

OREGON DEPARTMENT OF TRANSPORTATION



FIELD STAFF TRAINING CURRICULUM GUIDE

JUNE 2012

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Section 1 – Overview

1.1 PURPOSE

The Curriculum Guide is intended to provide information regarding field staff training and development. Field staff includes inspectors, construction specialists, project coordinators, surveyors, construction support, assistant project managers, contract administration specialists (CAS), quality control compliance specialists (QCCS), quality assurance technicians (QAT), quality assurance coordinators (QAC) and their assistants, and region assurance specialists (RAS). Because each office is unique, the list of positions with identified curriculum was limited to the ten that are the most common to all offices.

At the end of the Guide, you will find information regarding required, recommended, and optional training based on identified core competencies for the ten positions. In addition, ODOT required courses are noted separately along with training courses that would be beneficial for unique situations. For example, the Soils and Foundations Workshop would be beneficial for employees anticipating a project that included a significant amount of earthwork and foundation construction. The Guide also provides direction on where to find more information such as a description, cost, and schedule for each course.

This guide was produced in coordination with the Construction Training Committee which is coordinated through the Construction/Quality Assurance Unit. This guide is a reflection of the commitment to continue to improve project delivery for highway construction projects.

The Curriculum Guide is available electronically at:

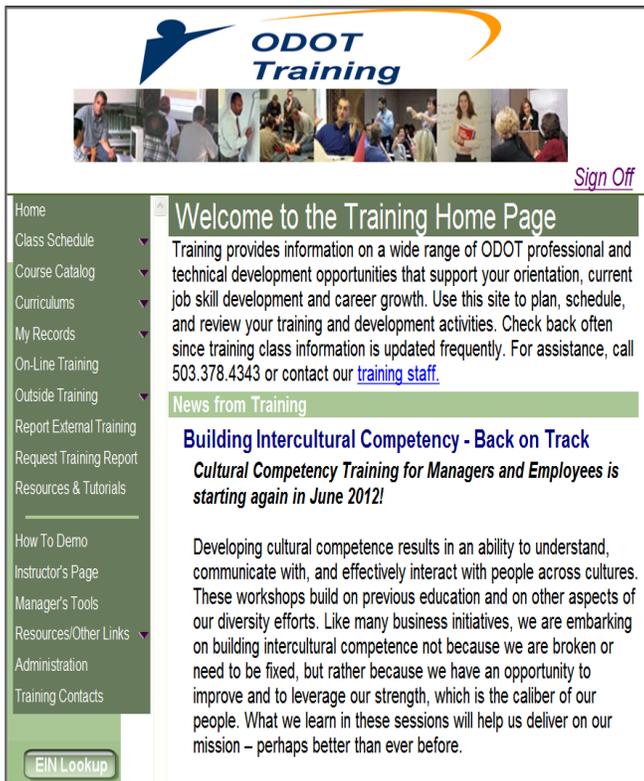
<http://www.oregon.gov/ODOT/HWY/CONSTRUCTION/Pages/publications2.aspx>. It will be reviewed and updated on an as-needed basis.

1.2 TRACKING AND RECORDING

Managers can track and record their employees training through the [Human Resources Training System](#). The Manager's Tool Guide can be found at http://intranet.odot.state.or.us/ODOTHR/Training/Manager_Tools.doc. Below is a listing of some of the services that are available:

- **Training Reports:** A manager can request training reports via the [HR Training "Manager's Page."](#) Some of the standard reports that are available are upcoming training for crews; completed training for a class; transcript for an employee; an employee's development plan; benchmark reports; or a manager can request special reports.
- **Class Enrollment/Cancellation:** A manager may enroll, cancel or add a class to an employee's development plan on the HR Training intranet ["Manager's Page."](#)
- **Transcript:** A manager may view an employee's transcript of completed classes and an employee development plan listing future planned classes.

