, participants will be able to:☐ 1. Identify effective Storm Water BMPs and explain if they are performing as designed.☐ 2. Update the SWP3 layout with revised BMPs.☐ 3. Utilize inspection related tips to improve efficiency.☐ 4. Demonstrate what to look for as an inspector.☐ 5. Explain what actions are necessary to maintain compliance with the TPDES CGP.☐ 6. Identify common installation mistakes and repair methods.☐ 7. List the records necessary to maintain permit compliance.	8
ENV104	Legal Sufficiency	This workshop will focus on the process and legal standards required to provide legal sufficiency for environmental documents. These standards will be part of the review of Environmental Assessments and Environmental Impact Statements.	Upon completion of this course, participants will be able to:☐ 1. How to review environmental documents in compliance with NEPA.☐ 2. Ability to act on behalf of FHWA when addressing environmental legal issues.☐ 3. Determining what documentation is required in the Administrative Record.	8
ENV106	TPWD and TCEQ MOUs Compliance	This course is designed to provide a basic overview of the MOUs that TxDOT has with TPWD and the TCEQ. This course will also provide guidance on the project file documentation standards required for compliance with these MOUs.	Upon completion of this course, participants will be able to:☐ 1. Increase the accuracy of tracking timelines related to Agency Coordination.☐ 2. Reduce errors related to Bio/Water documentation in the ECOS project file.☐ 3. Reduce the number of Tier II audits required for information related to the Bio/Water standards.	5

ENV107	Indirect/Cumulative Impacts	This interactive workshop will provide Texas participants with an overview of the requirements for Indirect Effects and Cumulative Impact Analysis (ICI) and how these requirements can be efficiently addressed in the NEPA process.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Determine when ICI applies.□ □ 2. Outline the ICI process.□ □ 3. Define and explain key components of ICI.□ □ 4. Assess ICI impacts under NEPA.. 	16
ENV108	Air Quality 101 - Attainment areas with low traffic volumes	This training provides air quality compliance requirements for highway transportation projects. It includes identifying where to locate and how to use appropriate air quality toolkit guidance. Training is specific to low traffic volume districts.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> 1. Explain air quality compliance requirements for highway projects; 2. Locate the air quality toolkit guidance; 3. Use the toolkit guidance documents appropriately. 	8
ENV109	Air Quality 101 - Attainment areas with high traffic volumes	AQ compliance requirements for highway transportation projects. Includes process for CO, TAQA, and MSAT analysis. Also learn about AQ toolkit. Specific to attainment Districts with relatively high traffic volumes (>140,000 vehicles per day).	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> 1. Explain air quality compliance requirements for roadway projects. 2. Explain the goal of the various NEPA air quality analyses. 3. Identify the compliance, coordination, and documentation requirements for the various NEPA air quality analyses. 4. Locate the air quality toolkit guidance. 5. Explain the structure of the toolkit-guidance-documents and how to use them appropriately. 	4
ENV110	Section 7 - ESA and Interagency Cooperation	The workshop will provide an in-depth overview of the Endangered Species Act Section 7 consultation requirements for highway projects with emphasis on lead agency role and legal responsibilities. Compliance issues will be reviewed through case studies.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> 1. Explain the key sections of the ESA Section 7.□ 2. Describe the roles and responsibilities under Section 7.□ 3. Outline the Section 7 consultation process. 	16
ENV111	Section 7 - ESA and Interagency Cooperation	AQ compliance requirements for highway transportation projects. Includes process for project level conformity determinations, hot-spots, CO TAQA, MSAT analyses, and CMP. Learn to use AQ toolkit. Specific to non-attainment and maintenance Districts.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> 1. Explain air quality compliance requirements for roadway projects; 2. Explain the goal of the various air quality analyses; 3. Identify the compliance, coordination, and documentation requirements for the various air quality analyses; 4. Locate the air quality toolkit guidance; 5. Explain the structure of the toolkit-guidance-documents and how to use them appropriately. 	8
ENV112	Appropriate Public Involvement	The class will prepare staff to develop an effective public involvement program and how to better conduct public involvement efforts for transportation projects	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Explain the benefits of active, outreaching public involvement;□ □ 2. Describe the laws, regulations, policies and procedures;□ □ 3. Plan, organize and conduct effective public involvement efforts; and□ □ 4. Prepare accurate and appropriate documentation. 	16
ENV113	NEPA/Transportation Decision Making	Participants will get a better perspective of the vital role NEPA plays in the FHWA Project Development process. It has a brief legislative and regulatory history of NEPA and an overview of related laws that fall under NEPA.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> 1. Explain the relationship of NEPA to 23 CFR 771 and other environmental laws.□ 2. Describe the role and responsibilities under NEPA assignment.□ 3. Identify ways to streamline the NEPA process.□ 	16

ENV114	Hazardous Materials Management	The course will prepare staff to conduct more effective initial site assessments for hazardous materials issues relating to transportation projects and to prepare the appropriate documentation of the findings.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Describe the role of hazardous materials management in project development; □ 2. Explain the laws, regulations, policies and procedures related to hazardous materials management; □ 3. Plan, organize and conduct initial site assessments for hazardous materials; and □ 4. Prepare accurate documentation on hazardous materials management and initial site assessments. 	16
ENV115	Highway Traffic Noise Analysis	The course will prepare staff to accomplish noise analysis utilizing the TNM 2.5 software and document highway traffic noise analyses for transportation improvement projects. Students should have some familiarity with GIS and CAD applications.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Describe TxDOT's Guidelines for Analysis and Abatement of Highway Traffic Noise; □ 2. Explain the procedures necessary to plan, set up, and conduct a traffic noise analysis; □ 3. Use a sound meter and the FHWA traffic noise modeling software to determine traffic noise levels. □ 4. Document the results of a traffic noise analysis. 	24
ENV116	EPD-Air Quality Training	This course will prepare staff to gain knowledge of air quality issues and be able to run air quality models.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Explain the air quality issues and non-attainment status; □ 2. Explain transportation conformity issues and implications; and □ 3. Describe air quality issues in the NEPA process. 	16
ENV117	CRM Basics for Transportation Projects	The course emphasizes practical skills for ensuring that cultural resources issues are properly addressed during project development.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> 1. Determine whether the project requires review and coordination. 2. Identify initial data needs and scheduling considerations that require review and coordination 3. Explain the roles and responsibilities of district, archeologist, and historians during review and coordination 4. Determine how to manage the big issues. 5. Identify which items belong in the project file when the project has been successfully completed. 6. Prepare proper documentation in an EA or EIS 7. Handle design changes 8. Handle commitments, including ROE denials. 	24
ENV120	Introduction to ArcGIS for ENV700	This is a two day course covering Geographic Information Systems (GIS). Two days will include an introduction to geographic information systems technology and the use of ArcGIS software for mapping and analyzing spatial data.	Upon completion of this course the participant will be able to: <ul style="list-style-type: none"> □ 1. Understand general GIS principles. □ 2. Recognize, gather, input, query, edit, analyze, and display spatial data using ArcGIS. 	16
ENV121	USACE Section 404/10	Introduction to identifying wetlands and assessing their function/values, types of authorization (nationwide/regional/individual permits), the permitting process, and requirements the Clean Water Act Section 404 and Rivers and Harbors Act Section 10.	Upon completion of this course the participant will be able to: <ul style="list-style-type: none"> 1. Understand ways to identify wetlands and assess their function and value. 2. Identify and understand the differences between the types of authorizations required for wetland impacts. 3. Understand the requirements and permitting process for Section 404 of the Clean Water Act. 4. Understand the requirements and permitting process Section 10 of the Rivers and Harbors Act. 	12

ENV122	Mgng Rd Impct on Streams -NHI 142048	Managing Road Impacts on Stream Ecosystems: introduction to the basic concepts related to the impacts that roadways have on streams and stream ecosystems. Includes how to identify, monitor, avoid & mitigate the effects of these impacts.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> □ 1. Evaluate how roads interact with and impact stream ecosystems □ 2. List major State and Federal Requirements that apply to roadway impacts on stream ecosystems □ 3. Identify relevant stakeholders □ 4. Involve stakeholders in an environmental review process □ 5. Describe the benefits of collaboration among disciplines in assessing and mitigating road impacts to stream ecosystems □ 6. Describe the characteristics and functions of a stream ecosystem □ 7. Identify stream restoration tools and techniques □ 8. Develop monitoring protocols □ 9. Identify risk and uncertainty associated with treatment approaches in fluvial environments 	24
ENV200	Negotiation Skills for Project Delivery	This workshop is designed to support TxDOT employees' successful delivery by strengthening their interpersonal communications skills, introducing the application of effective negotiation principles, practices, and managing interpersonal conflict.	Upon completion of this course, the participant will be able to: <ul style="list-style-type: none"> □ 1. Learn and apply strategies to adapt personal behavior to work more effectively with others. □ 2. Apply principles of negotiating with POISE (People, Options, Standards and Extras) to difficult project delivery scenarios. □ 3. Properly prepare for negotiation. □ 4. Apply effective methods and skills to resolve conflict. 	12
ENV201	Wetland Plant - ID	This course provides participants with in-depth information about hydrophytic plants present in wetlands. With this information, students are better prepared to correctly identify and further delineate wetlands, resulting in avoiding or minimizing impact	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Identify hydrophytic vegetation in order to avoid or minimize impacts to the environment caused by proposed construction; □ 2. Describe how plants are able to live in anaerobic conditions in saturated soils; and □ 3. Identify hydrophytic plants for the determination and delineation processes. 	32
ENV202	404 Permit Application & Compl	This course educates staff regarding water quality issues and trains staff to submit a U.S. Army Corps of Engineers (USACE) 404 permit application package complete with wetland delineation data forms.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> □ 1. Discuss water resource issues and reference applicable laws and regulations; □ 2. Identify water resource issues on TxDOT projects; □ 3. Complete a USACE 404 permit application package; and □ 4. Submit completed wetland delineation forms for review. 	12
ENV203	Wetland Delineation	This course provides participants with in-depth information about hydrology, hydrophytic vegetation, and hydric soils present in wetlands, the physical delineation of wetlands, and jurisdictional determinations.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> 1. Identify hydrophytic vegetation, hydric soils, and hydrological conditions in order to avoid or minimize impacts to the environment caused by proposed construction or other transportation related activities; □ 2. Identify wetlands using USACE approved methods for jurisdictional determinations under normal and disturbed conditions; □ 3. Delineate wetland boundaries; and □ 4. Understand the Section 404 permitting process. 	36
ENV205	Stream Assessmnt & Restoration	Discussions including Stream mechanics, geomorphology, stream and riparian ecology, site assessment and data collection, hydrologic, hydraulic, and stability analysis, channel design, issues including erosion and deposition and construction.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> 1. Assess riverine systems, □ 2. Collect and analyze data, □ 3. Assess riverine functions and values, □ 4. Design riverine channels, and □ 5. Design and perform restoration for mitigation. 	27

ENV207	Environmental Basics	The workshop will provide participants with a comprehensive overview of the general NEPA process for newly hired District environmental staff. This overview includes a hands-on demonstration of how tasks need to be performed in ECOS.	Upon the completion of this course, participants will be able to: 1. Discuss typical TxDOT terminology 2. Describe the CE process 3. Define the Core Team concept 4. Perform applicable ECOS steps 5. Define TxDOT NEPA Assignment	8
ENV208	NEPA Air Quality Analysis for Highway Projects	Participants will get: up-to-date information on air quality analysis requirements and documentation for highway projects at both the federal and state level. FHWA will provide options to address issues raised such as GHG analysis and health.	Upon completion of this course, participants will be able to: 1. Discuss air quality analysis requirements; 2. Describe the triggers for an analysis; 3. Define streamlining tools; 5. Define SOPs and guidance for completing analysis and documentation.	20
ENV209	Advanced CRM Seminar	This class prepares the participant for requirements of the NEPA Assignment MOU with FHWA regarding Section 1 06/4(f) regulations. It specifically addresses strategies to integrate CRM issues into standard NEPA consultation and planning efforts.	Upon completion of this course, participants will be able to: 1. Articulate cultural resource management regulatory basics; 2. Address situations that cause project delays; 3. Identify mitigation measures; 4. Communicate effectively with consulting parties such as tribes and county historical commissions; 5. Coordinate with local agency project sponsors; 6. Develop action plans for implementing the above measures.	12
ENV210	Intermediate CRM Seminar	This class prepares the participant for requirements of the NEPA Assignment MOU with FHWA regarding Section 1 06/4(f) regulations. It specifically addresses strategies to integrate CRM issues into standard NEPA consultation and planning efforts.	Upon completion of this course, participants will be able to: 1. Articulate cultural resource management regulatory basics; 2. Describe situations that cause project delays, complicate project delivery goals, are often handled poorly, and are not of benefit to the outcome from internal and external perspectives; 3. Communicate effectively with consulting parties such as tribes and county historical commissions; 4. Coordinate with local agency project sponsors.	16
ENV211	ECOS Training	This class prepares users for new functions/features to the TX Environmental Compliance Oversight System (ECOS) application. It specifically trains the user how to utilize the system in efforts to capture required information for environmental projects.	Upon completion of this course, participants will be able to: 1. Navigate the system 2. Gain an understanding of the latest enhancements 3. Understand how the business rules and how to apply them to capture important information.	24
ENV212	Essential Fish Habitats	This course covers the basics of Essential Fish Habitats by discussing the Magnuson Stevens Act, National Marine Fisheries Service Implementing Rules, Gulf of Mexico Fishery Management Council's and NMFS' Highly Migratory Species EFH amendments.	Upon completion of this course, participants will be able to: 1. Identify what Essential Fish Habitats are. 2. Identify when a consultation is required. 3. Identify what needs to be provided to NMFS in an EFH Assessment.	4

ENV300	Stormwater Eros & Sedimn Day 1	This course is designed to qualify field inspectors and design personnel in the appropriate preparation, inspection and implementation of suitable site-specific erosion and sediment control techniques. The course includes storm water design techniques,	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Understand and employ basic regulations relating to storm water erosion and sediment control. <input checked="" type="checkbox"/> Apply the basic principles of sediment and erosion control. <input type="checkbox"/> 3. Select and apply appropriate Best Management Practices for surface protection, velocity reduction and flow control. <input type="checkbox"/> 4. Select and apply appropriate Best Management Practices for access protection and runoff management. <input type="checkbox"/> 5. Explore and Utilize techniques for inspection and maintenance of storm water erosion and sediment control. <input type="checkbox"/>	8
ENV301	Stormwater Erosion & Sediment Control (Day 2)	This course is, designed to qualify field inspectors and design personnel in the appropriate preparation, inspection and implementation of the suitable site specific erosion and sediment control techniques. The course includes storm water design technique.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Recognize and apply hydrology methods including the rational method, the TP-40 method and the 90th percentile method. <input checked="" type="checkbox"/> Access and utilize the approved product list for slope and channel protection products. <input type="checkbox"/> 3. Design effective sediment traps and basins. <input type="checkbox"/> 4. Design an effective SWP3.	8
ENV402	Public Inv In Trans Decisions - NHI 142036	Public involvement is creative thinking, willingness & ability to interact openly & sensitively to the public during transportation decisionmaking. Focus is on successfully addressing the public's needs while gathering useful information.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Describe U.S. DOT transportation decision making processes, including those that trigger the National Environmental Policy Act <input type="checkbox"/> 2. Describe the relationship between public involvement and decision making <input type="checkbox"/> 3. Develop a public involvement plan with stakeholder assistance that includes attention to non-traditional populations as an evaluation component <input type="checkbox"/> 4. Describe interest-based problem solving and the values that underlie it <input type="checkbox"/> 5. Identify ways to enhance public involvement plans.	24
ENV601	Conflict Management-Enviro NHI #142060	This course teaches basic conflict management skills, including interest-based negotiation, communication, facilitation skills, leadership behaviors & applying these skills in transportation decision making where there are environmental issues.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Use interpersonal skills to engage productively with individuals within their agency <input type="checkbox"/> 2. Use interpersonal skills to work productively with other agencies, organizations, Tribes, and the general public <input type="checkbox"/> 3. Analyze agency roles and decision making processes with respect to potential conflict <input type="checkbox"/> 4. Apply conflict management strategies to planning, project development, and project implementation <input type="checkbox"/> 5. Apply conflict management strategies to increase the effectiveness of inter-agency and intra-agency working relationships and programmatic initiatives	24
ENV700	Natural Diversity Database Training	Natural Diversity Database Training is a course designed to teach TxDOT staff how to use the GIS-ARCVIEW and Crystal Reports Database to research and find rare and threatened/endangered species on proposed TxDOT projects.	Upon completion of this course, participants will be able to: 1. Demonstrate usage of theGIS/ARC VIEW and Crystal Reports databases. 2. Demonstrate indepedent access of the data bases and correctly use and interpret the information provided by the data bases.	8
EPC101	Fundamentals of Engineering (FE) Exam Preparation	A 96-hour course to prepare Engineering Assistants (EAs) for the Fundamentals of Engineering (FE) examination. Required for EAs in the Engineering Assistant Career Development Program who have not achieved certification as Engineer in Training (EIT).	Upon completion of the course, participants will be able to: <input type="checkbox"/> 1. Prepare for questions that are presented on the FE exam. <input type="checkbox"/> 2. Calculate mathematical problems in the exam related to engineering. <input type="checkbox"/> 3. Apply the principles of Thermodynamics, Fluid Mechanics, and Statics/Dynamics. <input type="checkbox"/> 4. Use the fundamental principles of Chemistry, Probability and Statistics, Material Science, Engineering Economics, and Mathematics.	96

EPC102	Principles and Practice of Engineering (PE) Exam Preparation - Breadth	A 96-hour course to prepare Engineering Assistants (EAs) for the Principles of Engineering (PE) Breadth exam. Required for EAs in the Engineering Assistant Career Development Program who have not achieved licensure as a Professional Engineer.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Practice sample questions that are presented on the PE Breadth exam. <input type="checkbox"/> 2. Calculate mathematical problems in the exam related to engineering. <input type="checkbox"/> 3. Apply the principles of Hydraulics, Stress Analysis, Water Treatment, Construction, Hydrology, Traffic, Transportation, Structures, and Geotechnical/Foundations.	96
EPC103	Principles and Practice of Engineering (PE) Exam Preparation - Depth	A 96-hour course to prepare Engineering Assistants (EAs) for the Principles and Practice of Engineering (PE) Depth exam. Required for EAs in the Engineering Assistant Career Development Program who have not achieved licensure as a Professional Engineer.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Practice sample questions that are presented on the PE specialty exam. <input type="checkbox"/> 2. Calculate mathematical problems in the exam related to engineering. <input type="checkbox"/> 3. Apply the fundamental principles of Hydraulics, Environmental, Water Treatment, Construction, Hydraulics, Traffic, Transportation, Structures, and Geotechnical.	96
FOD100	MNT/Rpr John Deere 330 CLC Exc	The Maintenance and repair of John Deere 330CLC Excavator course is designed to provide department mechanics and shop repair coordinators with the skill sets to safely diagnose, troubleshoot, repair, and maintain the excavator. <input type="checkbox"/>	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Be able to apply Condition Based Maintenance to the JD 330CLC excavator. <input type="checkbox"/> 2. Conduct a technical walk around of the JD 330CLC excavator. <input type="checkbox"/> 3. Describe how the various components of the JD 330CLC fit into the electrical, hydraulic, power train, and engine systems. <input type="checkbox"/> 4. Describe the schematic diagram and identify the components of the JD 330CLC excavator. <input type="checkbox"/> 5. Conduct critical adjustments and tests of components. <input type="checkbox"/> 6. Conduct diagnostic tests and troubleshoot mechanical, electrical, and hydraulic problems. <input type="checkbox"/> 7. Describe and solve Diagnostic Trouble Codes. <input type="checkbox"/> 8. Describe how to use the Jon Deere on-line service advisor program.	8
FOD110	John Deere Pneu Tire Load-R&M	The maintenance and repair of the John Deere pneumatic tired loader course for models 444E, 544E, 544G, 544H, 544K, 624H, 644D and 644E is designed to safely diagnose, troubleshoot, repair and maintain the loader.	Upon completion of this course, participants will be able to: 1. Be able to apply Condition Based Maintenance to JD loaders. 2. Conduct a technical walk around of JD loaders. 3. Be able to perform code retrieval from the DDU (Diagnostic Display Unit) or ADU (Advanced Display Unit) when applicable, using generic scan tools or NEXIQ scan tools to retrieve DTCs (Diagnostic Trouble Codes). 4. Be able to perform common system adjustments to the engine, powertrain, undercarriage and hydraulics via tests and adjustments to keep the loader productive. 5. Describe daily operational checkout procedures, service hour intervals and oil/coolant scans. 6. Describe and trace electrical issues for the engine, powertrain, hydraulic and various mechanical systems using schematics. 7. Describe or demonstrate the proper diagnostic tests and troubleshooting steps for the following engines and series on JD loaders: 4045- 300 series, 4045- Powertech, 6059- 300 series, 6068- Powertech and 6076- 400 series to include fuel, intake, exhaust and cooling systems. 8. Describe the proper method to diagnose, troubleshoot or repair Hydrostatic, Powershift and planetary gear powertrains and final drives. 9. Describe the proper method to diagnose, troubleshoot or repair hydraulic systems for open center, single & dual pumps, and load sensors; closed center steering systems.	8

FOD120	JD Crawler Loader - Repr/Maint	<p>The maintenance and repair of the John Deere crawler loader course for models 455G, 555G, 655B and 655C is designed to safely diagnose, troubleshoot, repair and maintain the crawler loader.</p>	<p>Upon completion of this course, participants will be able to: <input type="checkbox"/></p> <ol style="list-style-type: none"> 1. Be able to apply Condition Based Maintenance to JD crawler loaders. <input type="checkbox"/> 2. Conduct a technical walk around of JD crawler loader. <input type="checkbox"/> 3. Be able to perform code retrieval from the DDU (Diagnostic Display Unit) or SSM (Sealed Switch Module) when applicable, using generic scan tools or NEXIQ scan tools to retrieve DTCs (Diagnostic Trouble Codes). <input type="checkbox"/> 4. Be able to perform common system adjustments to the engine, powertrain, undercarriage and hydraulics via tests and adjustments to keep the crawler loader productive. <input type="checkbox"/> 5. Describe daily operational checkout procedures, service hour intervals and oil/coolant scans. <input type="checkbox"/> 6. Describe and trace electrical issues for the engine, powertrain, hydraulic and various mechanical systems using schematics. <input checked="" type="checkbox"/> Describe or demonstrate the proper diagnostic tests and troubleshooting steps for the following engines and series on JD crawler loaders: 4045, 300 series, 6068, 300 series, and Liebherr (4 and 6 cylinder diesel) series to include fuel, intake, exhaust and cooling systems. <input type="checkbox"/> 8. Describe the proper method to diagnose, troubleshoot or repair Powershift (4 forward, 4 reverse), Powershift (variable speed forward and reverse) and Hydrostatic (closed loop) powertrains and final drives. <input type="checkbox"/> 9. Describe the proper method to diagnose, troubleshoot or repair hydraulic systems for open center systems. 	8
FOD130	JD Motor Grader - Repair/Maint	<p>John Deere Motor Grader - Repair & Maintenance <input type="checkbox"/></p> <p>The maintenance and repair of the John Deere motor grader course for models 570A, 570B, 670B, 670G, 770B and 770C is designed to safely diagnose, troubleshoot, repair and maintain the motor grader.</p>	<p>Upon completion of this course, participants will be able to:</p> <ol style="list-style-type: none"> 1. Be able to apply Condition Based Maintenance to JD motor graders. 2. Conduct a technical walk around of JD motor graders. 3. Be able to perform code retrieval from the DDU (Diagnostic Display Unit) or SSM (Sealed Switch Module) when applicable, using generic scan tools or NEXIQ scan tools to retrieve DTCs (Diagnostic Trouble Codes). 4. Be able to perform common system adjustments to the engine, powertrain, undercarriage and hydraulics via tests and adjustments to keep the motor grader productive. 5. Describe daily operational checkout procedures, service hour intervals and oil/coolant scans. 6. Describe and trace electrical issues for the engine, powertrain, hydraulic and various mechanical systems using schematics. 7. Describe or demonstrate the proper diagnostic tests and troubleshooting steps for the following engines and series on JD motor graders: 6054, 300 series, 6059, 300 series, 6076, 400, 6081, 400 series and 690 Powertech series to include fuel, intake, exhaust and cooling systems. 8. Describe the proper method to diagnose, troubleshoot or repair Powershift (8 forward, 4 reverse and 8 forward, 8 reverse) and TCU (Transmission Control Unit) powertrains. 9. Describe the proper method to diagnose, troubleshoot or repair hydraulic systems for closed center and load sensor systems. 	8

FOD140	JD Crawler Dozer - Repair/Maint	<p>The maintenance and repair of the John Deere crawler dozer course for models 450E, 450G, 450H, 450J, 550H, 750, 750B, 850 and 850B is designed to safely diagnose, troubleshoot, repair and maintain the crawler.</p>	<p>Upon completion of this course, participants will be able to: <input type="checkbox"/></p> <ol style="list-style-type: none"> 1. Be able to apply Condition Based Maintenance to JD crawler dozers. <input type="checkbox"/> 2. Conduct a technical walk around of JD crawler dozer. <input type="checkbox"/> 3. Be able to perform code retrieval from the DDU (Diagnostic Display Unit) or SSM (Sealed Switch Module) when applicable, using generic scan tools or NEXIQ scan tools to retrieve DTCs (Diagnostic Trouble Codes). <input type="checkbox"/> 4. Be able to perform common system adjustments to the engine, powertrain, undercarriage and hydraulics via tests and adjustments to keep the crawler dozer productive. <input type="checkbox"/> 5. Describe daily operational checkout procedures, service hour intervals and oil/coolant scans. <input type="checkbox"/> 6. Describe and trace electrical issues for the engine, powertrain, hydraulic and various mechanical systems using schematics. <input checked="" type="checkbox"/> <p>Describe or demonstrate the proper diagnostic tests and troubleshooting steps for the following engines and series on JD crawler dozers: 4045-300 series, 4045T-Powertech series, 6068-300 series, 6076-400 series and 6101-500 series to include fuel, intake, exhaust and cooling systems. <input type="checkbox"/></p> <ol style="list-style-type: none"> 8. Describe the proper method to diagnose, troubleshoot or repair HLR (Hydrostatic with High, Low and Reverse), Powershift (4 forward, 4 reverse, and torque converter) and Hydrostatic (variable speed, forward and reverse) powertrains. <input type="checkbox"/> 9. Describe the proper method to diagnose, troubleshoot or repair hydraulic systems for open center, single and dual pump systems. 	8
FOD150	JD Backhoe - Repair & Maint	<p>John Deere Backhoe - Repair & Maintenance</p> <p>The maintenance and repair of the John Deere backhoe course for models 310D, 310E, 310SK, 410E, 410G, 510C and 510D is designed to safely diagnose, troubleshoot, repair and maintain the backhoe.</p>	<p>Upon completion of this course, participants will be able to: <input type="checkbox"/></p> <ol style="list-style-type: none"> 1. Be able to apply Condition Based Maintenance to JD backhoes. <input type="checkbox"/> 2. Conduct a technical walk around of JD backhoe. <input type="checkbox"/> 3. Be able to perform code retrieval from the DDU (Diagnostic Display Unit) or SSM (Sealed Switch Module) when applicable, using generic scan tools or NEXIQ scan tools to retrieve DTCs (Diagnostic Trouble Codes). <input type="checkbox"/> 4. Be able to perform common system adjustments to the engine, powertrain and hydraulics via tests and adjustments to keep the backhoe productive. <input type="checkbox"/> 5. Describe daily operational checkout procedures, service hour intervals and oil/coolant scans. <input type="checkbox"/> 6. Describe and trace electrical issues for the engine, powertrain, hydraulic and various mechanical systems using schematics. <input type="checkbox"/> 7. Describe or demonstrate the proper diagnostic tests and troubleshooting steps for the following engines and series on JD backhoes: 4039-300 series and 4045T-Powertech series to include fuel, intake, exhaust and cooling systems. <input type="checkbox"/> 8. Describe the proper method to diagnose, troubleshoot or repair 4 speed synchronized with hydraulic reverser, Collar shift/synchronized with hydraulic reverser, Powershift transmission and MFWD (Mechanical Front Wheel Drive) powertrains and final drives. <input type="checkbox"/> 9. Describe the proper method to diagnose, troubleshoot or repair hydraulic systems for open center, closed center and pressure compensated load sensor systems. 	8

FOD160	JD Excavator-Repair & Maint	<p>John Deere (JD) Excavator- Repair & Maintenance <input type="checkbox"/></p> <p>The maintenance and repair of the JD excavator course for models 120C, 260CLC, 330CLC, 490D and 490E is designed to safely diagnose, troubleshoot, repair and maintain the excavator.</p>	<p>Upon completion of this course, participants will be able to: <input type="checkbox"/></p> <ol style="list-style-type: none"> 1. Be able to apply Condition Based Maintenance to JD excavators. <input type="checkbox"/> 2. Conduct a technical walk around of the JD excavators. <input type="checkbox"/> 3. Be able to perform code retrieval from the DDU (Diagnostic Display Unit), SSM (Sealed Switch Module) or Pump and Valve Controller (PVC) when applicable, using generic scan tools or NEXIQ scan tools to retrieve DTCs (Diagnostic Trouble Codes). <input checked="" type="checkbox"/> 4. Be able to perform common system adjustments to the engine, powertrain, undercarriage and hydraulics via tests and adjustments to keep excavator productive. <input type="checkbox"/> 5. Describe daily operational checkout procedures, service hour intervals and oil/coolant scans. <input type="checkbox"/> 6. Describe and trace electrical issues for the engine, powertrain, hydraulic and various mechanical systems using schematics. <input type="checkbox"/> 7. Describe or demonstrate the proper diagnostic tests and troubleshooting steps for the following engines and series on JD excavators: 4045-300 series, 6068-300 series, 404ST- Powertech series and 6081- Powertech series to include fuel, intake, exhaust and cooling systems. <input type="checkbox"/> 8. Describe the proper method to diagnose, troubleshoot or repair Hydrostatic (variable-displacement, bent-axis, axial piston) powertrains. <input type="checkbox"/> 9. Describe the proper method to diagnose, troubleshoot or repair hydraulic systems for open center; variable displacement, swash plate and open center; variable displacement, bent axis piston pump systems. 	8
FOD200	FNAV Trng for Fleet Ops Person	<p>FNAV Training for Fleet Operations Personnel</p> <p>This is the introductory course for the use of the FNAV system that covers MS applications, Fuel Focus, Key Valet, and Network Fleet interfaces.</p>	<p>Upon completion of this course, participants will be able to: <input type="checkbox"/></p> <ol style="list-style-type: none"> 1. Demonstrate general navigation through the Menu Bar, Button Bar, and Application Areas. <input type="checkbox"/> 2. Demonstrate use of the various menus, home page, and button icons. <input type="checkbox"/> 3. Demonstrate how to access and use On-Line Help and Hyperlinks in FNAV. <input type="checkbox"/> 4. Describe how to display information in the Unit Main frame and use the List of Values search technique. <input type="checkbox"/> 5. Describe how to reserve a pool vehicle by equipment type, motor pool location and date through the Motor Pool Portal. <input type="checkbox"/> 6. Describe how to cancel a reservation using the Motor Pool Portal. <input type="checkbox"/> 7. Describe how to access the Key Valet Kiosk to pick up and return a unit using the Confirmation Code. <input type="checkbox"/> 8. Describe the process to enter a work request. <input type="checkbox"/> 9. Describe the process to enter and complete work orders while capturing information for jobs performed, labor charges, parts charges, commercial charges and special notes <input type="checkbox"/> 10. Describe the four work order statuses and actions required in each to complete a work order <input type="checkbox"/> 11. Describe the basic functionality of the Inventory Management Module. <input type="checkbox"/> 12. Describe the process to use the Unit View frame to display basic unit information and work order data. <input type="checkbox"/> 13. Demonstrate by class exercise competency to use the FNAV system. 	8

FOD210	FNAV Trng for MNT Section User	<p>FNAV Training for MNT Section Users</p> <p>This is the introductory course for use of the FNAV system that covers MS applications for maintenance section based users.</p>	<p>Upon completion of this course, participants will be able to: <input type="checkbox"/></p> <ol style="list-style-type: none"> 1. Demonstrate general navigation through the Menu Bar, Button Bar and Application Areas. <input type="checkbox"/> 2. Demonstrate use of the various menus, home page and button bar icons. <input type="checkbox"/> 3. Demonstrate how to access and use On-Line Help and Hyperlinks in FNAV. <input type="checkbox"/> 4. Describe how to display information in the Unit Main frame and use the List of Values search technique <input type="checkbox"/> 5. Describe the process to enter a work request. <input type="checkbox"/> 6. Describe the process to add a work request to a work order. <input type="checkbox"/> 7. Describe the process to enter and complete work orders while capturing information for jobs performed, labor charges, parts charges, commercial charges and special notes <input type="checkbox"/> 8. Describe the four work order statuses and actions required in each to complete a work order. <input type="checkbox"/> 9. Demonstrate by class exercise competency to use the FNAV system. 	12
FOD220	FNAV MS for FOD equip Menchani	<p>FNAV MS for FOD Equipment Managers.</p> <p>This is the introductory course for the use of the FNAV system that covers MS applications for Fleet Operations equipment mechanics.</p>	<p>Upon completion of this course, participants will be able to: <input type="checkbox"/></p> <ol style="list-style-type: none"> 1. Demonstrate general navigation through the Menu Bar, Button Bar and Application Areas. <input type="checkbox"/> 2. Demonstrate use of the various menus, home page and button bar icons. <input type="checkbox"/> 3. Demonstrate how to access and use On-Line Help and Hyperlinks in FNAV. <input type="checkbox"/> 4. Describe how to display information in the Unit Main frame and use the List of Values search technique. <input type="checkbox"/> 5. Describe the process to enter a work request. <input type="checkbox"/> 6. Describe the process to add a work request on a work order. <input type="checkbox"/> 7. Describe the process to enter and complete work orders in Work Order Main while capturing information for jobs performed, parts charges, commercial charges, clear Telematics faults, and entering work order, job, and warranty notes. <input type="checkbox"/> 8. Describe the four work order statuses and actions required in each to complete a work order <input type="checkbox"/> 9. Describe the proper process for entering information in the Labor Wedge frame and correcting time entries. <input type="checkbox"/> 10. Describe the function of Unit Queries. <input type="checkbox"/> 11. Describe the function of Repair Information Queries. <input type="checkbox"/> 12. Demonstrate by class exercise competency to use the FNAV system. 	4
FOD230	FNAV MS for MNT sect equip mec	<p>FNAV MS for MNT Section Equipment Mechanics</p> <p>This is the introductory course for the use of the FNAV system that covers MS applications for maintenance section equipment mechanics.</p>	<p>Upon completion of this course, participants will be able to: <input type="checkbox"/></p> <ol style="list-style-type: none"> 1. Demonstrate general navigation through the Menu Bar, Button Bar and Application Areas. <input type="checkbox"/> 2. Demonstrate use of the various menus, home page and button bar icons. <input type="checkbox"/> 3. Demonstrate how to access and use On-Line Help and Hyperlinks in FNAV. <input type="checkbox"/> 4. Describe how to display information in the Unit Main frame and use the List of Values search technique. <input type="checkbox"/> 5. Describe the process to enter a work request. <input type="checkbox"/> 6. Describe the process to add a work request on a work order. <input type="checkbox"/> 7. Describe the process to enter and complete work orders in Work 	4

			<p>Order Main while capturing information for jobs performed, labor charges, parts charges, commercial charges, clear Telematics faults, and entering work order, job, and warranty notes.□</p> <p>8. Describe the basic functionality of the Inventory Management Module to include request, receive, and issue parts purchased through the APS system. □</p> <p>9. Describe the four work order statuses and actions required in each to complete a work order.□</p> <p>10. Demonstrate by class exercise competency to use the FNAV system.</p>	4
FOD240	FNAV Training Prevent MNT Coord	<p>FNAV Training for Preventive MNT Coordinators (PMC)</p> <p>This is the introductory course for use of the FNAV system that covers MS applications for preventive maintenance coordinators.</p>	<p>Upon completion of this course, participants will be able to: □</p> <ol style="list-style-type: none"> 1. Demonstrate general navigation through the Menu Bar, Button Bar and Application Areas. □ 2. Demonstrate use of the various menus, home page and button bar icons. □ 3. Demonstrate how to access and use On-Line Help and Hyperlinks in FNAV. □ 4. Describe how to display information in the Unit Main frame and use the List of Values search technique. □ 5. Describe the process to enter a work request.□ 6. Describe the process to add a work request to a work order.□ 7. Describe the process to enter and complete work orders in Work Order Main while capturing information for jobs performed, parts charges, commercial charges, clear Telematics faults, and entering work order, job, and warranty notes.□ 8. Describe the four work order statuses and actions required in each to complete a work order□ 9. Describe the proper process for entering information in the Labor Wedge frame and correcting time entries.□ 10. Describe the basic functionality of the Inventory Management Module to include request, receive, and issue parts purchased through the APS system. □ 11. Describe the forecaster functionality in M5.□ 12. Describe the function of Unit Queries. □ 13. Describe the function of Repair Information Queries. □ 14. Demonstrate by class exercise competency to use the FNAV system.□ 15. Demonstrate the proper method to deliver effective, efficient training to FNAV users. 	24
FOD250	FNAV Refresher for FNAV Users	<p>This is a refresher course for prior attendees who completed FOD200, FOD210, FOD220 or FOD230. This is not a substitute course to gain knowledge of FNAV.</p>	<p>Upon completion of this course, participants will be able to:□</p> <ol style="list-style-type: none"> 1. Demonstrate how to open work orders in FNAV.□ 2. Demonstrate how to add part charges in FNAV.□ 3. Demonstrate how to add commercial charges in NAV.□ 4. Demonstrate how to enter labor charges in NAV.□ 5. Demonstrate how to clear diagnostic trouble codes/faults in NAV.□ 6. Demonstrate how to properly complete work orders in NAV.□ 7. Demonstrate how to close work orders in NAV.□ 8. Explain other functions of NAV from audience requests during the training event. 	8
FOD251	Fleet Navigator (FNAV) New User Training	<p>This course covers the basics of FNAV, from navigation to work requests and work orders.</p>	<p>Upon completion of this course the participant will be able to:</p> <ol style="list-style-type: none"> 1. Log in to FNAV; 2. Navigate through FNAV; 3. Create Work Requests; 4. Record labor, parts, and commercial services on a Work Order; 5. Run reports and queries. 	8

FOD252	Fleet Navigator (FNAV) Super User Training	This course covers higher level functions of FNAV, as well as reviews any enhancements made to the system.	Upon Completion of this course the participant will be able to: 1. Have a better understanding of more advanced functionality within FNAV. 2. Be able to build ad-hoc reports as needed. 3. Run and schedule standard reports as needed.	8
FOD260	Ad Hoc Reporting for NAV Users	This course is an intensive hands-on session for prior trained FNAV users who will be generating reports from NAV. This is not a substitute course to gain knowledge of NAV. You must be an authorized NAV user in order to attend this course.	Upon completion of this course, participants will be able to: 1. Demonstrate how to query and produce one-time reports. 2. Demonstrate how to query and produce recurring reports. 3. Demonstrate how to query and produce custom data field reports.	8
FOD270	Fleet Navigator (FNAV) v15 for FOD Office Administrators	This course is an overview of FNAV v15 as it relates to the daily operations performed by FOD Office Administrators.	Upon completion of this course, participants will be able to: 1. Log into FNAV 2. Navigate within FNAV 3. Review and perform core daily functions within FNAV v15 4. Assist other employees with motor pool reservations	4
FOD271	Fleet Navigator (FNAV) v15 for Section Mechanics	This course is an overview of FNAV v15 as it relates to the daily operations performed by District Maintenance Section Mechanics.	Upon completion of this course, participants will be able to: 1. Log into FNAV 2. Navigate with FNAV 3. Review and perform core daily functions within FNAV v15 4. Open, complete and close Work Orders in FNAV v15	4
FOD272	Fleet Navigator (FNAV) v15 for Section Administrators	This course is an overview of FNAV v15 as it relates to the daily operations performed by District Maintenance Section Administrators.	Upon completion of this course, participants will be able to: 1. Log into FNAV 2. Navigate within FNAV 3. Review and perform core daily functions within FNAV v15	4
FOD273	Introduction to Fleet Navigator (FNAV) v15	This course is an introduction to Fleet Navigator (FNAV version 15) and KeyValet, TxDOT system of record for fleet management and pool vehicle reservations.	Upon completion of this course, participants will be able to: 1. Log into FNAV 2. Navigate within FNAV 3. Look up a unit 4. Submit a work request 5. Log time on a work order (mechanics only) 6. Submit and cancel a pool vehicle reservation	8
FOD274	Fleet Navigator (FNAV) v15 for Fleet Mechanics	This course is an overview of FNAV v15 as it relates to the daily operations performed by FOD Mechanics..	Upon completion of this course, participants will be able to: 1. Log into FNAV 2. Navigate within FNAV 3. Review and perform core daily functions within FNAV v15 4. Open, complete and close work orders in FNAV v15	4
FOD400	Fleet Forum	OD is please to invite non-FOD district supervisors and employees to attend this newly established program delivered in a Forum setting discussing 11 current topics revolving around Fleet systems, work processes, and best practices.	Upon completion of this forum, participants will be able to: 1. Share information on best practices for using Fleet systems and established work processes 2. Discover the latest updates to Fleet systems, equipment, and processes to apply in their district 3. Identify issues still facing the district for future conversations using Fleet Sheet and other media 4. Be able to locate job aids so District personnel can easily utilize Fleet systems to meet current performance needs related to Fleet operations to include customer-facing operations like FNAV and internal operations like tracking preventative maintenance 5. Be able to promote the use of current Fleet best practices in their district 6. Improve cooperation between Fleet Operations Division and districts with emphases in Preventive Maintenance, rental needs, and stockout reporting	8