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ODOT Training

Sign Off

Home
Class Schedule
Course Catalog
Curriculums
My Records
On-Line Training
Outside Training
Report External Training
Request Training Report
Resources & Tutorials
How To Demo
Instructor's Page
Manager's Tools
Resources/Other Links
Administration
Training Contacts

Welcome to the Training Home Page

Training provides information on a wide range of ODOT professional and technical development opportunities that support your orientation, current job skill development and career growth. Use this site to plan, schedule, and review your training and development activities. Check back often since training class information is updated frequently. For assistance, call 503.378.4343 or contact our [training staff](#).

News from Training

Building Intercultural Competency - Back on Track
Cultural Competency Training for Managers and Employees is starting again in June 2012!

Developing cultural competence results in an ability to understand, communicate with, and effectively interact with people across cultures. These workshops build on previous education and on other aspects of our diversity efforts. Like many business initiatives, we are embarking on building intercultural competence not because we are broken or need to be fixed, but rather because we have an opportunity to improve and to leverage our strength, which is the caliber of our people. What we learn in these sessions will help us deliver on our mission – perhaps better than ever before.

EIN Lookup

- **Reporting External Training:** Use the "Report External Training" form located on the HR Training intranet to report training received through a resource outside of ODOT, or to report training that is not listed in ODOT's Training Catalog. This includes training received from an educational institution or company which provides training through seminars, workshops, correspondence courses or using computer based programs. This also includes structured on the job training received from another employee or structured training received through a crew/unit meeting. By reporting the training to HR the participant's transcript will be updated to reflect completion of that training.

For further information and assistance, contact the HR Training Systems Administrator at 503-378-4343.

Section 2 – Determining Training Needs

2.1 COMPETENCIES

All field staff shall apply common knowledge, skills, and abilities, organized into three competency areas – general, project management, and technical. This section describes the knowledge, skills, and abilities for the three competency areas. Knowledge, skills, and abilities should be the focus of a new employee's development within the first six months they are hired. When preparing the employee development plan, management should review the competencies with the employee to determine what areas need development.

2.1.1 General Competencies

The following general competencies apply to all field staff positions with varying levels of responsibility. Each of the competencies should be discussed in the context of the employee's particular job duties.

- **Customer Service:** Works with customers (a customer is any individual who uses or receives the services or products that the work unit produces, including the general public, individuals who work in the agency, other agencies, or organizations outside the government) to assess their needs, provide information or assistance, resolve their problems, or satisfy their expectations; knows about available products and services; is committed to providing quality products and services.
- **Decision Making:** Makes sound, well-informed, and objective decisions; perceives the impact and implications of decisions; commits to action, even in uncertain situations, to accomplish organizational goals; causes change. Is aware of the decision making authority delegated through management.
- **Flexibility:** Is open to change and new information; adapts behavior or work methods in response to new information, changing conditions, or unexpected obstacles; effectively manages ambiguity.
- **Interpersonal Skills:** Maintains effective working relationships with others; may include effectively dealing with individuals who are difficult, hostile, or distressed; relates well to people from varied backgrounds and different situations; is sensitive to cultural diversity, race, gender, disabilities, and other individual differences.
- **Legal and Government:** Knowledge of laws, legal codes, precedents, government regulations, executive orders, agency rules, government organization and functions, and the democratic political process.
- **Oral Communication:** Expresses information (for example, ideas or facts) to individuals or groups effectively, taking into account the audience and nature of the information (for example, technical, sensitive, controversial); makes clear and convincing oral presentations; listens to others, attends to nonverbal cues, and responds appropriately.
- **Organizational Awareness:** Knows the organization's mission and functions, and how its social, political, and technological systems work and operate effectively within them. Organizational awareness includes an understanding of the ODOT programs, policies, procedures, rules, and regulations and project delivery roles and responsibilities. Additional understanding around project delivery may be necessary depending on the position.
- **Problem Solving:** Identifies problems; determines accuracy and relevance of information; uses sound judgment to generate and evaluate alternatives.

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- **Reasoning:** Identifies rules, principles, or relationships that explain facts, data, or other information; analyzes information and makes correct inferences or draws accurate conclusions.
- **Writing:** Recognizes or uses correct English grammar, punctuation, and spelling; communicates information (for example, facts, ideas, or messages) in a concise and organized manner; produces written information, which may include technical material that is appropriate for the intended audience.
- **Teamwork:** Collaborates and cooperates to get the job done. Values the input and know-how of other team members. Asks for help, when needed, and offers help to other team members when needed. Builds trust and respect among fellow team members. Takes actions that demonstrate consideration for the feelings and needs of others. Works with other team members toward a common goal.

2.1.2 Project Management Competencies

Project management competencies can be split into three categories as outlined below. It is understood that each field staff position will have different levels of competency as identified by their position description and duties assigned by the manager.

- **Project Management:** Uses the principles, methods, or tools for developing, scheduling, coordinating, and managing projects and resources, including monitoring and inspecting costs, work, and contractor performance.
- **Planning and Evaluating:** Organizes work, sets priorities, and determines resource requirements; understands short- or long-term goals and strategies to achieve them; coordinates with other organizations or parts of the organization to accomplish goals; monitors progress.
- **Quality Assurance:** Uses the principles, methods, and tools of quality assurance and quality control used to ensure that the construction products fulfill functional requirements and standards.

2.1.3 Field Staff Technical Competencies

The required field staff technical competencies will be unique based on the position; however, the following minimum technical competencies are common to all field staff positions:



- Basic knowledge of algebra, plane geometry and trigonometry typically used in engineering;
- Basic knowledge of engineering practices, policies, and guidelines and construction practices;
- Ability to read and understand construction plans, maps and specifications; and
- Ability to use calculators to perform mathematical and basic engineering.

The employee and manager should refer to the employee's position description to identify the competencies as a means to determine specific training needs.

2.2 NEW EMPLOYEE ORIENTATION PROCESS TO PROJECT CONSTRUCTION

The new employee orientation process to project construction begins before the employee comes to work. Planning ahead for a new employee's arrival will allow managers to spend productive time on the first day and help the employee integrate into their new work environment. A comfortable environment should be created and the new employee should not be overwhelmed with too much information on the first day. Orientation is a continuing process, so there will be plenty of time to give the employee all the necessary information.

The next section will cover the process that managers can use to orient new employees to project construction.

Note: For general new employee orientation contact your HR Consultant or go to the HR web site at <http://intranet.odot.state.or.us/odothr/index.htm>.

2.2.1 Employee Development Plan

A key component of orienting a new employee is to develop an Employee Development Plan (EDP). An EDP is an employee development tool that identifies activities that will help an employee enhance their knowledge, skills, and abilities within the context of organizational objectives. It is a developmental "action" plan to move employees from where they are to where they need to be. Completing an EDP should be a joint effort between the employee and their manager. It should consider the organization's needs, technology changes, expected turnover, and program plans. The EDP should not be a "wish list," but a realistic working document. An EDP template is included at the end of this document. An alternative plan can be accessed at http://intranet.odot.state.or.us/ODOTHR/Forms/Development_Plan.doc.

An EDP *is*:

- A developmental partnership between the employee and manager. EDP preparation involves feedback, clarification, and discussion about developmental needs, goals, and plans. Manager-employee communication is key to the success of the EDP process.
- A vehicle to address the needs of the employee and the needs of the organization. The best EDPs begin with a plan to maximize current job performance. The activities can assist the individual in meeting both personal and organizational goals for success.
- A partnership between the employee and the manager. An employee's developmental needs are identified based on a comparison of skills required by the job and present abilities. The mutual interests and concerns of the individual and the organization must be considered in the EDP process. Employees require manager support to reach developmental goals.
- A broadly defined developmental plan which includes on-the-job assignments, self-development activities, and formal classroom training.
- An active and ongoing process in the organization. Ideally, EDPs should be reviewed, updated, and changed, as needed annually.

An EDP *is not*:

- A performance appraisal. The EDP should not be used as a means to formally assess the employee's performance, but should be used to develop the knowledge, skills and abilities necessary to perform all the

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aspects of their job. In this regard, it does not replace the performance appraisal system to determine promotion, pay, awards and other acknowledgement. Development is the purpose, not appraisal.