FOD500	Network Fleet (GPS) User Training	This instructor Led Training is designed for authorized users of the departments FNAV-Finder (Network Fleet GPS Telematics) system. It is designed to enhance skills previously learned through the Network Fleet Training Center portal.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Demonstrate basic navigation by groups and assets within the FNAV-Finder portal in Network Fleet.□ □ 2. Demonstrate how to setup Activity Alerts for equipment assigned to the users business group.□ □ 3. Demonstrate how to setup and generate ad hoc or recurring reports, and use applicable filters to produce desired reporting information.□ □ 4. Demonstrate how to track assets individually or in multiple groups.□ □ 5. Demonstrate how to create Geofences for section, area office, or district operations use.□ □ 6. Demonstrate how to create and manage vehicle groups.□ □ 7. Demonstrate how to use filters, attributes, and view features ot achieve desired data outputs or map views.□ 	4
FOD600	Gradall XL Service and Repair-Basic	This course focuses on the Gradall XL series excavators on how to service, reapiir and troubleshoot. Course involves hands-on diagnostics, use of the BODAS software system and schematic tracing.	Upon completion of this course, the participant will be able to: <ul style="list-style-type: none"> □ 1. Demonstrate the logical steps to troubleshoot a Gradall XL series excavator.□ □ 2. Explain how a Gradall XL series hydraulic system operates.□ □ 3. Demonstrate how to adjust hydraulic pressures using pressure or digital gauges referencing hydraulic schematics.□ □ 4. Describe the various hydraulic systems found on a Gradall XL series.□ □ 5. Explain how to trace circuits on electrical schematics.□ □ 6. Explain how to trace and adjust air systems.□ □ 7. Demonstrate the proper technique and steps for boom adjustments.□ □ 8. Describe the operations and proper shutdown of Tier IV engines.□ 	8
FOD610	Gradall XL Diagnostics & Repair - Advanced	This advanced course for FOD mechanics focuses on the Gradall XL series excavators on how to perform rapid diagnostics and repairs to electrical hydrolic and mechanical systems. Use of the Gradall BODAS diagnostics software will be used.	Upon completion of this course the participants will be able to : <ul style="list-style-type: none"> □ 1. Demonstrate the logical steps to troubleshoot a Gradall XL series excavator,□ □ 2. Perform experience based diagnostics steps to conduct rapid repairs within OEM guidelines.□ □ 3. Demonstrate how to adjust hydraulic pressures digital gauges referencing hydraulic schematics.□ □ 4. Demonstrate and perform code testing with BODAS software electrical systems.□ □ 5. Explain proper servicing of DPF and DEF systems, when and how to change filters, code testing and checking soot levels.□ □ 6. Explain hot to preform a forced regeneration. 	16
FOD650	Etnyre AMU FOD Mechanic/Technician Training	This course delivers extensive hands-on troubleshooting and diagnostics of the Etnyre Centennial and S2000 Asphalt Maintenance Units. This course is for FOD mechanics only. A follow-on course will be delivered concentrating on common operator issues.	Upon completion of this course the participant will be able to: <ul style="list-style-type: none"> 1. Describe the basic operations of the AMU 2. Demonstrate shot rate calibrations to include verifying hydraulic pump, motor sensor, speed and pump output and radar maintenance 3. Describe the proper maintenance of the spray bar and recirculating pump 4. Cite the proper service intervals and required PM actions on AMUs 5. Demonstrate the safety precautions to use when operating or working on AMUs 6. Describe the PM and troubleshooting differences for diesel and propane burners 	

			<ol style="list-style-type: none"> 7. Describe how to diagnose and replace common components found on AMUs 8. Demonstrate how to adjust spray nozzle angles, spray bar height, spray bar angles, igniter's and ignition coils 9. Demonstrate how to diagnose pump pressures, hydraulic valve pack for spray bar lift, shift and wing fold cylinders 10. Demonstrate how to access and read DTC codes from the CPU and use troubleshooting trees 11. Describe the functionality of pneumatic systems for valving, how to flush, service and troubleshooting issues 12. Describe how to diagnose and troubleshoot hydraulics, hydraulic solenoids and other hydraulic issues 13. Demonstrate how to troubleshooting relays and timers for lighting, thermo-coupling, temperature control and emergency shut down of the burners 	16
FOD660	Etnyre FOD Mechanic Field Training	<p>This course delivers operational hands-on troubleshooting of the Etnyre Centennial and S2000 Asphalt Maintenance Units. Familiarization with all operational components of the AMA will be covered. This course is for FOD mechanics only.</p>	<p>Upon completion of this course, participants will be able to:</p> <ol style="list-style-type: none"> 1. Describe the basic operations of the AMU 2. Demonstrate shot rate calibrations to include verifying hydraulic pump, motor sensor, speed and pump output and radar maintenance 3. Describe the proper maintenance of the spray bar and recirculating pump 4. Demonstrate the safety precautions to use when operating or working on AMUs 5. Describe the PM and troubleshooting differences for diesel and propane burners 6. Describe how to diagnose and replace common components found on AMUs 7. Demonstrate how to adjust spray nozzle angles, spray bar height, spray bar angles, igniter's and ignition coils 8. Demonstrate how to diagnose pump pressures and correct . 9. Describe the functionality of pneumatic systems for valving, how to flush and service 10. Describe how to diagnose and troubleshoot hydraulics, hydraulic solenoids and other hydraulic issues 11. Demonstrate how to troubleshooting relays and timers for lighting, thermo-coupling, temperature control and emergency shut down of the burners 	8
FOD850	FLEX III - Pre Trip Preventive Maintenance	<p>Course is delivered at the MNT section level for all equipment operators covering required the pre-trip inspections. A detailed hands-on inspection will take place on a 6 or 10 yard dump truck completing the inspection forms.</p>	<p>Upon completion of this course, participants will be able to:</p> <ol style="list-style-type: none"> 1. Understand the importance of performing daily pre-trip inspections. 2. Understand the personal responsibilities to inspect and maintain equipment for safe operations. 3. Demonstrate the appropriate method for completing and distributing pre-trip checklists. 4. Discuss why it is important to make notes and comments on the pre-trip checklist. 5. Discuss where to find checklists in the PM Manual and eForms. 6. Demonstrate how to identify immediate corrective action needs for air brakes, tires, batteries, hydraulic, fuel and oil systems. 7. Identify what defect found on an inspection will result in an immediate "Red Tag" of the equipment. 8. Discuss how to access and use the ShopKeyPro website for specifications and quick fixes. 9. Conduct a comprehensive and correct per-trip inspection on a 6 or 10 yard dump truck. 	3.5

FOD900	NEXIQ Diagnose Integrated Tool	<p>NEXIQ Diagnostic Integrated Tool. This course provides department mechanics & shop repair coordinators with the skill sets to properly use the NEXIQ Diagnostic Integrated Tool for troubleshooting engine, brake, transmission & off-road heavy equipment.</p>	<p>Upon completion of this course participants will be able to: <input type="checkbox"/></p> <ol style="list-style-type: none"> 1. Be able to launch and configure the NEXIQ Smart Launcher to begin diagnostics. <input type="checkbox"/> 2. Demonstrate the proper methods to connect the NEXIQ laptop via USB cable, Blue-tooth, or other cables for diagnostic connections. <input type="checkbox"/> 3. Describe the data displayed for fault codes and trip information. <input type="checkbox"/> 4. Demonstrate the methods to connect to multiple manufacturer engine types; how to read and determine fault codes; opening and closing fault code trees; clearing and resetting fault code; opening, graphing, and using parameters for engine diagnostics; how to use special tests; how to reprogram available parameters; gathering, saving, printing, and clearing trip data. <input type="checkbox"/> 5. Demonstrate the methods to connect to multiple manufacturer brake types; how to use fault codes; opening and troubleshooting via fault code trees; diagnose the brake system on the vehicle; open, use, and graph data list parameters; how to use special tests and diagnose brake systems. <input type="checkbox"/> 6. Demonstrate the methods to connect to multiple manufacturer transmission types; printing information; how to use fault codes; retrieve fault codes; open fault code trees, troubleshoot, and diagnose; open, use, and graph data list parameters; how to use special test to diagnose transmissions; how to reset adaptive parameters <input type="checkbox"/> 7. Demonstrate the methods to connect multiple manufacturer types of heavy equipment; how to use fault codes; retrieve fault codes; open fault code trees, troubleshoot and diagnose; open, use, and graph data list parameters; how to use special tests to diagnose heavy equipment; how to reset adaptive parameters when diagnosing heavy equipment. 	24
FOD910	Bobcat S850 T870 PM Mech Trng	<p>Bobcat S850 T870 PM Mechanic Training. This course provides department mechanics & preventive maintenance coordinators with the safety aspects, basic operations & preventive maintenance of Bobcat skid steer loaders S850 & compact track loader model T870.</p>	<p>Upon completion of this course participants will be able to: <input type="checkbox"/></p> <ol style="list-style-type: none"> 1. Will be familiar with the Bobcat Service Manual structure. <input type="checkbox"/> 2. Explain the safety precautions and procedures of operating and servicing a Bobcat loader. <input type="checkbox"/> 3. Will be familiar with the operations and features of a Bobcat loader. <input type="checkbox"/> 4. Explain the service schedule for the S850 and T870 loaders. <input type="checkbox"/> 5. Perform preventative maintenance service tasks on the Bobcat S850 and T870 loaders plus attachments. <input type="checkbox"/> 6. Explain the operation and function of the hydraulic control systems used on Bobcat machines. <input type="checkbox"/> 7. Analyze the different Electrical/Electronic schematics for the S850 and T870 machines. <input type="checkbox"/> 8. Explain the operation, features, and communication of the instrument panels. <input type="checkbox"/> 9. Demonstrate on-board functionality using the panels to diagnose and calibrate machine features for: <input type="checkbox"/> 	

			<p>a. SJC <input type="checkbox"/></p> <p>b. Drive Response <input type="checkbox"/></p> <p>c. Lift/Tilt Calibration <input type="checkbox"/></p> <p>d. Steering drift. <input type="checkbox"/></p> <p>10. Explain and demonstrate the ability to read codes from the Bobcat loaders. <input type="checkbox"/></p> <p>11. Service the different electrical connectors used Bobcat loaders. <input type="checkbox"/></p> <p>12. Explain the reasoning for the EGR systems used on Bobcat loaders and how to test. <input type="checkbox"/></p> <p>13. Demonstrate the service requirements and maintenance of the IT4 engine and it's components. <input type="checkbox"/></p> <p>14. Explain the preventative maintenance tasks for the track drive system on the T870 loader. <input type="checkbox"/></p> <p>15. Explain the causes of the most common track damage found on the CTL. <input type="checkbox"/></p> <p>16. Understand the electrical and hydraulic schematics for the S850 and T870 loaders.</p>	8
FOD911	Bobcat S850/T870 Operator Trng	Course provides department maintenance personnel with the safety aspects, operational controls, procedures & preventive maintenance of the Bobcat skid-steer loader-models S850 and T870. Covers the proper method of attaching & removing the attachments.	<p>Upon completion of this course, participants will be able to: <input type="checkbox"/></p> <p>1. Discuss how weight distribution affects skid-steer loader steering and stability. <input type="checkbox"/></p> <p>2. Explain the difference between Tipping Load and Rated Operating Capacity. <input type="checkbox"/></p> <p>3. Have an understanding of the hydrostatic transmission and that the loader will react the moment the steering levers are moved. <input type="checkbox"/></p> <p>4. Explain why maintenance is an important factor for safe, efficient and productive operation. <input type="checkbox"/></p> <p>5. Identify the controls and their functions. <input type="checkbox"/></p> <p>6. Identify the loader's safety features and explain their importance. <input type="checkbox"/></p> <p>7. Explain the steps of safe entry and exit. <input type="checkbox"/></p> <p>8. Explain the reason for changing attachments and the use of the Bob-Tach system. <input type="checkbox"/></p> <p>9. Know the fundamentals of safe and efficient maneuvering, traveling, and working with the attachments.</p>	4
FOD950	Bobcat Skid Steer - Adv Mechanic	This advanced training course is designed for FOD mechanics to diagnose, troubleshoot an repair Bobcat S850 and T870 skid steers. Focus areas will be on 3 year PM cycle requirements, hydraulics, electrical systems, final drives, engines.	<p>Upon completion of this course the participant will be able to.</p> <p>1. Rapid review of the following learning objectives:</p> <p>2. Become familiar with the Bobcat Service Manual structure</p> <p>3. Explain the safety precautions and procedures of operating and servicing a Bobcat loader</p> <p>4. Become familiarized with the operation and features of a Bobcat loader</p> <p>5. Explain the service schedule for the S850 and T870 loaders</p> <p>6. Perform preventative maintenance service tasks to said loaders</p> <p>7. Explain the operation and function of the hydraulic control systems used on Bobcat machines</p> <p>8. Analyze the different Electrical / Electronic Schematics for S850 and T870 machines</p> <p>9. Explain the operation, features and communication of the instrument panels</p> <p>10. Demonstrate on-board functionality using the panels to diagnose and calibrate machine features</p>	

			<p>and calibrate machine features</p> <ol style="list-style-type: none"> 11. Drive Response 12. Lift/Tilt Calibration 13. Steering Drift 14. Explain and demonstrate the ability to read codes from the different machines 15. Service the different electrical connectors used on these loaders 16. Explain the reasoning for the EGR systems used on Bobcat loaders and how to test 17. Become familiarized with the service requirements and maintenance of the IT4 Engine and its components 18. Explain the preventative maintenance tasks for the track drive system on the T870 loader 19. Explain the causes of the most common track damage found on CTL 20. Understand the electrical and hydraulic schematics for the S850 and T870 21. Address any common noted repairs with S850/T870 units since delivery 22. Any factory service advisories that need addressing from date of December 2013 until present 23. Diagnose, troubleshoot and repair of the following systems <ul style="list-style-type: none"> Hydraulics Electrical Final Drive Engine Fuel System Emissions vii. Tracks 	16
GEO101	Basic Geotechnical Engineering for Roadways	Presents geotechnical engineering fundamentals relative to the design, construction and maintenance of pavement systems and transportation structures. Addresses the relationship between soil conditions and roadway elements.	<p>Upon completion of this course, participants will be able to: <input type="checkbox"/></p> <ol style="list-style-type: none"> 1. Describe the function and relationship of geotechnical engineering relative to TxDOT transportation projects. <input type="checkbox"/> 2. Explain the site characterization process relative to both published geologic resources and field sampling and testing. <input type="checkbox"/> 3. Identify and explain the weight and volume relationship that comprises the fundamentals of soil mechanics. <input type="checkbox"/> 4. Compare and contrast properties of fine-grained and coarse-grained soils relative to laboratory test results for soil particle size distribution. <input type="checkbox"/> 5. Explain the interrelationship between moisture content and soil consistency in terms of Atterberg limits. <input type="checkbox"/> 6. Identify the primary soil classification systems used for engineering purposes and classify soils, using the AASHTO and Unified Soil Classification Systems. <input type="checkbox"/> 7. Explain soil compaction and describe how compaction relates to different phases of earthwork construction. <input type="checkbox"/> 8. Explain the concepts of total stress, effective stress and pore water pressure for both geostatic and induced loading conditions. <input type="checkbox"/> 9. Define key terms and concepts associated with soil seepage as related to subsurface drainage solutions. <input type="checkbox"/> 10. Explain the different physical processes of soil movements including consolidation settlement (compressibility) and soil shrinkage/swelling. <input type="checkbox"/> 11. Evaluate shear strength based on laboratory test data (direct and triaxial shear) and express in terms of cohesion and internal friction. 	24

GEO201	Drilled Shafts - NHI 132014	This course covers specific technical guidance on all aspects of designing, installing, and monitoring the construction of drilled shafts.	<p>Upon completion of this course, participants will be able to:</p> <ul style="list-style-type: none"> 1. Describe the various drilling rigs and tools that are available to construct drilled shafts under varied subsurface soil and rock conditions <input type="checkbox"/> 2. Recognize the basic features of drilling aids, such as casings and drilling slurries, and the reasons for certain fundamental requirements for these aids <input type="checkbox"/> 3. Design drilled shafts for axial loading in simple soil and rock profiles <input type="checkbox"/> 4. Demonstrate a general understanding of the elements of designing drilled shafts for lateral loads <input type="checkbox"/> 5. Demonstrate an understanding of the need for load tests and available methods for performing the tests. <input type="checkbox"/> 6. Formulate the basic elements of construction specifications for drilled shafts <input type="checkbox"/> 7. Demonstrate an understanding of integrity testing, repair, and retrofit of defective shafts. <input type="checkbox"/> 8. Estimate costs for drilled shafts 	24
GEO202	Soils And Foundations Wksp-	Geared towards a foundation field engineer who routinely deals with	<p>Upon completion of the course, participants will be able to:</p> <ul style="list-style-type: none"> 1. Identify the minimum level of geotechnical input in various project 	32
GEO203	Drilled Shaft Foundation Inspection (NHI-132070)	<p>Basis for local, regional or national qualification of drilled shaft foundation inspectors. Provides practical knowledge & standard industry practices. Follows FHWA specifications. Participants are encouraged to complete NHI-132070B first.</p>	<p>Upon completion of this course, participants will be able to:</p> <ul style="list-style-type: none"> 1. Identify and understand the inspector's role and duties.<input type="checkbox"/> 2. Recognize key inspection elements of contract documents.<input type="checkbox"/> 3. Identify proper communication and coordination with the engineer and contractor.<input type="checkbox"/> 4. Interpret and verify contractor compliance with items in the drilled shaft installation plan.<input type="checkbox"/> 5. Recognize and identify drilled shaft construction equipment and tools.<input type="checkbox"/> 6. Perform visual field verification of soil/rock material for comparison to supplied soil boring data/logs.<input type="checkbox"/> 7. Calculate percent recovery and rock quality designation (RQD).<input type="checkbox"/> 8. Recognize and identify the various types of drilled shaft construction.<input type="checkbox"/> 9. Perform inspection of drilled shaft excavations for compliance with plans, construction tolerances and cleanliness.<input type="checkbox"/> 10. Verify reinforcing cage construction compliance, including side spacers and cross-hole sonic logging (CSL) tubes.<input type="checkbox"/> 11. Determine concrete volumes for theoretical shafts and develop concrete curves.<input type="checkbox"/> 12. Identify shaft "concreting" irregularities.<input type="checkbox"/> 13. Perform calculations for volume, area, circumference and elevation.<input type="checkbox"/> 14. Locate, explain and apply applicable FHWA, AASHTO and State DOT specifications relating to compliance. 	20
IOD100	Advanced GPS for GIS Mapping	Advanced instruction for users of Trimble mapping grade equipment; expands on material covered in DES720. Covers GPS mapping techniques using Trimble handheld GPS equipment by utilizing laser measuring devices, bar code readers, and digital cameras.	<p>Upon completion of the course, participants will be able to:</p> <ul style="list-style-type: none"> 1. Utilize advanced features of current mobile mapping software.<input type="checkbox"/> 2. Perform advanced data collection techniques to maximize the use of PFO to automate data collection processing in the office.<input type="checkbox"/> 3. Utilize peripheral hardware to aid field data collection. 	20

LGP101	Local Government Project Procedures Qualification for TxDOT	This course trains & qualifies local government (LG) individuals to work on projects performed through an Advanced Funding Agreement. Also trains TxDOT employees on oversight of LG managed project development tasks. FORMER COURSE CODE CON812.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> □ 1. Review state and federal regulations that govern LG projects.□ □ 2. Locate and access resources that assist in successfully completing LG projects.□ □ 3. Review project documentation requirements.□ □ 4. Discuss LG and TxDOT responsibilities. 	12
MNT111	Maintenance Management System Training	Review tools offered by the Maintenance Management System (MMS) for budget monitoring, planning, scheduling maintenance work, recording work performed and reporting for maintenance employees and supporting offices.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Use AgileAssets™ software (MMS).□ □ 2. Explain the MMS business processes used in maintenance operations.□ □ 3. Enter and retrieve Daily Activity Report data.□ □ 4. Run MMS reports.□ □ 5. Approve time worked and retrieve timesheets.□ □ 6. Enter and retrieve 1-year and 4-year maintenance plans. 	24
MNT112	Wildland Fire Workshop	Six part workshop consisting of Introduction, Organization & Communication, Resources & Equipment, Safety, Documentation & Data Collection, Training Programs. Developed by research project 5-6735-01est Practices for TxDOT on Handling Wildland Fires.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Assist TxDOT in effectively responding to wildland fire situations; □ 2. Employ best practices from resources within TxDOT and outside agencies. 	6
MNT113	Grnd Penetrate Radar Operator	This course trains district and division employees to operate and maintain calibration of a Ground Penetrating Radar (GPR) unit; to conduct basic analysis of the data collected from the GPR unit.	Upon completing the course, participants will be able to: <ul style="list-style-type: none"> □ 1. Identify the components of the system.□ □ 2. Demonstrate power-up procedures.□ □ 3. Demonstrate calibration procedures.□ □ 4. Demonstrate system calibration verification procedures.□ □ 5. Conduct measurements.□ □ 6. Identify various data formats required for analysis and process data. 	8
MNT114	Maint Office Managers Course	Course focuses on techniques & tools to meet the responsibilities of the maintenance office. Modules address leadership, communication, conflict resolution, systems, budget, purchasing, time management, safety, reporting & record keeping.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> □ 1. Define and understand the core elements of Maintenance Management.□ □ 2. Define the Maintenance Office Manager's role in personnel management, programs, and other responsibilities in a maintenance office.□ □ 3. Explain their role in the management, and processing of TxDOT resources, such as equipment and supply chain.□ □ 4. Develop and practice efficient stock management techniques.□ □ 5. Understand the office manager's role using Maintenance Management System (MMS), as well as explaining its capabilities and functions in the maintenance office. 	16
MNT115	General Concept for Pavement Analyst	This course is designed to introduce the participant to the Pavement Analyst System and provide hands on, practical application of the system and its use in evaluating typical pavement related data.	Upon completion of this course the participant will be able to: <ul style="list-style-type: none"> □ 1. Define what the Pavement Analyst is, and what it is used for. □ 2. Describe the data types that can be accessed within Pavement Analyst. □ 3. Use the Pavement Analyst o locate records, filter condition data, rut data, ride data, skid data, construction data, and CRIS data. □ 4. Use the Pavement Analyst in order to locate inventory data, identify location reference methods, and run reports. □ 5. Use the GIS Module to generate maps. 	8

MNT116	Advanced Analysis and the 4-year Plans	This course will introduce the learner to the analysis module in Pavement Analyst. This course provides hands on practice running different scenarios within Pavement Analyst.	Upon completion of this course the participant will be able to: 1. Define Network Analysis within the Pavement Analyst System. 2. Define the Network Master File within the Pavement Analyst System. 3. Use the Pavement Analyst System to prepare current section needs. 4. Identify the purpose of the Optimization Analysis window in the Pavement Analyst System. 5. Practice setting up a scenario and reviewing the results using the analysis module within the Pavement Analyst System. 6. Practice including projects from a work plan, generating work plans, and maintaining work plans in the Pavement Analyst System.	8
MNT120	Asphalt Distributor Operator	This course covers the safety practices, preventive maintenance procedures, and operation techniques of an asphalt distributor.	Upon completion of this course, participants will be able to: 1. Complete a pre-trip inspection; 2. Operate an asphalt distributor; 3. Heat asphalt material to an application temperature; 4. Strap an asphalt distributor tank; 5. Enter application data into the distributor computer; 6. Discuss application problems and causes; 7. Calculate application rate.	32
MNT123	Maintenance Section Supervisor Course	This course provides maintenance section supervisors, assistant supervisors & specifically identified maintenance employees with information, practical applications & resources to help them perform their jobs more efficiently, effectively & safely.	Upon completion of this course, participants will be able to: 1. Practice supervisory skills needed for overseeing section operations. 2. Identify the impact that leadership and section operations have on the workplace environment. 3. Discuss the importance of individual accountability in following safety policies and procedures. 4. Review contract policies, procedures and documentation. 5. Identify activities in emergency response operations. 6. Manage section budgets. 7. Practice supervisory skills needed for responding to legal issues. 8. Review traffic control policies and procedures. 9. Practice supervisory skills needed for equipment preventative maintenance and purchasing. 10. Practice supervisory skills needed for managing public complaints.	24
MNT125	Maintenance Contract Inspectors Course	Introduces & reinforces TxDOT maintenance contract inspection policies & guidelines. Includes monitoring maintenance contractor work; ensuring that work meets contract requirements & ensuring that contractors meet applicable specifications.	Upon completion of the course, participants will be able to: 1. Explain services that can be contracted. 2. Explain the different types of maintenance contracts. 3. Explain when a service contract should be used. 4. Identify documents found in a maintenance contract and identify the ones most important to a contract inspector. 5. Explain the responsibilities of the contract inspector in regard to the events that need to take place BEFORE work begins. 6. Name the location in the Construction and Maintenance Contract System (CMCS) to confirm insurability status. 7. Conduct a pre-work meeting successfully. 8. Explain reasons for projecting a positive public image. 9. Discuss why traffic control is a critical on-the-job guideline. 10. Identify key elements of a good contractual relationship with the contractor. 11. List equipment and supplies needed to do the job. 12. Identify the important considerations in the inspection process.	24

			<p>12. Identify the important considerations in the inspection process. <input type="checkbox"/></p> <p>13. Provide three reasons for keeping clear, concise and accurate records. <input type="checkbox"/></p> <p>14. Discuss the process of documenting inspections and properly completing Daily Work Reports and Diary. <input type="checkbox"/></p> <p>15. Document all items necessary for a Daily Work Report thoroughly and in detail. <input type="checkbox"/></p> <p>16. Discuss the purpose of function codes and task numbers. <input type="checkbox"/></p> <p>17. Identify the standards and specifications manuals for specific contract work. <input type="checkbox"/></p> <p>18. Identify the function codes for each specific contract job and how to use them. <input type="checkbox"/></p> <p>19. Review the responsibilities of inspecting and approving contractors' equipment. <input type="checkbox"/></p> <p>20. Utilize department standards to judge quality work performed by contractors.</p>	24
MNT126	Maintenance Crew Leaders Course	An overview of the Transportation Maintenance Crew Chief job duties (daily operations, organization, management, leadership, etc.). Builds and promotes effective crew leader skills to successfully meet & exceed mission requirements.	<p>Upon completion of the course, participants will be able to: <input type="checkbox"/></p> <ol style="list-style-type: none"> 1. Identify and apply situational leadership skills by identifying personal leadership styles. <input type="checkbox"/> 2. Apply principles of being a pro-active leader. <input type="checkbox"/> 3. Identify how planning and scheduling directly relates to resources, materials, equipment, quality and efficiency. <input type="checkbox"/> 4. Exercise efficient time management and prioritizing techniques. <input type="checkbox"/> 5. Describe the importance of safety meetings. <input type="checkbox"/> 6. List the steps in accident/incident reporting. <input type="checkbox"/> 7. Apply fundamental requirements of the TMUTCD in work zone operations. <input type="checkbox"/> 8. List the steps in emergencies and hazardous materials situations. <input type="checkbox"/> 9. Use the Maintenance Manual daily, as required. <input type="checkbox"/> 10. Explain supervisory responsibilities for equipment preventive maintenance. <input type="checkbox"/> 11. Apply Crew Leader specific items such as SW3P, asphalt pavement failures, repairs and preventions, seal coat operations, vegetation management and sign maintenance. <input type="checkbox"/> 12. Identify different types of road environments. <input type="checkbox"/> 13. Discuss features, use and importance of the MMIS system. <input type="checkbox"/> 14. Discuss and apply requirements related to Maintenance Contracting. <input type="checkbox"/> 15. Outline the steps for processing utility and driveway permits. <input type="checkbox"/> 16. Discuss the steps in materials testing. <input type="checkbox"/> 17. Discuss the importance of making sound, ethical decisions on a daily basis. <input type="checkbox"/> 18. Discuss department policies on fraud, misuse of state property and other operational policies related to the Crew Chief position. 	24
MNT127	Maintenance Bridge Inspection Course	Provides training on performing bridge inspections, utilizing safety and operational requirements to recognize potential structural problems. Participants will complete an end-of-course exam.	<p>Upon completion of the course, participants will be able to: <input type="checkbox"/></p> <ol style="list-style-type: none"> 1. Describe common bridge types and components. <input type="checkbox"/> 2. Inspect and identify maintenance or repair needs. <input type="checkbox"/> 3. Document structural and functional conditions. <input type="checkbox"/> 4. Reduce and prevent structure deterioration. <input type="checkbox"/> 5. Reduce long-term maintenance costs. <input type="checkbox"/> 6. Apply departmental safety procedures while conducting inspections. 	16

MNT128	Advanced Maintenance Operation	Designed to provide Maint Section Supvsrs, Area Engrs, Drctrs of Maint, Drctrs of Operations & District Maint Mgrs with advanced information, new & innovative concepts, tools, resources & skills to perform jobs more efficiently, effectively & safely.	<p>Upon completion of the course, participants will be able to: <input type="checkbox"/></p> <ol style="list-style-type: none"> 1. Recognize ways to develop and share best practices through the building of relationships throughout the maintenance network. <input type="checkbox"/> 2. Discuss the management of an effective short and long range pavement maintenance plans. <input type="checkbox"/> 3. Identify qualities of a proactive maintenance program and develop effective strategies. <input type="checkbox"/> 4. Evaluate and apply the concepts used in successful asset preservation programs. <input type="checkbox"/> 5. Discuss the use of advance budgeting methods and tools to develop, implement, and manage an effective maintenance operating budget and One Year Plan. <input type="checkbox"/> 6. Explain the uses of the Maintenance Management System to effectively aid in planning, project selection, and budgeting. <input type="checkbox"/> 7. Introduce concepts, methods, and strategies needed to recognize and develop future TxDOT leaders in maintenance. 	24
MNT129	Maintenance Leadership Academy (NHI-134063)	Covers planning, scheduling, quality control, customer focus, program presentation, asset management, contract management & performance improvement for maintaining bridge & highway systems. Consists of self-paced lessons via Web & classroom sessions.	<p>Upon completion of the course, participants will be able to: <input type="checkbox"/></p> <ol style="list-style-type: none"> 1. Describe the use of maintenance administration in achieving highway agency goals. (Module A) <input type="checkbox"/> 2. Describe how various treatments fit into an overall system preservation program and when to implement them. (Module B) <input type="checkbox"/> 3. Identify appropriate drainage maintenance and roadside management techniques. (Module C) <input type="checkbox"/> 4. Describe the maintenance manager's roles and responsibilities for developing, implementing and managing a comprehensive plan for dealing with weather-related events. (Module D) <input type="checkbox"/> 5. Explain the maintenance and use of traffic control devices (including work zone plans, work zone traffic control devices, signs, striping, guardrails and median barriers) in maintenance operations. (Module E) <input type="checkbox"/> 6. Describe how environmental protection issues, regulations and control measures affect highway maintenance activities. (Module F) 	108
MNT130	Maintainer Operator Basic	This course covers safety practices, preventive maintenance, operations and transportation of a maintainer. It is the prerequisite to MNT134.	<p>Upon completion of the course, participants will be able to: <input type="checkbox"/></p> <ol style="list-style-type: none"> 1. Explain the safety procedures on and around the maintainer; <input type="checkbox"/> 2. Complete a pre-trip inspection; <input type="checkbox"/> 3. Execute start-up and shut-down procedures; <input type="checkbox"/> 4. Perform basic control movements of the maintainer; <input type="checkbox"/> 5. Demonstrate proper flat blading; <input type="checkbox"/> 6. Use correct blade pitch; <input type="checkbox"/> 7. Maintain straight material lines; and <input type="checkbox"/> 8. Transport the maintainer. 	32
MNT134	Maintainer Operator Advanced	This advanced skills course is for operators who have completed MNT130 and have 1 year experience with operating a maintainer.	<p>Upon completion of this course, participants will be able to: <input type="checkbox"/></p> <ol style="list-style-type: none"> 1. Operate the blade, circle, wheels, articulation system and all attachments for ditching operation <input type="checkbox"/> 2. Cut a vee ditch <input type="checkbox"/> 3. Cut a flat bottom ditch <input type="checkbox"/> 4. Cut a back slope <input type="checkbox"/> 5. Explain when to use the scarifier and ripper <input type="checkbox"/> 6. Demonstrate the scarifier and ripper 	32

MNT140	Telescopic Hydraulic Excavator	This course covers safety practices, preventive maintenance, operations, and transportation of a telescopic hydraulic excavator.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Conduct a walk-around inspection of a telescopic hydraulic excavator. □ □ 2. Execute start-up and shut-down procedures. □ □ 3. Apply the excavator brakes. □ □ 4. Switch machine from transport mode to remote mode for digging operations. □ □ 5. Operate the excavator controls. □ □ 6. Drive the equipment on the highway to the jobsite. □ □ 7. Dig a flat ditch and slope the sides. □ □ 8. Dig a ditch over the side using the appropriate controls. □ □ 9. Backfill an excavation. □ □ 10. Load a dump truck 	32
MNT145	Dozer Operator	This course covers the skills needed to safely operate, maintain and transport a dozer.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Perform a complete walk-around inspection. □ □ 2. Orient the blade to flat-blade. □ □ 3. Flat-blade a given area. □ □ 4. Stockpile material. □ □ 5. Cut a Vee ditch. □ □ 6. Backfill an excavation. □ □ 7. Discuss all safety aspects about the operation of the dozer. 	32
MNT148	Snowplow Operator	Designed to provide advanced skill sets for snowplow operators; each participant will complete a series of progressively more difficult simulations on the L-3 Driver Training Solutions Snowplow Simulator accompanied by coaching from instructors.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Discuss and apply the proper decision making in snowplow operations using the SMART process; □ □ 2. Identify the circles of influence related to distractions when operating a snowplow; □ □ 3. Discuss how to mitigate hazards encountered during snowplow operations; □ □ 4. Discuss and understand visibility concerns during snowplow operations; □ □ 5. Understand the effects of fatigue on the operator during snowplow operations; □ □ 6. Demonstrate the principles of managing space around the vehicle during snowplow operations via simulation; □ □ 7. Demonstrate and apply stopping time, speed and stopping distance calculations via simulation; □ □ 8. Demonstrate the guidelines for determining an efficient safe speed in varying conditions and situations via simulation; □ □ 9. Identify industry best practices for safe and efficient snowplow operations; □ □ 10. Demonstrate by means of increasingly difficult simulations the proper and safe techniques for snowplow operations. 	4
MNT149	Anti-icing/De-icing Equipment Training	1 hour classroom training on anti-icing, de-icing materials and proper application rates and calibration techniques. 3 hour equipment inspection and calibration with hands on training.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Calibrate spray equipment to insure more accurate applications on the roadways □ □ 2. Analyze rates of materials to be applied □ □ 3. Discuss truck nozzle configurations and outputs of nozzles 	4
MNT150	Dragline/Crane	This course covers the techniques to safely and properly operate a dragline/crane. Participants will receive a knowledge base upon which potential operators can further develop operating skills.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Perform preventive maintenance and a pre-trip inspection of the dragline/crane before equipment operation. □ □ 2. Discuss all safety aspects about the operation of the dragline/crane. □ □ 3. Demonstrate the proper operational procedure for operating the dragline/crane. □ □ 4. Demonstrate a proper inspection of the key components of the dragline/crane during the operation of the equipment. □ □ 5. Rate the proper way to road the dragline/crane and/or load and position the equipment on the trailer. 	32

MNT155	Backhoe Operator	This course is designed to provide department personnel with the proper skills to safely operate, maintain, and transport a backhoe.	Upon completion of this course, operators will be able to: <ul style="list-style-type: none"> □ 1. Discuss the safety aspects of backhoe operation. □ 2. Complete a walk-around inspection of the backhoe. □ 3. Employ backhoe attachments, outriggers, and front bucket. □ 4. Use the backhoe for digging a trench. □ 5. Slope a ditch on both sides with a backhoe. □ 6. Excavate a given-sized area to grade. □ 7. Backfill an excavation and trench. □ 8. Discuss proper methods of transporting a backhoe. 	32
MNT160	Loader Operator	This course covers the proper operation of a loader and cost-saving maintenance requirements and techniques.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Conduct a walk-around inspection. □ 2. Drive the loader on the highway to the job site. □ 3. Stockpile material. □ 4. Load a dump truck. 	16
MNT164	Sweeper Operator	This course covers the safety practices, preventive maintenance procedures, operation techniques, and transporting procedures for a sweeper.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Conduct a walk around inspection. □ 2. Orient the sweeper and its attachments to and from the job site. □ 3. Make adjustments to the brooms to improve performance. □ 4. Sweep a street or roadway. □ 5. Dump the collector. □ 6. Discuss all safety aspects about the operation of the sweeper. □ 7. Point out the controls for accomplishing different functions for the sweeper. 	24
MNT166	Rotary Broom Operator	This course covers the knowledge and skills to safely operate, maintain, and transport a rotary broom sweeper.	Upon completion of the course, the participant will be able to: <ul style="list-style-type: none"> □ 1. Discuss the safety aspects of the rotary broom sweeper. □ 2. Perform a pre-trip inspection and document the condition of the equipment. □ 3. Demonstrate engaging and disengaging the broom. □ 4. Inspect the key components of the rotary broom sweeper during operation. □ 5. Perform a proper sweeping pattern. □ 6. Determine the range the range of speed and throttle for operation. □ 7. Discuss proper methods of transporting the broom. 	16
MNT171	Cable Barrie Sys-Maint/ Repair	This course is designed to provide employees with an understanding of how cable barrier systems work and how to safely work on and around the tensioned cables.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Describe the basic components of cable barrier systems and how they function. □ 2. List safety measures to be used when working on and around tensioned cables. □ 3. Recognize and identify basic maintenance needs, 	4
MNT172	Equipment Load & Tie Down	This course covers safe transportation of construction equipment and materials over public roads and highways. Emphasis will be on available equipment at the training location.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. State the general requirements for over the road transportation which pertain to vehicle weight, height, width and length. □ 2. Explain the concept of center-of-gravity. □ 3. Explain the idea of the CG markings on equipment. □ 4. Discuss the characteristics of construction equipment in relation to over the road transportation. □ 5. Discuss the characteristics of construction materials in relation to over the road transportation. □ 6. State the regulatory requirements for the road transportation of hazardous waste and dangerous cargos. □ 7. State the regulatory requirements for placarding on over the road transportation. 	8

MNT175	Profiler Operator	This course covers the safety practices, preventive maintenance procedures, operations, and transporting procedures of the Profiling Machine.	Upon completion of the course, the participant will be able to: <input type="checkbox"/> 1. Perform preventive maintenance and a pre-trip inspection of the profiler before operating the equipment. <input type="checkbox"/> 2. Discuss all safety aspects about the operation of the profiler. <input type="checkbox"/> 3. Demonstrate the proper operational procedure for operating the profiler. <input type="checkbox"/> 4. Make and maintain straight scar lines. <input type="checkbox"/> 5. Demonstrate and maintain profile depths. <input type="checkbox"/> 6. Decide what range of speed and throttle speed to operate the profiler. <input type="checkbox"/> 7. Demonstrate and maintain the proper grade and slope control sensor setting and operation. <input type="checkbox"/> 8. Demonstrate how to properly park the profiler. <input type="checkbox"/> 9. Demonstrate how to stop the engine and lower the equipment with the engine stopped.	32
MNT180	Bucket Truck & Digger Derrick	This course covers the safe operation and preventive maintenance of the various bucket trucks and digger derrick trucks used by the department.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. State purpose and application of the ANSI standards. <input type="checkbox"/> 2. Identify each component of a hydraulic system and explain purpose and operation of each. <input type="checkbox"/> 3. State specifications and identify support structure elements on aerial devices and digger derricks and the safety issues applicable to each. <input type="checkbox"/> 4. Perform preventative maintenance checks, setup, and teardown vehicles and equipment at jobsite and use auxiliary tools and accessories operated from trucks. <input type="checkbox"/> 5. Name critical practices for working in close proximity to energized electrical utility structures, perform steps for setup, operation and teardown of traffic barriers and explain grounding practices and procedures. <input type="checkbox"/> 6. Perform aerial lift rescue procedures.	24
MNT181	Bucket Truck & Crane	This course covers the safe operation and preventive maintenance of the various bucket trucks and digger derrick trucks used by the department.	Upon completion of the course, participants will be able to: <input type="checkbox"/> 1. State purpose and application of the ANSI standards. <input type="checkbox"/> 2. Identify the components of a hydraulic system and explain the purpose and operation of each. <input type="checkbox"/> 3. State specifications and identify support structure elements on aerial devices and the safety issues applicable. <input type="checkbox"/> 4. Perform preventative maintenance checks, setup, and teardown vehicles and equipment at jobsite and use auxiliary tools and accessories operated from trucks. <input type="checkbox"/> 5. Name critical practices for working in close proximity to energized electrical utility structures, perform steps for setup, operation and teardown of traffic barriers and explain grounding practices and procedures. <input type="checkbox"/> 6. Perform aerial lift rescue procedures.	16
MNT192	Skid-Steer Operator	This course covers the safety practices, preventive maintenance procedures, operation techniques, and transporting procedures for a skid steer.	Upon completion of the course, participants will be able to: <input type="checkbox"/> 1. Perform a pre-trip inspection of a skid steer. <input type="checkbox"/> 2. Discuss the safety aspects of a skid steer. <input type="checkbox"/> 3. Demonstrate basic operations of a skid steer. <input type="checkbox"/> 4. Change and operate various attachments. <input type="checkbox"/> 5. Discuss methods of transporting a skid steer.	12
MNT193	Roller Operator	This course covers the knowledge and skills to safely operate, maintain, and transport a pneumatic and a metal flat wheel roller.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Explain the difference in pneumatic and metal flat wheel roller operations. <input type="checkbox"/> 2. Discuss the safety aspects of roller operation. <input type="checkbox"/> 3. Complete a pre-trip inspection of a pneumatic and metal flat wheel roller. <input type="checkbox"/> 4. Demonstrate how to properly compact road material using the pneumatic and metal flat wheel roller. <input type="checkbox"/> 5. Discuss proper methods of transporting a roller.	8

MNT208	Heavy Equipment Hydraulics	This course covers the skills and knowledge for safely testing, repairing and maintaining hydraulic systems on heavy equipment.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> 1. Explain the relationship of flow, pressure, and resistance. <input type="checkbox"/> 2. Calculate horsepower, work, and hydraulic vantage. <input type="checkbox"/> 3. Explain open and closed center hydraulic systems. <input type="checkbox"/> 4. Explain operating principles and functions of hydraulic components. <input type="checkbox"/> 5. Select the correct hose type and size. <input type="checkbox"/> 6. Select the correct hydraulic fluids. <input type="checkbox"/> 7. Use service manuals to determine hydraulic system specifications. <input type="checkbox"/> 8. Use diagnostic tools such as pressure gauges and flowmeters. 9. Demonstrate a systematic approach to troubleshooting. 	24
MNT209	Heavy Equipmt Basic Electronic	This course covers the basic electronic theory of the types of engines in TxDOT's fleet. This helps the learner perform diagnostics, troubleshoot and repair electronic systems on heavy equipment employing electronic fuel and operating systems.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> 1. Explain the basic fundamentals of electricity and electronics and differentiate between the two. <input type="checkbox"/> 2. Identify electronic components. <input type="checkbox"/> 3. Check and analyze a wiring schematic. <input type="checkbox"/> 4. Examine an electrical circuitry using a wiring schematic. <input type="checkbox"/> 5. Practice electrical safety. <input type="checkbox"/> 6. Demonstrate the proper use of electrical and electronic testing equipment. <input type="checkbox"/> 7. Demonstrate electrical/electronic troubleshooting procedures. <input type="checkbox"/> 8. Use specific service publications for equipment being serviced. 	24
MNT210	Equip Preventive Maintenance	PM is scheduled inspections, services, & repairs recommended by the equip mfr & those required by law or TxDOT policy. This course uses the periodic inspection process to identify maintenance problems & provides guidance on correcting minor problems.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> 1. Cite TxDOT policy on preventive maintenance. <input type="checkbox"/> 2. Inspect equipment in a consistent method using TxDOT inspection checklists. <input type="checkbox"/> 3. Identify and document maintenance problems. <input type="checkbox"/> 4. Explain the various PM schedules. <input type="checkbox"/> 5. Use the equipment operator manual for performing PM checks. <input type="checkbox"/> 6. Perform minor corrective actions before leaving the maintenance yard. 	16
MNT215	Intro to Heavy Equipment	This is an introduction to the safe operation, maintenance, & transportation of heavy equipment. Participants receive guidelines for preventive maintenance, pre-trip & post-trip inspections, mandatory safety requirements & transporting heavy equipment.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> 1. Identify TxDOT heavy equipment and the functions served. <input type="checkbox"/> 2. Describe the safety requirements of operating heavy equipment. <input type="checkbox"/> 3. Demonstrate how to properly complete a pre-trip inspection checklist. <input type="checkbox"/> 4. Identify and document common maintenance problems. <input type="checkbox"/> 5. Use and process the appropriate pre-trip inspection form. <input type="checkbox"/> 6. Identify the best means of transporting equipment to a work site. 	8
MNT300	Dump Truck Driver 4-6 Yd	Course covers the operation of a power unit (dump truck), trailer & equipment for transportation. Focus is on TxDOT, state/federal laws & safety practices for 4 - 6 yd dump trucks pulling a loaded straight tongue trailer. Participants must have CDL.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> 1. Operate an electronic engine while working with a loaded trailer. <input type="checkbox"/> 2. Use the automatic and manual transmission under load. <input type="checkbox"/> 3. Operate air brakes, anti lock brakes and brake regulators under heavy load conditions. <input type="checkbox"/> 4. Demonstrate proper pre-trip procedures for the power unit and trailer loaded and unloaded. <input type="checkbox"/> 5. Conduct hook-up and drop procedures. <input type="checkbox"/> 6. Use the brake system under heavy load conditions. <input type="checkbox"/> 7. Prepare and place equipment on trailer <input type="checkbox"/> 8. Identify the hauling characteristics of various types of equipment. <input type="checkbox"/> 	

			<p>9. Load and unload trailers. <input type="checkbox"/></p> <p>10. Discuss TxDOT policy, state and federal laws, regulations and safety practices for loading, unloading and securing of equipment on straight tongue trailers with dump truck power units. <input type="checkbox"/></p> <p>11. Demonstrate preventive maintenance measures for the power unit, equipment transported and the trailer. <input type="checkbox"/></p> <p>12. Operate a loaded unit on the roadway using defensive driving techniques.</p>	32
MNT301	Dump Truck Driver 10-12 Yd	<p>Course covers the operation of a power unit (dump truck), trailer & equipment for transportation. Focus is on TxDOT, state/federal laws & safety practices for 10 - 12 yd dump trucks pulling a loaded straight tongue trailer. Participants must have CDL.</p>	<p>Upon completion of this course, participants will be able to: <input type="checkbox"/></p> <p>1. Operate a dump truck with a loaded trailer. <input type="checkbox"/></p> <p>2. Use the automatic and manual transmission under load pertaining to the size of dump truck. <input type="checkbox"/></p> <p>3. Correctly operate air brakes, under different load conditions. <input type="checkbox"/></p> <p>4. Follow proper pre-trip procedures for the dump truck, to include the trailer loaded and unloaded. <input type="checkbox"/></p> <p>5. Conduct proper hook-up and drop procedures. <input type="checkbox"/></p> <p>6. Use the brake system under different load conditions. <input type="checkbox"/></p> <p>7. Prepare and place equipment on a trailer. <input type="checkbox"/></p> <p>8. Identify the hauling characteristics of various types of equipment. <input type="checkbox"/></p> <p>9. Load and unload trailers. <input type="checkbox"/></p> <p>10. Utilize TxDOT, state and federal laws, regulations, and safety practices pertaining to loading and unloading or securing of equipment dump trucks and trailers. <input type="checkbox"/></p> <p>11. Demonstrate preventive maintenance on dump trucks and trailers. <input type="checkbox"/></p> <p>12. Operate a loaded Dump Truck on the roadway using defensive driving techniques.</p>	32
MNT303	Semi-Tractor/Trailer Driver	<p>Course covers the operation of a tractor/trailer combination. Focus is on TxDOT, state/federal laws & safety practices for tractor-trailer rigs. Participants must have CDL.</p>	<p>Upon completion of this course, participants will be able to: <input type="checkbox"/></p> <p>1. Perform tractor-trailer rig pre-trip inspection in accordance with CDL standards. <input type="checkbox"/></p> <p>2. Demonstrate correct ascend and descend gear sequences using double clutching method. <input type="checkbox"/></p> <p>3. Recognize professional driving techniques and key safe driving elements. <input type="checkbox"/></p> <p>4. Perform CDL brake check and minor adjustments with manufacturer recommendations. <input type="checkbox"/></p> <p>5. Perform backing tractor-trailer rig with/without additional trailer. <input type="checkbox"/></p> <p>6. Perform safe and efficient coupling and uncoupling of trailer to tractor unit. <input type="checkbox"/></p> <p>7. Define and perform safe, legal loading and securing procedures for <input type="checkbox"/></p> <p>van, flat bed, heavy equipment haul trailers (lowboys). <input type="checkbox"/></p> <p>8. Exhibit ability to properly operate a diesel engine.</p>	24

MNT305	CDL Preparatory Exam Training	This course provides classroom and hands-on training to help the participant successfully pass the 5 written exams and skills tests required by the state for a CDL. NOTE: Participants are responsible for all CDL license related fees.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Demonstrate mastery of general knowledge of sections 1, 2, 3 of the Texas Commercial Motor Vehicle Drivers Handbook. <input type="checkbox"/> 2. Identify parts of an air brake system, describe what to inspect on an air brake system, and state proper use of air brakes. <input type="checkbox"/> 3. Demonstrate how to drive a combination vehicle. <input type="checkbox"/> 4. Describe what to inspect on a combination vehicle; <input type="checkbox"/> 5. Demonstrate proper commercial vehicle pre-trip inspection; <input type="checkbox"/> 6. Demonstrate a proper right and left turn; <input type="checkbox"/> 7. Demonstrate proper coupling and uncoupling of a trailer; <input type="checkbox"/> 8. Demonstrate how to properly perform air brake skills test on a vehicle. <input type="checkbox"/> 9. Demonstrate proper backing and parallel parking of a truck and trailer. <input type="checkbox"/> 10. Recognize the variety of situations participant may face during the on-road driving test. <input type="checkbox"/> 11. Demonstrate how to control vehicle during basic vehicle control skills test.	32
MNT306	Truck Driving Simulation Train	This course will expedite and enhance the skill sets for inexperienced and experienced dump truck operators. Each participant will complete a series of progressive simulations on the MPRI dump truck simulator followed by coaching from the instructor.	Upon completion of the course, the participant will be able to: 1. Discuss and apply the proper driving decision making based on environmental influence and hazard perception; 2. Discuss all safety aspects about the operation of the dump truck; 3. Demonstrate the proper operational procedure for space and speed awareness; 4. Demonstrate a proper following distance; 5. Demonstrate the proper vehicle handling; 6. Understand the center of gravity as it applies to the vehicle; 7. Demonstrate the proper handling of emergency situations.	4
MNT400	Homeland Security Training	This course trains employees to identify and report suspicious activities or objects or possible terrorist incidents; to know the different roles in system security, types of terrorist weapons and why terrorists do what they do.	Upon completion of the course, participants will be able to: <input type="checkbox"/> 1. Identify their role in reducing vulnerability; <input type="checkbox"/> 2. Identify suspicious activities and behavior; <input type="checkbox"/> 3. Identify suspicious objects; <input type="checkbox"/> 4. Follow TxDOT's procedures when suspicious objects or activities are seen <input type="checkbox"/> 5. Explain TxDOT's role in Homeland Security.	3
MNT401	Intro to NIMS/ICS IS700/IS100	The National Management Incident System is a comprehensive, national approach to incident management that is applicable at all jurisdictional levels and across functions disciplines.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Describe the key concepts and principles underlying NIMS. <input type="checkbox"/> 2. Identify the benefits of using ICS as the national incident management model. <input type="checkbox"/> 3. Describe when it is appropriate to institute an Area Command. <input type="checkbox"/> 4. Describe when it is appropriate to institute a Multiagency Coordination System. <input type="checkbox"/> 5. Describe the benefits of using a Joint Information System (JIS) for public information. <input type="checkbox"/> 6. Identify the ways in which NIMS affects preparedness. <input type="checkbox"/> 7. Describe how NIMS affects how resources are managed. <input type="checkbox"/> 8. Describe the advantages of common communication and information management systems. <input type="checkbox"/> 9. Explain how NIMS influences technology and technology systems. <input type="checkbox"/> 10. Describe the purpose of the NIMS Integration Center <input type="checkbox"/> 11. Describe and demonstrate basic knowledge of the Incident Command System.	4

MNT402	Homeland Security	Teaches employees how to spot suspicious activities & packages, hold group exercises to discuss possible terrorist targets in their areas of responsibility, report suspicious activities, & report possible terrorist incidences.	Upon completion of the course, participants will be able to: <input type="checkbox"/> 1. Identify their role in reducing vulnerability. <input type="checkbox"/> 2. Identify suspicious activities and behavior. <input type="checkbox"/> 3. Identify suspicious objects. <input type="checkbox"/> 4. Explain TxDOT's procedures to report suspicious objects or activities. <input type="checkbox"/> 5. Explain TxDOT's role in Homeland Security.	4
MNT410	Herbicide Certification	The current Agriculture Code requires TxDOT employees to possess a valid, non-commercial, pesticide applicator's license prior to applying herbicide on the transportation system right-of-way, or on the grounds of any TxDOT building. <input type="checkbox"/>	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Recognize the appropriate herbicides to control specific unwanted vegetation; <input type="checkbox"/> 2. Discuss spray roadway appurtenances safety and prevent erosion; and <input type="checkbox"/> 3. Describe how to operate, calibrate and repair TxDOT constructed herbicide spray vehicles.	8
MNT411	Herbicide Equipment Training	A hands-on training on the operation & maintenance of herbicide equipment used by maintenance personnel with a pesticide applicator's license. The course will ensure proper application of herbicide equipment & decrease down time for equipment repairs.	Upon completion of the course, participants will be able to: <input type="checkbox"/> 1. Demonstrate ability to operate herbicide equipment; <input type="checkbox"/> 2. Calibrate herbicide equipment; <input type="checkbox"/> 3. Troubleshoot potential equipment problems; and <input type="checkbox"/> 4. Perform minor repairs to equipment.	4
MNT412	Revegetation Training	Introduces design concepts & tasks necessary to develop plans & specifications that lead to successful revegetation. Covers inspection & monitoring activities for successful revegetation.	Upon completion of this course, participants will be able to: 1. Describe the fundamental principles of revegetation operations; 2. Specify planting methods and materials for successful revegetation; 3. Describe limited number of erosion control techniques; 4. Detail common revegetation methods; 5. Direct a contractor's revegetation operations.	7
MNT413	Revegetation During Construct.	This environmental training provides an overview of the importance of revegetation to ensure compliance with Clean Water Act, Section 102 and the Texas Pollution Discharge Elimination System (TPDES), Construction General permit.	Upon completion of this course, participants will be able to: 1. Explain the importance of revegetation to storm water controls; 2. Specify planting methods and materials for successful revegetation; 3. Identify TxDOT approved seed types and rates; 4. Detail the importance of inspections, documentation, and communication.	1
MNT414	Const Thin Hot Mix Asp Overlay	This course will provide instruction on the proper construction, quality control, and inspection methods for thin, hot mix asphalt overlays.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Describe the concept of pavement preservation and thin overlays as part of a comprehensive pavement preservation strategy. <input type="checkbox"/> 2. Explain characteristics and functions of different types of thin HMA overlays. <input type="checkbox"/> 3. Describe inspection requirements for thin overlays. <input type="checkbox"/> 4. Identify proper construction methodology (surface prep, paving, compaction). <input type="checkbox"/> 5. Explain methods for controlling quality in the field. <input type="checkbox"/> 6. Describe potential problems and solutions (troubleshooting).	4
MNT507	Alternative Fuel Orientation	This course provides demonstration-performance type training on operating alternative fuel vehicles.	Upon completion of this class, participants will be able to: <input type="checkbox"/> 1. Safely fuel alternative fuel vehicles. <input type="checkbox"/> 2. Safely operate alternative fuel vehicles.	2
MNT508	Fueling with Alternative Fuel	This course provides demonstration-performance type training on how to safely fuel alternative fuel vehicles.	Upon completion of this course, participants will be able to: 1. Safely fuel alternative fuel vehicles.	2

MNT512	ABS/Hydraulic Brake System	Course covers skills and working knowledge of ABS/Hydraulic brake systems on light duty vehicles and heavy equipment. Material includes diagnostics, troubleshooting, and performing routine and basic repairs.	<p>Upon completion of the course, participants will be able to:</p> <ul style="list-style-type: none"> 1. Demonstrate a knowledge and understanding of the basic theory and operation of hydraulic brake system. 2. Explain the basics of ABS brake operation. 3. Identify and locate hydraulic and ABS brake system components and explain their function. 4. Analyze brake problems including brake components for wear and usability. 5. Make brake system adjustments. 6. Make brake system and/or components repairs. 7. Use service publications pertaining to the brake system being serviced. 8. Use "special tools" and equipment related to brake repair. 9. Practice general shop safety. 	24
MNT516	ABS/Pneumatic Brake System	Course covers skills and working knowledge of ABS/Pneumatic brake systems on light duty vehicles and heavy equipment.	<p>Upon completion of the course, participants will be able to:</p> <ul style="list-style-type: none"> 1. Demonstrate basic knowledge of the theory and operation of pneumatic brake systems. 2. Explain the basics of ABS brake operation. 3. Identify and locate pneumatic and ABS brake system components and explain their function. 4. Analyze brake problems including brake components for wear and usability. 5. Make brake system adjustments. 6. Make brake and/or component repairs. 7. Use service publications pertaining to the brake system being serviced. 8. Use "special tools" and equipment related to brake repair. 9. Practice general shop safety. 	24
MNT517	LPG Vehcl Diag & Trbl (A-104)	Covers tools & equipment, troubleshooting, diagnostics & repair of the liquefied petroleum gas (LPG) system on Alternative Fuel Vehicles (AFVs). Explains how the LPG system works, interaction with OEM electronics, controls & components.	<p>Upon completion of this course, participants will be able to:</p> <ul style="list-style-type: none"> 1. Identify LPG characteristics and constituents. 2. Identify hazards associated with incorrect air-fuel mixture. 3. Identify gaseous fuel system components, component functions and applications. 4. Identify diagnostic and repair procedures for vaporizer malfunctions. 5. Identify different vapor carburetion systems, methods of fuel delivery and controls and theory of operation. 6. Identify different manufacturer's electronic engine controls, computerized fuel mixture support, justification and necessity of electronic engine support to maintain minimal exhaust emissions, explanation of federal test procedures. 7. Identify and understand non-core technology propane fuel systems in use by original vehicle manufacturers. 8. Identify exhaust emissions and methods of reducing emissions. 9. Identify and diagnose driver and drivability complaints, backfires and other performance problems. 	8
MNT518	Ford F-150 Bi-Fuel (LPG) Fleet	Covers tools & equipment, troubleshooting, diagnostics & repair of the liquefied petroleum gas (LPG) system on the Ford OEM Alternative Fuel Vehicles (AFVs). Explains how the LPG system works, interaction with OEM electronics, controls & components.	<p>Upon completion of this course, participants will be able to:</p> <ul style="list-style-type: none"> 1. Identify the characteristics of propane; describe operating characteristics of vehicle using LPG; explain LPG fuel injection and combustion; identify intake air displacement and dilution of air charge during LPG operation; explain theory and operation of bi-fuel vehicle, and locate LPG fuel system components. 2. Identify safety requirements of propane fuel, and describe safety procedures required when servicing the system. 3. Demonstrate bi-fuel vehicle component function, location, and operation. 4. Perform diagnostic procedures, utilize and interpret special tools when performing diagnostic procedures, identify bi-fuel service 	16

			<p>publication diagnostic procedures, and effectively navigate the bi-fuel service publication.</p> <p>5. Perform bi-fuel LPG system service procedures and utilize bi-fuel service publications when diagnosing and servicing bi-fuel vehicles.</p>	
MNT519	Ford F-150 Bi-Fuel Fleet	Covers tools & equipment, troubleshooting, diagnostics & repair of the liquefied petroleum gas (LPG) system and the compressed natural gas (CNG) system on the Ford OEM Alternative Fuel Vehicles (AFVs).	<p>Upon completion of this course, participants will be able to:</p> <ol style="list-style-type: none"> 1. Identify the characteristics of propane and CNG, describe operating characteristics of vehicle using LPG/CNG, explain LPG/CNG fuel injection and combustion, identify intake air displacement and dilution of air charge during LPG/CNG operation, explain theory and operation of bi-fuel vehicle, and locate LPG/CNG fuel system components. 2. Identify safety requirements of propane fuel, natural gas fuel and describe safety procedures required when servicing the two systems. 3. Demonstrate bi-fuel vehicle component function, location, and operation. 4. Perform diagnostic procedures, utilize and interpret special tools when performing diagnostic procedures, identify bi-fuel service publication diagnostic procedures, and effectively navigate the bi-fuel service publication. 5. Perform bi-fuel LPG/CNG system service procedures and utilize bi-fuel service publications when diagnosing and servicing bi-fuel vehicles. 	24
MNT600	Welding, General Shop	Introduces basic TxDOT shop safety, identification and proper handling of hazardous materials, elementary interpretation of blueprints, operation of oxy-fuel cutting and welding equipment, and operation of Shielded Metal Arc Welding (SMAW) equipment.	<p>Upon completion of this course, participants will be able to: <input type="checkbox"/></p> <ol style="list-style-type: none"> 1. Identify hazards associated with welding equipment and processes. <input type="checkbox"/> 2. Interpret a Material Safety data Sheet (MSDS). <input type="checkbox"/> 3. Use and maintain tools and equipment. <input type="checkbox"/> 4. Practice shop welding safety. <input type="checkbox"/> 5. Perform math calculations. <input type="checkbox"/> 6. Identify object views, lines and dimensions. <input type="checkbox"/> 7. Demonstrate proper use of measuring devices. <input type="checkbox"/> 8. Fabricate a simple project. <input type="checkbox"/> 9. Identify and classify fuels and filler metals. <input type="checkbox"/> 10. Identify and maintain major components of oxy-fuel welding equipment. <input type="checkbox"/> 11. Describe oxy-fuel welding and cutting safety procedures. <input type="checkbox"/> 12. Demonstrate methods for testing oxy-fuel systems for leaks. <input type="checkbox"/> 13. Demonstrate how to set up, light, adjust, extinguish and disassemble oxy-fuel welding equipment. <input type="checkbox"/> 14. Explain the effects of torch angle, flame height, filler metal size and welding speed on gas welds. <input type="checkbox"/> 15. Perform entry-level oxy-fuel welding and cutting operations. <input type="checkbox"/> 16. Describe plasma torch and plasma arc cutting. <input type="checkbox"/> 17. Set-up and use a plasma cutting torch. <input type="checkbox"/> 18. Describe principles of Shielded Metal Arc Welding (SMAW). <input type="checkbox"/> 19. Identify and explain the functional components of an arc welding machine. <input type="checkbox"/> 20. Identify electrode classifications. <input type="checkbox"/> 21. Define welding current, open circuit voltage and operating voltage. <input type="checkbox"/> 22. Set up an arc welding machine properly. <input type="checkbox"/> 23. Demonstrate knowledge of SMAW safety. <input type="checkbox"/> 24. Perform SMAW operations in various positions, using selected electrodes and welding different joint designs. 	32

MNT602	Welding, Shield Metal Arc (Basic)	Introduces the beginning welder to the basic requirements and fundamentals of the Shielded Metal Arc Welding (SMAW) process. Provides a review of shop safety and oxy-fuel cutting techniques.	<p>Upon completion of this course, participants will be able to:</p> <ol style="list-style-type: none"> 1. Define the principles of arc welding. 2. Identify and explain the functional components of an arc welding machine. 3. Define welding current, open circuit voltage and operating voltage. 4. Identify American Welding Society electrode classification. 5. Describe arc welding operations of fillet and groove joints. 6. Explain precautions used when welding various metals and alloys. 7. Explain heat treatments of low-alloy steels. 8. Describe effects of pre-heating and post-weld heating. 9. Explain weld size and profiles. 10. Select materials for a job. 11. Set up oxy-fuel welding and cutting equipment. 12. Prepare plates for welding. 13. Demonstrate safe uses of tools and equipment. 14. Set up an arc welding machine properly. 15. Perform SMAW operations in various positions, using selected electrodes and different joint designs. 16. Identify and explain the functional components of Carbon Arc Cutting equipment. 17. Perform Carbon Arc Cutting (gouging). 18. Discuss quality control in weld testing and inspection. 19. Prepare test coupons. 20. Perform coupon testing. 21. Identify discontinuities and defects in welds. 	32
MNT603	Welding, Shield Metal Arc (Advanced)	Further advances welding techniques in the Shielded Metal Arc Welding (SMAW) process. Participants will be required to produce welds in the vertical and overhead positions on plate, T joint (multiple passes) and V groove with backing bar on mild steel.	<p>Upon completion of this course, participants will be able to:</p> <ol style="list-style-type: none"> 1. Define principles of arc welding. 2. Identify and explain the function of the components of an arc welding machine. 3. Define welding current, open circuit voltage and operating voltage. 4. Identify the American Welding Society electrode classification. 5. Describe arc welding operations of fillet and groove joints. 6. Explain precautions used when welding various metals and alloys. 7. Explain heat treatments of low alloy steels. 8. Describe effects of pre-heating and post-weld heating. 9. Explain weld size and profiles. 10. Select materials for a job. 11. Set up oxy-fuel welding and cutting equipment. 12. Prepare plates for welding. 13. Demonstrate the safe use of tools and equipment. 14. Set up an arc welding machine properly. 15. Perform SMAW operations in various positions, using selected electrodes and different joint designs. 16. Identify and explain the functions of the components of Carbon Arc Cutting equipment. 17. Perform Carbon Arc Cutting (gouging). 18. Discuss quality control in weld testing and inspection. 19. Prepare test coupons. 20. Perform coupon testing. 21. Identify discontinuities and defects in welds. 22. Discuss problems of welding discontinuities. 23. Perform corrective measures for weld discontinuities and defects. 	32

MNT604	Welding, Gas Metal Arc (GMAW)	Introduction to the principles of Gas Metal Arc Welding (GMAW), equipment setup, use & safety. Will produce fillet welds in flat, vertical & horizontal positions on plate, T-joint & V-groove with backing bar on mild steel. Includes aluminum welding.	<p>Upon completion of this course, participants will be able to:</p> <ul style="list-style-type: none"> 1. Explain the basic theory of gas metal arc welding. 2. Define gas metal arc welding terms. 3. Identify gas metal arc welding equipment and components. 4. Describe safety rules and equipment used.. 5. Discuss filler metals. 6. Discuss metal transfer in gas metal arc welding. 7. Properly set-up GMAW welding equipment. 8. Describe welding positions with various joint designs on plate. 9. Prepare plates for welding. 10. Weld structural joints. 11. Discuss aluminum welding. 12. Identify aluminum welding equipment and components. 13. Select materials. 14. Perform aluminum welding operations. 15. Evaluate quality of welds. 	32
MNT605	Welding, Gas Tungsten (GTAW)	Introduction to the principles of Gas Tungsten Arc Welding (GTAW), equipment setup, use & safety. Will produce welds in flat, vertical & horizontal positions constructing structural joints (butt, lap & T-joint) with 3 different metals.	<p>Upon completion of this course, participants will be able to:</p> <ul style="list-style-type: none"> 1. Describe safety rules and equipment used. 2. Define GTAW welding terms. 3. Explain the basic theory of GTAW welding. 4. Identify GTAW welding equipment and components. 5. Discuss filler metals. 6. Prepare plates for welding. 7. Properly set-up GTAW welding equipment for a project. 8. Describe structural joint designs and welding positions. 9. Weld structural joints, 10. Properly and safely use and maintain tools and equipment. 11. Practice shop safety. 12. Perform visual inspections. 13. Critique welds. 14. Develop proficiency in weldments and positions. 15. Evaluate weldments. 	32
MNT606	Bridge Welding Training	This course is designed for the experienced welder with a good foundation in the basics of welding. The course will focus on welding requirements and techniques necessary to obtain a TxDOT Bridge Welders Certification issued by the Bridge Division.	<p>Upon completion of the course, participants will be able to:</p> <ul style="list-style-type: none"> 1. Demonstrate proper techniques necessary to produce quality fillet and groove welds using SMA E-7018 electrodes (using either 1/8" or 5/32" diameter rods) in all positions. 2. Demonstrate proper techniques necessary to perform removal of existing weld. 3. Make groove welds on 1" plate specimens in the vertical (3G) and overhead (4G) positions. 	32
MNT702	Seal Coat Inspection & Applications	Provides instruction on the proper inspection methods and equipment used in seal coat construction.	<p>Upon completion of this course, participants will be able to:</p> <ul style="list-style-type: none"> 1. Describe the concept of pavement preservation strategies. 2. Explain the need for pavement preservation training. 3. Review seal coat terminology. 4. Describe the need for and limitations of seal coat applications. 5. Discuss factors which may influence the performance of seal coat treatments. 6. Identify defects in seal coats and surface treatments. 7. Describe safe practices and procedures applicable to seal coat work. 8. Describe the preparatory phases for a seal coat project. 9. Describe repairs that may be required prior to a seal coat project. 10. Describe the proper methodology of stockpiling aggregate. 	8

			<p>10. Describe the proper methodology of stockpiling aggregate. <input type="checkbox"/></p> <p>11. Describe how to effectively plan and conduct a pre-construction meeting. <input type="checkbox"/></p> <p>12. List typical types of equipment required for a seal coat project. <input type="checkbox"/></p> <p>13. Explain the general inspection procedures for seal coat equipment. <input type="checkbox"/></p> <p>14. Describe the sequence of events during a full-width seal coat, strip/spot seal or surface treatment application.</p>	
MNT703	Seal Coat Planning & Design	Provides engineering guidelines for planning, designing and constructing seal coats.	<p>Upon completion of this course, participants will be able to: <input type="checkbox"/></p> <p>1. Describe the concept and goals of pavement preservation strategies. <input type="checkbox"/></p> <p>2. Explain the need for pavement preservation training. <input type="checkbox"/></p> <p>3. Describe different maintenance treatments. <input type="checkbox"/></p> <p>4. Review seal coat terminology. <input type="checkbox"/></p> <p>5. Describe the need for and limitations of seal coat applications. <input type="checkbox"/></p> <p>6. Discuss factors which may influence the performance of seal coat treatments. <input type="checkbox"/></p> <p>7. Identify defects in seal coats and surface treatments. <input type="checkbox"/></p> <p>8. Identify roadway factors that affect the decision to use a seal coat process. <input type="checkbox"/></p> <p>9. Identify the type of roadway surface deficiencies that benefit from seal coats. <input type="checkbox"/></p> <p>10. Explain how traffic volume affects seal coat treatments. <input type="checkbox"/></p> <p>11. Describe various types of seal coats and surface treatments. <input type="checkbox"/></p> <p>12. Explain how to apply the Modified Kearby Design Method. <input type="checkbox"/></p> <p>13. Describe and apply the process of communication and coordination in a seal coat project. <input type="checkbox"/></p> <p>14. Explain the properties and specifications of various binders and aggregates to determine proper selection for seal coat projects. <input type="checkbox"/></p> <p>15. Describe how to plan and contract a seal coat project. <input type="checkbox"/></p> <p>16. Demonstrate how to effectively handle customer seal coat or surface treatment complaints.</p>	7
MNT801	Bridge Maintenance Training (NHI-130108)	Focuses on cost-effective bridge maintenance and repair procedures performed by typical transportation agency crews. Includes step-by-step maintenance and repair instructions on common bridge elements. Bridge preservation is emphasized throughout.	<p>Upon completion of this course, participants will be able to: <input type="checkbox"/></p> <p>1. Justify, develop and implement a cost-effective preservation strategy for a group of bridges. <input type="checkbox"/></p> <p>2. Identify maintenance or repair needs and select the best remedial strategy. <input type="checkbox"/></p> <p>3. Describe properties and preservation options involving common bridge materials such as concrete, steel and timber. <input type="checkbox"/></p> <p>4. Describe the step-by-step tasks required to accomplish proven preservation procedures on the various bridge elements. <input type="checkbox"/></p> <p>5. Identify critical members and avoid procedures that might result in damage such as field welding repairs on fracture critical tension members. <input type="checkbox"/></p> <p>6. Recognize problems that warrant specialized expertise. <input type="checkbox"/></p> <p>7. Apply effective management techniques (such as planning, scheduling, monitoring and reporting) during daily bridge maintenance operations.</p>	32

MNT803	Rehab Strategies for Flex Pave	An introduction to the methods of nondestructively testing (NDT) pavements to identify the causes of pavement distress. Includes hands-on applications where NDT data from recent TxDOT projects will be processed.	Upon completion of this course, participants will be able to: 1. Describe the approach to collecting and interpreting FWD and GPR data; <input type="checkbox"/> 2. Describe the approach to collecting and interpreting GPR data; <input type="checkbox"/> 3. Interpret pavement distress types to identify potential causes; <input type="checkbox"/> 4. Determine when and how to use the Dynamic Cone Penetrometer; <input type="checkbox"/> 5. Describe the approach to conducting pavement failure investigations; <input type="checkbox"/> 6. Generate rehabilitation alternatives for pavement structures using FPS19; and <input type="checkbox"/> 7. Explain reclamation concepts and how to select stabilizer types.	24
MNT812	Winter Weather Operations	It is important that each District and its maintenance sections provide an acceptable level of service during snow and ice events that permit traffic movement to take place under varying weather conditions.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. State the goals of your Districts winter weather response program. <input type="checkbox"/> 2. Explain your Districts level of service for winter weather response. <input type="checkbox"/> 3. Prepare for the winter weather season relative to materials, equipment, and training. <input type="checkbox"/> 4. Describe how the winter weather materials used in your District affect snow and ice. <input type="checkbox"/> 5. List the equipment used for winter weather response in your District. <input type="checkbox"/> 6. Calibrate material spreaders and related equipment used for winter weather response. <input type="checkbox"/> 7. Identify the safety practices and procedures associated with winter weather response.	12
MNT813	Winter Weather Management Training	Winter Weather Management Training is a workshop designed to assist District maintenance and supervisory personnel to more effectively address the issues and challenges associated with responding to winter storms.	Upon completion of this course, participants will be able to: 1. Update the District snow and ice control plan. 2. Explain the State Wide Plan for Winter Maintenance Operations. 3. Organize the emergency response necessary to manage a winter storm. 4. Apply weather data to winter maintenance decision making. 5. Explain how snow and ice chemicals are key to proactive winter maintenance. 6. List ways to optimize equipment for winter maintenance applications. 7. Plan for the winter season relative to material, equipment, and personnel. 8. Utilize best practices for winter operations before, during, and after the storm.	6
NIM110	Incident Command System, Intro	This course introduces the principles of the Incident Command System (ICS). ICS is a standardized, on-scene emergency management construct that involves the combination of facilities, equipment, personnel, procedures and communications.	Upon completion of this course, participants will be able to: 1. Several applications for ICS 2. The major ICS functions & their primary responsibilities 3. ICS organizational units 4. ICS span of control 5. The major incident facilities and function of each 6. What an Incident Action Plan is and how it is used at an incident 7. Common responsibilities associated with assignments	4
NIM210	ICS for Single Resources	This course is the second in a series of Incident Command System (ICS) courses designed to meet the all-hazard, all agency National Incident Management System (NIMS) ICS requirement for operational personnel.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Describe the Incident Command System (ICS) organization appropriate to the complexity of an incident or event. <input type="checkbox"/> 2. Use ICS to management an incident or event.	12

NIM300	ICS, Intermediate	This course is the third in a series of Incident Command System (ICS) courses designed to meet the all-hazard, all agency National Incident Management System (NIMS) ICS requirement for operational personnel. It is intermediate level training.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Describe how the NIMS Command and Management component supports the management of expanding incidents. □ 2. Describe the incident/event management process for supervisors and expanding incidents as prescribed by the ICS. 	2
NIM400	ICS, Advanced	This course is the fourth in a series of Incident Command System (ICS) courses designed to meet the all-hazard, all agency National Incident Management System (NIMS) ICS requirement for operational personnel. It is advanced level training.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Identify the incident management process of command and general staff functions during complex incidents as prescribed by the ICS. □ 2. Describe the implementation of the incident management process on a complex incident. □ 3. Describe the management and coordination process during multiple incidents. 	2
NIM710	National Incident Mgmt System	NIMS is a comprehensive, national approach to incident management; applicable across a full spectrum of potential incidents & hazards. It improves the coordination & cooperation between public & private entities in incident management activities.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □□ 1. Describe the key concepts and principles underlying NIMS. □ 2. Identify the benefits of using ICS as the national incident management model. □ 3. Describe when it is appropriate to institute an Area Command. □ 4. Describe when it is appropriate to institute a Multiagency Coordination System. □ 5. Describe the benefits of using a Joint Information System (JIS) for public information. □ 6. Identify the ways in which NIMS affects preparedness. □ 7. Describe how NIMS affects how resources are managed. □ 8. Describe the advantages of common communication and information management systems. □ 9. Explain how NIMS influences technology and technology systems. □ 10. Describe the purpose of the NIMS Integration Center 	4
NIM810	Intro to National Respons Plan	The National Response Plan (NRP), key to the National Incident Management System (NIMS), outlines how this nation will respond to disasters. This course describes NRP's key elements to partner agencies & departments for support in implementation.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> 1. Describe the relationship between NIMS and the NRP. 2. Name the five components of the NRP. 3. Define "Incident of National Significance." 4. Describe, in general terms, the function of the Incident Command Post, Joint Field Office, and Incident Advisory Council. 5. Describe the roles of the Principal Federal Official (PFO), Federal Coordinating Officer (FCO), State Coordinating Officer (SCO), and Senior Federal Law Enforcement Official (SFLEO). 6. Explain the difference between "preparedness," "prevention," "response," "recovery," and "mitigation." 	4
OPI100	Effective Public Involvement	This course is designed to teach district staff new and innovative ways to involve and engage citizens in early, continuous, transparent and effective access to the state's transportation planning and implementation process.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> 1. Greater understanding why public involvement is important. 2. Describe the elements of successful public involvement. 3. Plan, coordinate and conduct effective public involvement efforts. 4. Use innovative techniques to include under-represented interest groups in the transportation planning process. 5. Prepare and accurately record citizen input, provide feedback reflecting concerns on project development. 6. Work with individuals and citizen groups to mediate/resolve conflict and develop projects for the overall public good. 	8

PLN210	Plan Work Zone Trf Control	Covers evaluation & use of traffic control plans (TCP) or typical applications (TA) for different scenarios. Includes edge drop off, mobile operations, crack seal, guard rail replacement, incident management & night work.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> □ 1. Explain the work zone evaluation process.□ □ 2. Describe the difference between NCHRP Report 475 □ and NCHRP Report 476.□ □ 3. Explain the purpose of Q-DAT.□ □ 4. Apply the appropriate TCP or TA for routine work zone □ traffic control operations.□ □ 5. Discuss why a TCP or TA may require an adjustment.□ □ 6. Discuss when an engineer's approval is needed. 	16
PLN216	Geospatial Inventory Database (GRID)	Introduction to GRID training. Course must be completed prior to GRID access being granted.		16
PLN302	Hwy Program Financing-NHI 152072	This course covers the various aspects of federal-aid highway financing unique to the FHWA program. Topics include Highway Trust Fund, legislation, apportionment process, obligation limitation, allocations, deductions, earmarking & transferability.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> □ 1. Describe the flow of Federal financing from authorization to reimbursement.□ □ 2. Explain authorization, appropriation, apportionment, allocation and obligation limitation.□ □ 3. Discuss the impact contract authority and obligation limitation have on the use of Federal funds.□ □ 4. Explain how the Federal budgetary process applies to the Federal-aid Highway Program.□ □ 5. Describe the significance of the Highway Trust Fund to the funding levels for the Federal-aid Highway Program. 	12
PLN304	Intro Urban Trvl Dmd Forecast	An introduction to the traditional four-step modeling process of trip generation, trip distribution, mode choice & trip assignment. Includes presentations on land use inputs, network & zone structures, time of day factoring & reasonableness checking.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Describe the role of travel forecasting within transportation planning.□ □ 2. Explain the principles of the four-step model: trip generation, trip distribution, mode choice, and trip assignment.□ □ 3. Demonstrate how input data is used in each step of the four-step model.□ □ 4. Identify reasonableness checks for model inputs, outputs, and equations.□ □ 5. Interpret the outputs from each step. 	32
PMD100	Proj Mgt Related Communication	Course focuses on project management related communication. It covers available communication methods, how to choose which method to use as well as the frequency with which to communicate with the project team, stakeholders & other TxDOT groups.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Identify the available methods of communication to use while managing a project.□ □ 2. Determine the best method of communication based on your audience.□ □ 3. Know how often and when is the best time to communicate with your office. 	4
PMD101	Understand Proj Mngt at TxDOT	Understanding Project Management at TxDOT focuses on managing transportation projects. It defines TxDOT project management & teaches the basic skills & abilities expected of a TxDOT project manager.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Define a project and the project management process, including each phase of a project. □ 2. Identify the key players throughout the life of a project. □ 3. Recognize the responsibilities of a project manager. □ 4. Distinguish between what a project manager does compared to the other roles on the project team. 	4
PMD102	PMP Certification Boot Camp/Vendor	This course is designed for employees who will soon take the PMP exam. It is a test-prep course and should be taken prior to taking the exam. The course is an intense review of the five process groups, ten knowledge areas & 47 processes.	Upon completion of this course, participants will be able to <ul style="list-style-type: none"> □ 1. List PMBOK 10 knowledge areas □ 2. Complete a PMP application, if needed □ 3. Understand PMI testing methodology □ 4. Complete practice exam simulations □ 5. Plan a schedule for final test preparation □ 6. Understand the mathematical, estimating, schedule compression analysis, and other difficult parts of the PMP certification exam. 	35

PMD103	Introduction to Primavera P6	This course is an introduction Primavera P6 project scheduling software. This course will teach how to use the software, best practices and use of software to TxDOT policies and procedures.	Upon completion of this course, participants will be able to: 1. Demonstrate the proper method to set user settings using Oracle Primavera P6 software. 2. Demonstrate the process of P6 schedule creation using a template or a blank schedule using Oracle Primavera P6 client. 3. Demonstrate defining, assigning, and updating a Work Breakdown Structure and schedule Activity elements of a schedule. 4. Describe the process of using TxDOT low and medium rigor templates in creating project schedules in Primavera. 5. Understand the process of Progressing the Schedule Using the Manual Method. 6. Prepare and review project reports to monitor project progress. 7. Identify the process and location of getting help when needed.	16
PMD120	Project Scope Management	This interactive class will use case studies and exercises to delve into how to define project scope, collect project requirements, verify scope, and control scope throughout the project lifecycle.	Upon completion of this course the participant will be able to: 1. Discuss the use and value of scope management 2. List the essential requirements to develop a project scope 3. Tailor and apply a Scope Definition Document for each phase of the project lifecycle 4. Manage changes to project scope and recognize the impacts of scope change to all areas of project development 5. Communicate the Scope Definition Document and scope changes to stakeholders	6
PMD140	Risk-Based Construction Cost Estimating	This course will introduce the attendee to the Risk-Based Cost Estimating foundational knowledge and practice related to estimating construction costs.	Upon completion of this course the participant will be able to... 1. Understand its use and approach for the Risk-Based Construction Cost Estimating framework and process 2. How one can tailor and apply the various aspects of this framework for each phase of the project life cycle 3. Gain an understanding of what is in the Risk-Based Construction Cost Estimating tool kit 4. Establish a common vocabulary across the teams around Risk-Based Construction Cost Estimating	8
PMD141	Three-Point Estimating (Time, Quantity, and Cost)	The goal of the class is to increase estimating accuracy and consistency. This class will explore time, quantity, and cost estimating utilizing the three-point estimating method through practical application with a series of hands-on exercises.	Upon completion of this course the participant will be able to: 1. Discuss the use and value of 3 Point Estimating 2. List industry estimation best practices 3. Apply the 3 Point Estimating Process using confidence levels 4. Develop a 3 point estimate for project times/durations (resource hours) 5. Develop a 3 point estimate for project quantities 6. Develop a 3 point estimate for project cost estimates	4
PMD171	Monitoring and Communicating Project Progress	This course will explore life cycle project monitoring and communicating project progress and status reporting with project team and stakeholders. Students will discover useful project management tools.	Upon completion of this course the participant will be able to: 1. Understand the concept of Project Monitoring and Reporting 2. Understand the importance of communication and the roles of the project manager, project team, management and stakeholders 3. Set project communication expectations using a defined communication plan 4. Understand the importance of proactive written and verbal project communication 5. Conduct effective status meetings 6. Leverage information gathered during status meetings to create and provide regular progress reports on a timely basis	4

PMD200	Design Build Program Training	Presentation of the fundamental concepts required to implement Design-Build projects for TxDOT. The course will describe the organizations/interfaces expected for this work, explain differences between Design-Bid-Build and Design-Build projects.	Upon completion of this course, participants will be able to: 1. Define the key elements of the partnering process. 2. Describe the foundation and framework for development, procurement and implementation of DB projects by TxDOT. 3. Describe the project organization and the roles and responsibilities of TxDOT and the Design-Builder 4. Demonstrate the importance of a PMP to the success of a DB project 5. Recognize Federal regulations and requirements for Quality Assurance for Design Build projects 6. Identify the differences between DBB and DB projects with respect to ROW Acquisition, Utility Coordination and Adjustment and Environmental Compliance and Permitting 7. Recognize the complexities and risks of accelerated project delivery	16
PMD209	PMP Preparation: Ethics & Professionism	Project management requires a range of knowledge, skills, abilities & competencies and a foundation in ethical conduct. When stakeholder interests conflict, PMs must behave according to a standard of conduct in line with TxDOT values.	Upon completion of this course, participants will be able to: 1. Describe the business and leadership competencies expected of Project Managers. 2. Explain the Project Management Institute's definitions of ethics and its values for ethical conduct. 3. Discuss the content and intent of the TxDOT Ethics Policy. 4. Apply an ethical decision making process to situational questions found on the Project Management Professional certification exam.	8
PMD210	PMP Certification Boot Camp	This course is designed for employees who will soon take the PMP exam. It is a test-prep course and should be taken prior to taking the exam. The course is an intense review of the five process groups, ten knowledge areas & 47 processes.	Upon completion of this course, participants will be able to <input type="checkbox"/> 1. List PMBOK 10 knowledge areas <input type="checkbox"/> 2. Complete a PMP application, if needed <input type="checkbox"/> 3. Understand PMI testing methodology <input type="checkbox"/> 4. Complete practice exam simulations <input type="checkbox"/> 5. Plan a schedule for final test preparation <input type="checkbox"/> 6. Understand the mathematical, estimating, schedule compression analysis, and other difficult parts of the PMP certification exam.	40
PMD500	Project Management Day	Project Management Processes; Project Risk Management; Project Quality Management; Project Stakeholder Management; Project Communication Management; Project Time Management; Project Integration Management; Project HR Management	Share knowledge about Project Management Institute best practices.	5
QLT100	Lean and Six Sigma	The five day course will provide a foundational methodology, as well as the necessary Quality Tools that you can apply and improve TxDOT's future state. This course will also prepare you for the American Society for Quality (ASQ) Yellow Belt exam.	Upon completion of this course, participants will be able to: 1. Apply quality, lean, and six sigma principals in the workplace 2. Pass the American Society for Quality (ASQ) Yellow Belt exam	36

ROW100	Identifying and Managing Utility Conflicts (R15B)	A critical factor that contributes to inefficiencies in the project development & delivery process is the lack of adequate information about the location & other characteristics of utility facilities that might be affected by a transportation project.	Upon completion of this course the participant will be able to: 1. Understand relevant concepts related to the management of utility conflicts within the project development and delivery process. 2. Understand the process to develop and maintain a UCM using data from a sample project. 3. Understand the types of reporting options available when using a database representation of the UCM. 4. Understand utility conflict data model and database capabilities. 5. Understand the process to develop and use customized queries and reports. 6. Identify utility conflicts on sample project design drawings. 7. Use UCMs to manage utility conflicts.	8
ROW201	Adv Relocation Workshop - NHI 141030	Beyond the basics of relocation assistance; focusing on mortgage differential payments, settlement costs, partial acquisitions, comparability, last resort housing, multiple use, tenants & nonresidential moves. Must 1st complete NHI #141029 & #141045.	Upon completion of the course, participants will be able to: <input type="checkbox"/> 1. Explain the principles that govern relocation provisions of the Uniform Relocation and Real Property Acquisition Policies Act of 1970 (Uniform Act) and implementing regulations. <input type="checkbox"/> 2. Describe at least three factors involved in difficult relocation subject areas. <input type="checkbox"/> 3. Describe issues that may arise when developing advisory assistance plans for difficult relocation areas. <input type="checkbox"/> 4. Determine eligibility for certain relocation payments in difficult relocation cases. <input type="checkbox"/> 5. Determine challenging issues when calculating complex nonresidential moving costs. <input type="checkbox"/> 6. Calculate complex nonresidential moving costs.	24
ROW202	Basic Relocation - NHI 141029	Designed for a beginning relocation agent or those interested in basic knowledge of the Uniform Act of 1970. Covers functional areas of the relocation asst program, with emphasis on residential displacements from a Federal or Federally-funded project.	Upon completion of the course, participants will be able to: <input type="checkbox"/> 1. Explain the principles of the Uniform Act and implementing regulations <input type="checkbox"/> 2. Describe the Uniform Act planning requirements <input type="checkbox"/> 3. Describe an agency's advisory services responsibilities <input type="checkbox"/> 4. Describe the elements of comparable replacement housing <input type="checkbox"/> 5. Calculate replacement housing payments for owners and tenants <input type="checkbox"/> 6. Explain replacement housing of last resort <input type="checkbox"/> 7. Compute residential and non-residential moving costs	24
ROW203	On-Line Positioning User Service (OPUS)	Provides geodetic network solutions utilizing baseline processing of project sessions comprised of simultaneous GPS observations followed by a least squares adjustment of all project sessions.	Upon completion of this course, the participant will be able to do: <input type="checkbox"/> 1. Upload data to OPUS Network for processing and adjustment of project. <input type="checkbox"/> 2. Performs geodetic network solutions utilizing baseline processing of project sessions. <input type="checkbox"/> 3. Learn how to create OPUS reports. <input type="checkbox"/> 4. Monitor Project Performance. <input type="checkbox"/> 5. Ability to view and evaluate final network adjustment. <input type="checkbox"/>	12
SFH003	New Employee Safety Orientatio	This course provides an overview of the Mission Zero Safety Initiative at TxDOT. Various resources are detailed to aid employees in their on-going safety.	Upon completion of the course, the participant will be able to: <input type="checkbox"/> 1. Explain how safety is part of the Mission and Goals of the department. <input type="checkbox"/> 2. Describe the department's safety policy. <input type="checkbox"/> 3. Identify the sections of the Occupational Safety Division. <input type="checkbox"/> 4. Identify resources for safety information. <input type="checkbox"/> 5. Identify items in case of emergencies. <input type="checkbox"/> 6. Describe key elements of the department's occupational safety program.	3.5

SFH004	NEO Safety Brief Part 2-Local	New Employee Safety Orientation Part 2. Local Safety officer/coordinator will conduct a safety orientation for approximately two or more hours. Topics of discussion will be TxDOT policies and procedures with emphasis on local safety programs.	Upon completion of this course, participants will be able to: 1. Discuss local safety policies and procedures. <input type="checkbox"/> 2. Explain vehicle safety procedures and best practices. <input type="checkbox"/> 3. Demonstrate proper lifting techniques. <input type="checkbox"/> 4. Locate safety resources in various forms (printed, electronic, on-line). <input type="checkbox"/> 5. Explain the importance of situational awareness when working in field operations.	2
SFH110	Confined Space Safety	Course covers OSHA 1910.146, TxDOT standards, & OSHA 1910.47. Material covers identifying a confined space, recognizing hazards, atmospheric testing, entry permitting, & lockout/tagout.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Identify permit-required confined spaces. <input type="checkbox"/> 2. Recognize and evaluate hazards of confined spaces. <input type="checkbox"/> 3. Describe lockout/tagout steps to control an energy source. <input type="checkbox"/> 4. Calibrate and operate an air monitor. <input type="checkbox"/> 5. Complete Form 1993 and describe the process required for entry into confined spaces. <input type="checkbox"/> 6. Conduct a briefing using the Confined Space Permit and Checklist.	12
SFH205	OSHA 502 CST Trainer Update	OSHA 502 Update for Construction Industry Outreach Trainers is designed for Outreach Training Program trainers who have completed OSHA #500 Trainer Course in Occupational Safety and Standards and Health Standards for the Construction Industry.	Upon completion of this course, participants will be able to: 1. Demonstrate continued professional development in their field; 2. Apply effective adult learning principles and interactive training techniques; 3. Identify, define, and explain construction industry hazards and acceptable corrective measures; 4. Teach the 10 and 30 hour Construction Outreach Training Program classes.	20
SFH210	Hazwoper For Clean Up Operations	Course covers classification, detection, and monitoring of hazardous materials, the use of PPE, and safety practices. Many hands-on exercises and simulations which reference 40CFR311.1, 29CFR1910.120(e), RCRA, & CERCLA.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Recognize and evaluate hazards; <input type="checkbox"/> 2. Apply toxicology and exposure guidelines; <input type="checkbox"/> 3. Use field monitoring instruments and practical exercises; <input type="checkbox"/> 4. Explain the importance of site entry and site control; <input type="checkbox"/> 5. Describe protective clothing and levels of protection; <input type="checkbox"/> 6. Explain air purifying respirators and self-contained breathing apparatus; <input type="checkbox"/> 7. Describe decontamination procedures; and <input type="checkbox"/> 8. Participate in hazardous material incident scenarios and simulations. <input type="checkbox"/>	40
SFH215	Hazwoper Refresher	Annual refresher for employees in hazardous waste clean-up operations. Provides updates on classification, detection & monitoring hazardous materials, the use of PPE, & safety practices.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Identify any changes or amendments to the regulations, describe the training requirements listed in the regulations for those personnel involved in waste site operations. <input type="checkbox"/> 2. Define physical hazards, chemical hazards, and explain terms (flash point, flammable range, boiling point and other physical and chemical characteristics) in determining hazards at waste site operations. <input type="checkbox"/> 3. List the four most common routes of exposure from hazardous materials, list factors that may influence toxicity and describe the use of exposure guidelines in waste site operations. <input type="checkbox"/>	8
SFH301	Asbestos Awareness and Compliance Training	This course covers the hazards associated with asbestos exposure, preventive measures, notification requirements, applicable SDHS rules, policies and procedures for investigation, removal and record retention requirements for facility ACM and O&M plan.	Upon completion of this course the participant will be able to: 1. Know health hazards associated with ACM, 2. Know sources for various federal and state ACM rules and regulations applicable to TxDOT, 3. Know responsibilities for existing facility ACM notification and incident mitigation, 4. Know what constitutes an acceptable asbestos survey, 5. Know when an SSD activity can be utilized, 6. Know what documentation must be submitted and retained, 7. Know how to assess condition of existing ACM.	8

SFH305	OSHA 503 Gen Industry Trainer Update	Designed for Outreach Training Program trainers who have completed course #501 Trainer Course in Occupational Safety and Health Standards for General Industry and who are authorized trainers in the OSHA Outreach Training Program.	Upon completion of this course, participants will be able to: 1. Demonstrate continued professional development in their field; 2. Apply effective adult learning principles and interactive training techniques; 3. Identify, define, and explain general industry hazards and acceptable corrective measures; 4. Teach the 10 and 30 hour General Outreach Training Program classes.	20
SFH397	Electrical Safety- Qual Person	Arc flash and shock hazard for maintenance personnel. Provides training on NFPA 70E Article 130 to personnel who are required to examine, adjust, service, or maintain electrical equipment while it is energized.	Upon completion of this course, participants will be able to: 1. Describe NEPA 70E Standard for Electrical Safety in the Workplace; 2. Identify electrical hazards in the workplace; 3. Identify ways to reduce or eliminate employee exposure to electrical arc flash and electrical shock hazards.	4
SFH401	Focus on Safety IV	Course covers TxDOT specific safety topics and required OSHA topics identifying hazards in the workplace & prevention of unsafe work practices. After successful completion, an OSHA 10-hour construction card is issued.	Upon completion of the course, participants will be able to: 1. Describe the TxDOT Safety Process and utilize the process in daily operations to prevent unsafe work practices. 2. Recognize work zone hazards and the appropriate measures to ensure a safe work environment. 3. Recognize safe work practices near rail operations. 4. Recognize fall hazards and methods to prevent falls. 5. Identify stairway and ladder safety measures. 6. Recognize safe trenching and excavation measures. 7. Discuss safe material handling. 8. Identify safe work practices to prevent caught-in or between and struck-by hazards in construction. 9. Recognize appropriate personal protective equipment (PPE) for specific work situations. 10. Explain the potential for electrocution on a construction site.	8
SFH405	OSHA 510 Construction Industry	OSHA 510 Occupational Safety & Health Standards for the Construction Industry covers scope & application of OSHA construction standards, policies & procedures. As well, construction principles with emphasis on hazardous areas.	Upon completion of this course, participants will be able to: 1. Define general industry terms found in the OSHA Construction Standards. 2. Identify hazards which occur in general industry. 3. Locate and determine appropriate OSHA Construction Standards, policies, and procedures. 4. Describe the use of OSHA Construction Standards and regulations to supplement an ongoing safety and health program.	30
SFH410	Small Quantity Spill Response	Course covers the necessary information for safe responses to small spills of toxic materials in TxDOT laboratories or workplace situations.	Upon completion of the course, participants will be able to: 1. Identify the chemical and physical properties of hazardous materials, and their importance in small spill response. 2. List the routes by which toxicants may enter the body, and what damage can be done once present. 3. Identify personal protective equipment commonly used in a small spill response. 4. Discuss the data necessary to successfully aid in the analysis of the risk and procedures for an initial response to a small spill. 5. Explain the OCC spill "clean up requirements" needed to contain a small spill. 6. Identify the various types of fire extinguishers that may be used in a small spill response. 7. Identify the steps used to minimize the spread of hazardous materials during clean-up. 8. Demonstrate proper donning and doffing of personal protective equipment (gloves) so as to reduce the spread of any hazardous materials.	8

SFH411	Oil Spill Clean-Up	Educates workers assisting with oil spill clean-up on the clean-up process & the potential hazards from oil by-products, dispersants, detergents, degreasers, drowning, heat illness, insects, snakes and other wild species native to the impacted areas.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> 1. Explain what an oil spill is 2. Recognize the characteristics of oil and the risks associated with oil spills 3. Describe the characteristics of a spill response 4. Describe how to identify and control hazards during the response and clean-up phases of an oil spill 5. Explain the role of a worker assisting with an oil spill clean-up. 	4
SFH419	Qualified Fire Extinguisher Inspection	Training for qualified inspectors of fire extinguishers for state buildings & property per standards of the Office of State Fire Marshal of Texas. Covers monthly & yearly inspections & maintenance of portable fire extinguishers per NFPA 10 standards.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> 1. Demonstrate how to perform monthly and yearly inspections per State Fire Marshal Rules; 2. Complete required inspection tags; 3. Use acronyms and explain simple definitions of terms relating to fire extinguisher inspections; 4. Explain the requirements of NFPA 10; 5. Explain the basic requirements of CFR 173. 34,309; 6. Explain the documentation requirements for fire extinguishers; 7. Complete an exam with a minimum score of 70 percent. 	4
SFH431	Maritime Security Awareness	Meets IMO requirements for personnel having specific security duties & other personnel that should have sufficient knowledge & ability to perform assigned duties & be familiar with the responsibilities of the Security Plan regarding Ferry operations.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> 1. Identify acronyms, terms and language related to maritime security 2. Recognize, identify and respond to security threats 3. Describe PTEs and explain how it relates to targets of opportunity within the maritime community 4. Explain the codes, laws, guidelines, and policies as it applies to maritime security 5. Explain the purpose of a security plan 6. Identify the security levels 7. Conduct a Security Assessment 8. Respond to training, drills and exercises in the same manner as a real event 9. Explain the purpose of security administration. 	6
SFH432	Company/Ship Security Officer	The course is designed to exceed the IMO Model Course requirements for those who may be designated to perform the duties and responsibilities of a Company Security Officer or a Ship Security Officer as defined in the ISPS Code.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> 1. Define terms, acronyms, and language respective to Maritime Security 2. Describe the basic motivations of Potential Threat Elements (PTEs) 3. Site appropriate codes, laws, guidelines, and policies applicable to maritime security 4. Recognize, identify, and respond to security threats 5. Identify objectives of a sound security system, equipment and methods of detecting and restricting access to a secure area 6. Explain the purpose of a security plan 7. Respond promptly according to security level 8. Perform security administration 	20
SFH433	OSHA 500 OSH Stds for Construction	OSHA 500-Occupational Safety & Health Standards for the Construction Industry details how the OSHA Act may be implemented on the jobsite. Successful completion of the course authorizes individuals to present 10 & 30 hour OSHA training for construction.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> 1. Demonstrate knowledge of safety and health regulations used in most American workplaces, specifically construction environments; 2. Identify safe work procedures at TxDOT; 3. Reference OSHA regulations in TxDOT documents; 4. Conduct training sessions on OSHA and provide students with wallet cards indicating completion of this training. 	30

SFH500	Forklift Operator	Using National Safety Council Forklift training materials, topics include pre-start safety inspection procedures, design considerations, picking up a load, moving the load, setting down the load, pedestrian safety & hands-on demonstration of skills.	Upon completion of this course, participants will be able to: 1. Explain basic lift truck operation/routine maintenance steps and safety procedures followed when operating a forklift truck; 2. Perform simple to progressively difficult maneuvers/techniques with the forklift truck (start, move forward/backward smoothly, check a load, pick up a load, set the load down on a flat surface, set the load down in a stacked position, etc.).	8
SFH501	Forklift Refresher Training	Three year performance recertification. A qualified forklift instructor reviews operators safe forklift operation and maneuvering skills and documents on OCC Form 2348.	Upon completion of this course, participants will be able to: 1. Demonstrate the operation of a forklift using proper safety methods.	1
SFH502	Forklift Train-the-Trainer	Using National Safety Council Forklift training materials, topics include the presentation of material on pre-inspection, forklift truck design, worksite inspections, picking up a load, delivering a load & safe operation of a forklift.	Upon completion of this course, participants will be able to: 1. Teach initial forklift training to employees who have never driven a forklift; 2. Conduct recertification training for current forklift operators.	8
SFH503	Employee Emergency Response	This course is designed to inform TxDOT personnel on safe operating procedures during incident management and incident response activities on the roadway. This course will outline employee safety measures to help prevent serious incidents and injuries.	Upon completion of this course, participants will be able to: 1. Describe the safe operating procedures regarding planning, communicating. 2. Explain the safe operating steps to protect employees at the scene. 3. Explain the safe operating procedures to protect the traveling motorist. 4. Describe actual scenarios that have occurred in our industry. Discuss appropriate action taken and areas where improvements can be made regarding future incidents/responses.	2
SFH504	Forklift Safety Awareness	Includes the qualification of a forklift operator by completion of EL1022 and successful demonstration of driving & maneuvering proficiency on a forklift.	Upon completion of this course, participants will be able to: 1. Explain the stability triangle of a forklift and the principle of a load and counter-balance; 2. State the key operational features of a standard motorized material handling equipment; and 3. Demonstrate basic driving, steering, braking, maneuvering and forklift tasks involving lift truck controls.	8
SFH505	OSHA 511 for General Industry	A prerequisite for OSHA 501, OSHA 511 Occupational Safety and Health Standards for General Industry covers OSHA standards, policies, and procedures in general industry with emphasis on hazardous areas.	Upon completion of this course, participants will be able to: 1. Define general industry terms found in the OSHA General Industry Standards. 2. Identify hazards which occur in general industry. 3. Locate and determine appropriate OSHA General Industry Standards, policies, and procedures. 4. Describe the use of OSHA General Industry Standards and regulations to supplement an ongoing safety and health program.	30

SFH519	Introduction to Crash Attenuator Vehicle Operations	This training was developed for TXDOT operations utilizing truck mounted attenuators (TMA). This course is based on TXDOT Policies and guidance got these operations and is intended to provide a basic understanding of TMAs and safety for TMA drivers.	Upon completion of this course participants will be able to: <ul style="list-style-type: none"> □ 1. Understand and define the qualification of the attenuator driver.□ □ 2. Understand and define your responsibility as a attenuator driver.□ □ 3.Uderstand and define the role of the attenuator vehicle and be able to define its purpose.□ □ 4. Understand what "roll-ahead" distance is and when you should adjust those distances.□ □ 5. Understand the deference between stationary and mobile TMA operations.□ □ 6. Understand nplacement of the TMA in the work zone. 	4
SFH520	Surveying Safety on the ROW	This course is designed to be taken in conjunction with TRF520 Work Zone Traffic Control. This course fulfills the safety orientation portion required of all persons who will be working on survey crews on the Right of Way (ROW).	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □□ 1. Describe the generalconditions of heat stress, disorders assocaited with heat stress and preventative measures.□ □ 2. Explain the steps to protect oneself from sun exposure while working on the ROW□ □ 3. List all Personal Protective Equipment (PPE) required to work on the ROW and proper use of PPE, knowlledge of OCC requirements on PPe□ □ 4. Describe the steps to avoid snake bite and immediate medical actions required if bitten□ □ 5. Explain the level of awareness required to avoid insect bites, potential reactions to bites and preventative measures□ □ 6. Explain the level of awareness required to detect poison ivy, avoidance of, and first aid requirements to treat exposure□ □ 7. Describe the importance of proper Work Zone Taffic Control during survey opertions, site planning, how to engineer out unnecessary risks □ □ 8. Explain the special provisions and requirements to operate safely when operating on a railroad ROW□ □ 9. Explain the special provisions and requirements to operate safely when operating on utility ROW's. 	2
SFH610	Excavation & Shoring Safety	This course provides an overview of the OSHA Excavation Safety Standards and state legislation in order to familiarize employees with the hazards and safety precautions for excavation and shoring.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Identify soil classifications using the OSHA standards and the factors that affect soil strengths and influence cave-ins.□ □ 2. Describe safe excavation methods to include job planning, shoring, sloping, and shielding.□ □ 3. Identify hazards at excavations.□ □ 4. Discuss OSHA and state laws that affect excavations. 	8
SFH710	Respirator Fit Test & Training	Respirator Fit Test & Training	Upon the end of the course, participants will be able to: <ul style="list-style-type: none"> □ 1. Identify job functions that present a potential/known respiratory hazard;□ □ 2. Explain the different options available for reducing/preventing respiratory hazard exposure to employees;□ □ 3. Demonstrate the proper way to put on/take off the respirator(s) that will be used in their job(s), respirator maintenance such as assembly of cartridges/cleaning/storage and the steps required to determine a proper fit. 	1
SFH810	Fundamentals of Industrial Hygiene	This course develops your understanding of industrial hygiene terminology, principles and practices by examining four key processes in an effective industrial hygiene effort -- anticipation, recognition, evaluation and control.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> 1. Recognize potential and existing chemical, physical, ergonomic and biological hazards 2. Employ general engineering and administrative controls 3. Conduct an industrial hygiene walk-through survey 	32

SFH811	Principles of Occupational Safety and Health	This course, POSH, is a contemporary and comprehensive training program on fundamental occupational safety and health terminology, principles and practices.	Upon completion of this course, participants will be able to: 1. Apply essential terminology, principles and practices of occupational safety and health to the special needs of the company/agency.	32
SFH812	Safety Management Techniques	Based on sound safety, management, quality and performance technology principles, Safety Management Techniques is a course that will help you manage employees and/or projects in your safety and health efforts.		32
SFH813	Safety Training Methods	This course focuses on the knowledge and skills required to assess your training needs, as well as plan, organize, create, and deliver performance-based safety and health training programs.	Upon completion of this course, participants will be able to: 1. Improve the safety performance of your workforce 2. Make educated decisions about the safety and health training needs of your workforce — needs analysis, performance objectives, instructional strategy and methods, content, media, delivery, evaluation and costs.	32
SFH814	Safety Leadership for Crew Leaders	Case studies presented to maintain and improve TxDOT's safety culture through hazard recognition exercises. Discussions held on TxDOT's best safety practices used while driving, working in work zones, PPE usage, injury and vehicle incident prevention.	Upon completion of this course, participants will be able to: 1. Sharpen skills used to identify workplace hazards, mitigate hazards and coach employees to correct those hazards. 2. Recognize proper traffic control, explain items used in Typical Applications (TA's) and traffic control plans (TCP's) 3. Identify and use information needed for leading crews to safety accomplish assign task. 4. Apply principles for effectively coaching, correcting and complimenting safe work habits and behavior 5. Identify the importance for following through the TxDOT's established safe work practices, procedures, and best safety practices. 6. Describe components essential to internal Traffic Control plans	4
SFH844	Hearing Conservation	Occupational Safety Division's course on hearing conservation.		1
SFH849	First Aid/CPR/Blood borne Pathogens	This course is administered by an outside vendor for individuals who are required to have CPR certifications.		8
SFH901	Defensive Driving-ILT	This course is a classroom based instructor led training (ILT) and is intended to provide defensive driving information and techniques to all employees who drive for the department in the course of their official duties.	Upon completion of this course, participants will be able to: 1. Apply defensive driving concepts and techniques when operating a motor vehicle; 2. Discuss the importance of defensive driving; and 3. Safely operate a motor vehicle.	6
SFH903	Smith System Driver Training	A combination of classroom & on-the-road training for positive reinforcement & critiquing of driving skills. It will help improve individual driving records, reduce incident frequency & severity, reduce costs & ultimately help save lives.	Upon completion of this course, participants will be able to: 1. Identify their strengths and weakness as a driver; 2. Eliminate driving deficiencies; and 3. Explain the 5 keys to safe driving.	8

SFH904	Smith System Instructor Course	This course is designed to train prospective candidates who desire to teach the Smith System Driver training program and hinges on the Smith System 5 keys of safe driving techniques.	Upon completion of this course, participants will be able to: 1. Use adult learning principles; 2. Present the 5 keys to safe driving.	40
SFH905	Smith System Instructor Recert	This course is designed to re-train and refresh the skills of instructors who are teaching the Smith System Driver training program.	Upon completion of this course, participants will be able to: 1. Use adult learning principles; 2. Present the 5 keys to safe driving.	16
SFH906	Safety Serv DDC	The National Safety Council Defensive Driving Course provides drivers with the knowledge and safe driving techniques to prevent collisions and violations.	Upon completion, the participant will be able to: 1. Recognize the need for and benefits of defensive driving, identify the personal benefits of using occupant protection systems 2. Conducting an exterior and interior vehicle check before driving 3. Describe the six most common types of driving errors that contribute to collisions 4. Choose the appropriate defensive driving strategy to avoid a collision in any given driving situation	4
SFH920	First Aid/CPR	Basic first aid and CPR training for emergency care to the injured until professional medical attention is available. After successful completion, students receive a 2 - 3 year certification card.	Upon completion of this course, participants will be able to: 1. Describe the steps to take in an emergency. 2. Recognize the signs and symptoms of a heart attack, cardiac arrest, etc. 3. Demonstrate CPR using mouth-to-mouth and mouth-to-mask technique. 4. Demonstrate how to control bleeding and immobilize a serious bone injury.	6
SFH933	Safety Point of Contact Trng	Overview of qualifications, duties & role of a Safety Point of Contact (SPOC). Covers safety leadership, self-inspection forms, Material Safety Data Sheets (MSDS), work zone safety, situational awareness & incident reporting forms.	Upon completion of this course, participants will be able to: 1. Define the role, duties and qualifications of a SPOC; 2. Explain the importance of safety leadership; 3. Complete safety self-inspection forms; 4. Define the MSDS process and be able to explain how to maintain a current MSDS binder; 5. Observe work zones and compare and contrast compliant and non-compliant work zones; 6. Complete incident reporting forms.	4
SSD100	Online Manuals Templates Wksp	This course informs and teaches administrative assistants, subject matter experts, and the lay-person in the formal submission process using specific chapter and Appendix Word templates when changes are required for publications.	Upon completion of this course, participants will be able to: 1. Learn and understand the formal revision process (overview). 2. Apply the use of the Word templates suite for revision of content belonging to their associated D/D/O publications requiring changes.	6
TRF110	Highway Capacity Analysis	Provides instruction on the latest highway capacity analysis techniques and procedures as detailed in the Highway Capacity Manual and Highway Capacity Software.	Upon completion of the course, participants will be able to: 1. Analyze a basic freeway segment. 2. Analyze weaving areas. 3. Determine levels of service or intersections. 4. Analyze the capacity for a two-lane highway. 5. Describe the primary assumptions for analyzing unsignalized intersections. 6. Analyze the capacity on urban and suburban arterials. 7. Use the Highway Capacity Manual and software to analyze interrupted and uninterrupted traffic flow. 8. Analyze ramps and ramp junctions. 9. Explain the terms "capacity", "levels of service" and "flow rate".	24

TRF201	Intro to Traffic Operations	The emphasis of this training is to address the internal, day-to-day operation of the Department, the Department's traffic functions and how traffic engineering principles are incorporated into the operation.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> □ 1. Define the term "traffic operations". □ 2. Describe the general traffic operations project process. □ 3. Describe how TxDOT collects speed data. □ 4. Explain the importance of phasing and timing operations. □ 5. Explain the difference between a signal agreement and a signal warrant. □ 6. Explain how TxDOT uses traffic crash information. □ 7. Describe classification and placement of signs and discuss crashworthiness of signs. □ 8. Explain the uses of TCP, BC, and WZ standard plan sheets. □ 9. List the types of intelligent transportation systems and devices. 	24
TRF203	Risk Management & Tort Liability	Provides an overview of the basic principles of project risk management that are applied to TxDOT projects to avoid traffic incidents and liability. Legal principles, the Texas Tort Claims Act and the lifecycle of a lawsuit are also covered.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Describe the risk management process. □ 2. List methods of reducing the risk of highway tort lawsuits. □ 3. Define negligence and liability. □ 4. Describe key elements of the Texas Tort Claims Act that apply to TxDOT. □ 5. Develop post-crash activities and procedures for filing lawsuits. □ 6. Review examples of tort-related lawsuits. 	24
TRF301	Practical Traffic Signal Design	Introduces basic traffic signal design concepts and the preparation of traffic signal plans and specifications. Focuses on the practical applications of traffic signal operation and design with some related theoretical discussion.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Discuss advantages and disadvantages regarding the operation of signalized intersections. □ 2. Perform signal warrant analyses. □ 3. Prepare phasing plans, using NEMA designations. □ 4. Develop signal timing plans for isolated signalized intersections. □ 5. Locate detectors on approaches in accordance with safe stopping distances. □ 6. Lay out a geometric design in accordance with TMUTCD guidelines and other acceptable design practices. □ 7. Read and explain design details in a typical set of signal plans. □ 8. Identify and explain the responsibilities of engineers, designers and technicians in regards to signal design and operation tort liability. 	24
TRF302	Signal Tech Tng-Beginning Cls	This course covers safe installation, maintenance & troubleshooting techniques of traffic control devices such as traffic controllers & controller cabinets. Course will cover NEMA TS-1 and NEMA TS-2 requirements.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> 1. Cite current safe practices, set-up procedures and troubleshooting methods when working with traffic control devices in the field. 	16
TRF303	Signal Tech Training-Advanced	This course covers safe installation, maintenance & troubleshooting techniques of traffic control devices such as traffic controllers & controller cabinets. Course will cover NEMA TS-1 & NEMA TS-2 requirements.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> 1. Cite current safe practices, set-up procedures and troubleshooting methods when working with traffic control devices in the field. 	16

TRF314	PASSER V Signal Optimization	This course provides practicing traffic engineers and signal technicians with the background information and skills necessary to use the PASSER V signal optimization software.	Upon completion of this course, participants will be able to: <ul style="list-style-type: none"> □ 1. Relate traffic engineering theory to the process used to develop optimum signal settings by coding up a signalized road network, inputting volume and timing parameters, and generating optimized timing plans.□ □ 2. Verify work by using PASSER V to identify potential sources of localized queuing or signal efficiency to ensure quality signal timings are developed to field implementation. 	12
TRF318	Intersection Safety Workshop	Workshop is based on AASHTO Strategic Highway Safety Plan NCHRP Volume 500 Implementation Guide for Intersection Safety. Examples & case studies are provided for the application of proven intersection operation practices and crash reduction measures.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> □ 1. Apply best practices for traffic control devices, lighting, and geometric design with an emphasis on rural intersections and□ □ 2. Discuss examples and case studies on proven intersection operations practices and crash reduction measures. 	8
TRF319	Red-Light Running Handbk Wkshp	Workshop presents an engineering approach to the diagnosis & treatment of potential red-light violation related problems. Focusing on engineering countermeasures prior to consideration of enforcement countermeasures.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> □ 1. Describe the nature of the red-light running problem;□ □ 2. Identify procedures for identifying locations where there is a potential for safety improvement, and□ □ 3. Facilitate the evaluation of alternative countermeasures. 	7
TRF326	Diamond Interchg Signal Timing	This one-day course reviews the evolution of various stages of diamond interchange signal operations and the advantages and disadvantages of each stage.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> □ 1. Identify and discuss diamond interchange issues.□ □ 2. Explain the various diamond interchange operations and strategies□ □ 3. Demonstrate PASSER III-98 features.□ □ 4. Analyze and solve an example problem and local case study using PASSER III-98. 	8
TRF331	Trf Signal Ops-Hwy Rail Inter	The course provides the practicing transportation engineer with the concepts, methodology, and issues involved in the design of signal timings for interconnection of highway-rail grade crossing warning systems and traffic control signals.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> □ 1. Discuss the concepts of railroad signal preemption of traffic signals,□ □ 2. Discuss design issues related to preemption,□ □ 3. Identify safety concerns using various examples,□ □ 4. Understand and use the TxDOT preemption worksheet,□ □ 5. Analyze case studies where improved preemption may prevent an incident and recommend a solution using concepts and methodology presented, and□ □ 6. Understand and use the compilation of information, drawings, standards, and recommended practices presented. 	5
TRF334	Lightening & Surge Protection	This course is designed to give TxDOT engineers and technicians a better understanding of the magnitude of lightning and electrical surges that can cause expensive catastrophic damage to traffic control and ITS equipment.	Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> □ 1. Design better protection systems, coordinating ground and surge protection hardware against lightning strikes and surges; and□ □ 2. Diagnose installed hardware failures in order to prevent further damage from lightning and surges. 	4

TRF450	TxDOT Roadway Illumination & Electrical Installations	Introduces the complete electrical system supplying a roadway illumination project that is to be installed by a contractor. Includes TxDOT specifications, electrical details, construction plans and the National Electrical Code® (NEC) handbook.	Upon completion of the course, participants will be able to: <input type="checkbox"/> 1. Explain the purpose and organization of applicable articles and how those articles relate to TxDOT projects. <input type="checkbox"/> 2. Locate applicable articles in the NEC® handbook. <input type="checkbox"/> 3. Locate information contained in the Standard Specifications for Construction of Highways, Streets & Bridges (600 series), construction project general notes, Departmental Material Specifications (DMS), pre-approved materials, TxDOT Roadway Illumination Details (RID), TxDOT Roadway Illumination Poles (RIP) and electrical details (ED) standard sheets. <input type="checkbox"/> 4. Explain how the requirements of 600-series of the Standard Specifications, construction project's general notes, RID, RIP and ED standard sheets relate to the NEC® handbook.	24
TRF452	Qualified Person in Electric Arc Flash	The course provides training on NFPA 70E Article 130 to personnel who are required to examine, adjust, service, or maintain electrical equipment.	Upon completion of the course, participants will be able to: <input type="checkbox"/> 1. Discuss NFPA 70E, Standard for Electrical Safety in the Workplace <input type="checkbox"/> 2. Identify electrical safety hazards in the workplace <input type="checkbox"/> 3. Reduce or eliminate exposure to electrical arc flash and electrical shock hazards	8
TRF453	TxDOT Elect Requirements Install Traffic Signals	Course examines TxDOT construction project plans, Tx Standard Specifications, NEC and concerns in the areas of traffic signals and electrical installation for those signals. Course will not cover phasing or timing requirements of traffic signal cabinets.	Upon completion of this course, participants will be able to : <input type="checkbox"/> 1. Explain the purpose of applicable articles in the National Electrical Code (NEC) and how they relate to TxDOT projects. <input type="checkbox"/> 2. Locate applicable articles in the NEC for installation of electrical systems for traffic signals. <input type="checkbox"/> 3. Locate information contained in the 600 series of the standard specifications, construction project general notes, departmental material specifications (DMS), pre-qualified materials, and on the applicable TxDOT standard detail sheets applicable to electrical and traffic signal installations. <input type="checkbox"/> 4. Explain how the requirements of the 600 series of the standard specifications, construction project general notes and TxDOT standard sheets relate to the NEC	24
TRF502	Design Work Zone Traffic Control Plans	Provides the basic fundamentals and sequential process for planning and designing work zone traffic control plans.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Explain the purpose of traffic control plans. <input type="checkbox"/> 2. Explain the importance of work zone traffic control and liability issues. <input type="checkbox"/> 3. Explain the logical, sequential process for developing and evaluating traffic control plans. <input type="checkbox"/> 4. Describe the fundamental principles of work zone traffic control. <input type="checkbox"/> 5. Develop a traffic control plan.	24
TRF503	Older Driver Hwy Design Wkshp	For individuals involved in highway design & operations in accommodating older drivers' needs & capabilities. Covers: human factors to consider with older drivers & recommendations & guidelines (geometric, operations, signing and pavements markings).		6
TRF510	Install & Maint of Pave Mark	This course has been designed to provide training in the technology, application, and maintenance of pavement markings. Pavement markings guide the movement of traffic and enhance traffic flow driving comfort, and traffic safety.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Explain retro-reflection and driver visibility needs and general principles of markings. <input type="checkbox"/> 2. Describe installation and maintenance of various marking types including: traffic paints, thermoplastic materials, preformed tapes, raised pavement markers, and delineation devices. <input type="checkbox"/> 3. Set up a correct traffic control operation based upon the Traffic Control Plan (TCP) sheets most commonly used for moving operations on conventional highways, divided highways, and freeway lanes.	4

TRF515	Installation and Maintenance of Signs	Provides current practices in the application, installation and operation of signs used on streets and roads.	<p>Upon completion of this course, participants will be able to:</p> <ul style="list-style-type: none"> 1. Discuss the purpose of roadway signs and delineation. □ 2. Discuss the importance of the Texas Manual on Uniform Traffic Control Devices (TMUTCD). □ 3. Identify informational resources for sign installation. □ 4. Describe preception-reaction time and its relationship to sign placement. □ 5. Describe the responsibilities of roadway jurisdictions. □ 6. Use the Sign Crew Field Book. □ 7. Discuss crashworthiness principles for commonly used sign supports. □ 8. Explain sign installation methods for commonly used sign supports. □ 9. Explain sign retroreflectivity concepts. □ 10. Discuss regulations on retroreflectivity. 	12
TRF516	Sign Crew Workshop	The workshop provides demonstrations and instructions on retroreflectivity inspection procedures and sign support issues. It also includes a nighttime visual inspection of sign reflectivity.	<p>Upon completion of this course, participants will be able to:</p> <ul style="list-style-type: none"> 1. Discuss sign retroreflectivity standards and other important sign support issues and □ 2. Demonstrate new sign products and sheeting. 	12
TRF520	Work Zone Traffic Control	This course reviews basic principles and standards for the design, application, installation, & maintenance of traffic control devices required for construction & maintenance work as set forth in Part VI of the Texas Manual on Uniform Traffic Control.	<p>Upon completion of this course, participants will be able to:</p> <ul style="list-style-type: none"> 1. Explain TxDOT's legal responsibility and their personal responsibility as it pertains to work zones. □ 2. Locate and use Part 1, 5, and 6 of the TMUTCD. □ 3. Explain the difference between a typical application (TA) and traffic control plan (TCP). □ 4. Identify the components of a work zone and the different traffic control devices used in a work zone. □ 5. Plan a work zone for various situations. □ 6. Interpret a TCP, Barricade and Construction (BC), and Work Zone (WZ) sheets. □ 7. Recognize the differences of performing work at night compared to daytime roadwork. □ 8. Explain the purpose, and know the location of the Work Zone Safety & Mobility Guidelines and CWZTCDL. □ 9. Describe the proper location of a flagger for different scenarios. □ 	16
TRF521	Flaggers in Work Zone	This course is designed to ensure employees use proper techniques and equipment while flagging in work zones.	<p>Upon completion of this course, participants will be able to:</p> <ul style="list-style-type: none"> 1. Describe the duties and responsibilities of a flagger. □ 2. Identify potential problems related to flagger safety. □ 3. List proper equipment for flagging. □ 4. Describe the typical flagging positions. □ 5. Explain the importance of coordination between flaggers. □ 6. Demonstrate proper hand signal procedures using the STOP/SLOW paddle and the flag. □ 	4

TRF522	Flagger - Instr Certification	Designed to teach instructors the essential elements and safety standards of proper flagging procedures. Successful completion authorizes TxDOT trainer to train TxDOT employees in flagging procedures that meet or exceed FHWA/OSHA requirements.	Upon completion this course, participants will be able to: <input type="checkbox"/> 1. Demonstrate the proper methods, techniques and hand signals of flagging using stop/slow paddles and the flag according to the Occupational Safety Manual and the Texas Manual on Uniform Traffic Control Devices (MUTCD) <input type="checkbox"/> 2. Demonstrate effective instructional methods and techniques <input type="checkbox"/> 3. Demonstrate the ability to answer questions correctly related to the subject content <input type="checkbox"/> 4. Describe the duties and responsibilities of a flagger <input type="checkbox"/> 5. Relate potential problems associated with flagging safety <input type="checkbox"/> 6. Describe and list the proper equipment for flagging operations <input type="checkbox"/> 7. Demonstrate the five typical flagging positions <input type="checkbox"/> 8. Explain the importance of coordination and communication between flaggers	12
TRF523	Flaggers In Work Zone Local	Course taught by Local Certified Safety Officer. Course is designed to ensure employees use proper techniques and equipment while flagging in work zones.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Describe the duties and responsibilities of a flagger. <input type="checkbox"/> 2. Identify potential problems related to flagger safety. <input type="checkbox"/> 3. List proper equipment for flagging. <input type="checkbox"/> 4. Describe the typical flagging positions. <input type="checkbox"/> 5. Explain the importance of coordination between flaggers. <input type="checkbox"/> 6. Demonstrate proper hand signal procedures using the STOP/SLOW paddle and the flag. <input type="checkbox"/>	2
TRF525	Work Zone Trf Ctrl Refresh	Course reviews basic and updated work zone traffic control information. It addresses areas of concern while working in and around a work zone. This course is mandatory every four (4) years.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Apply the TMUTCD principles and TxDOT standards when setting up a work zone. <input type="checkbox"/> 2. Use the appropriate TCP or TA for a specific TxDOT operation. <input type="checkbox"/> 3. Plan the location of traffic control devices. <input type="checkbox"/> 4. Describe safe practices at a construction/maintenance site. <input type="checkbox"/> 5. Explain the proper set up and take down of a mobile traffic control operation. <input type="checkbox"/>	8
TRF603	RF Safety Awareness Refresher	Emphasis of the seminar is possible health effects from overexposure to RF, hazard recognition, hazard avoidance, and hazard abatement techniques in connection with working at an RF site.		8
TRF701	Roadside Safety Design (NHI-380032A)	Overview of the AASHTO Roadside Design Guide; includes applying the clear zone concept, recognizing unsafe roadside design elements & making appropriate changes, identifying need for a traffic barrier & applying other highway hardware core competencies.	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Apply the clear zone concept to all classes of roadway. <input type="checkbox"/> 2. Warrant roadside and median barriers. <input type="checkbox"/> 3. Design roadside barriers. <input type="checkbox"/> 4. Select the most appropriate end treatment. <input type="checkbox"/> 5. Select the most appropriate safety hardware. <input type="checkbox"/> 6. Locate safety hardware correctly. <input type="checkbox"/> 7. Describe the elements of economic analysis.	24

TRF702	Design, Construction and Maintenance of Highway Safety Appurtenances and Features - NHI #380034A	Covers the design, construction & maintenance of highway safety appurtenances & features. Includes break-away sign supports, breakaway utility poles, traffic barriers, impact attenuators, traversable terrain & hardware features such as drainage inlets.	Upon completion of this course, participants will be able to: 1. Identify advantages and disadvantages of different types of longitudinal barriers and crash cushions. 2. Identify NCHRP 350 tested safety appurtenances. 3. Identify application of highway safety appurtenances; why, when and where they should be used, and what is necessary to ensure their function. 4. Design the placement of, and determine the need for, longitudinal barriers. 5. Use required installation, construction, and maintenance procedures for proprietary longitudinal barriers, terminals, transitions, crash cushions, bridge railings, and sign supports. 6. Recognize substandard or potentially hazardous highway appurtenances and features. 7. Develop alternatives to eliminate, correct, or mitigate unsatisfactory operational characteristics of existing safety devices.	16
TRF705	RR-Hwy Grade Cross Imp Prgm NHI #380005	Covers rail-highway crossings, grade crossing components, program/project development & admin, historical background, data collection, safety & operations, alternate improvements, maintenance & others (i.e., private crossings, operation lifesaver).	Upon completion of this course, participants will be able to: <input type="checkbox"/> 1. Describe Active and Passive Devices used in connection with at-grade crossings. <input type="checkbox"/> 2. Identify techniques and engineering principles used for at-grade crossings. <input type="checkbox"/> 3. Appraise existing at-grade crossings. <input type="checkbox"/> 4. Develop alternate methods to improve railroad-highway grade crossings.	16
TRF824	Left Turn/PED Signal Safety	An overview of safety & operational issues of pedestrians & left-turning vehicles at signalized interactions. Course gives detailed description & demonstration of guidelines & tools developed to address pedestrian safety concerns.	Upon completion of this course, participants will be able to: 1. Apply the guidelines and use the tools from Research Project 0-64es; 2. Determine appropriate left-turn operation modes, with sensitivity to pedestrian safety, vehicular safety, and operational efficiency.	7.5
WFD120	Presentation Skills Workshop	This workshop will teach participants to access their audience and prepare a presentation. Strategies for overcoming nervousness will also be covered.	Upon completion of the course, participants will be able to: <input type="checkbox"/> 1. Prepare to make a presentation. <input type="checkbox"/> 2. Assess the audience and tailor a presentation to the group. <input type="checkbox"/> 3. Employ techniques for overcoming nervousness. <input type="checkbox"/> 4. Demonstrate focus while making a presentation.	3.5