- A contract for training. Employees should include all training interests on an EDP. However, training is not necessarily guaranteed because it is on an EDP. Training decisions are made in accordance with policy and budgetary constraints and employee work load.
- A way to clarify or revise a position description. If a position description does not accurately describe the duties performed, this is a matter for the manager and HR to resolve. An EDP cannot solve this problem.
- A panacea for all manager-employee relations problems. The EDP is only one part of the comprehensive efforts of an organization to enhance job satisfaction and cooperative work relationships.

2.2.2 The Hiring Manager

The hiring manager should orient the new employee on project construction from a region perspective. The authority of the employee and the reporting structure should be made clear to the employee. The hiring manager should complete the hiring manager intake checklist and finalize the new employee's EDP.

Section 3 – Curriculum

3.1 TYPES OF TRAINING AND PROVIDERS

There are nine categories of training listed in this curriculum – inspection, design, computer aided drafting, surveying, materials testing, contract administration, work environment, computer, and safety. Each course listing indicates if it is required, recommended or optional and identifies the provider. In some cases, courses may be offered infrequently, so alternate offerings are listed as interim options until the required or recommended course is scheduled. The NHI web-based training listed is provided on demand, free of charge and varies in length from one to 11 hours.

This guide outlines the most relevant courses based on the general role of Field Staff. New employees often possess extensive experience and/or training in any given subject area. Unless a course is required by agency policy or other regulation, or needed for agency consistency, employee enrollment in recommended or optional courses is at the manager's discretion and should be determined according to the individual employee needs and specific role assignment.

Legend	
+	Required
■	Recommended
○	Optional
△	Department Required
△	Job Specific

- Required (+) courses are those that prepare the employee for the minimum qualifications of their position, and/or are mandated by agency policy or other regulation.
- Recommended courses (■) are those which are most closely relevant to the employee's job requirements.
- Optional courses (○) are those which add to the employee's skill set and effectiveness, but are not absolutely necessary for job performance.
- Department required courses (△) are those that prepare the employee for the minimum qualifications of their position and are mandated by department policy.
- Job Specific courses (△) are those which are relevant to the employee's specific job requirements.

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Legend	
+	Required
■	Recommended
○	Optional
△	Department Required
⬆	Job Specific

Jr. Inspector	Sr. Inspector	Project Coordinator	Assistant PM	CAS	OCCS	OAT	Assistant OAC	OAC	RAS
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Inspection

Course Code	Course Name	Provider	Legend												
			Jr. Inspector	Sr. Inspector	Project Coordinator	Assistant PM	CAS	OCCS	OAT	Assistant OAC	OAC	RAS			
EG005550	General Construction Inspector	ODOT	+	+	+	+	+	■	■	■	■				
EGN01760	Certified Drilled Shaft Inspection	ODOT	⬆	⬆	⬆	⬆	⬆	⬆							
EG005679	Environmental and Erosion Control Inspector (CECI)	ODOT	⬆	⬆	⬆	⬆	⬆	⬆							
EG001141	Bridge Construction Inspection Certification	ODOT	⬆	⬆	⬆	⬆	⬆	⬆							
EG001170	Certified Traffic Signal Inspector	ODOT	⬆	⬆	⬆	⬆	⬆	⬆							
EG005577	Certified Traffic Control Technician / Supervisor Note: Includes flagger certification.	ODOT	⬆	⬆	⬆	⬆	⬆	⬆							
EG005578	Certified Traffic Control Technician / Supervisor:Recert	ODOT	⬆	⬆	⬆	⬆	⬆	⬆							
EG001723	Certified HMAC Inspection	ODOT	⬆	⬆	⬆	⬆	⬆	⬆							
EGN1598	Soils and Foundations Workshop	ODOT	⬆	⬆	⬆	⬆	⬆	⬆							
NHI 134072	Math Module (web-based)	NHI	■	■	■	■	■	■							
NHI 134071	Improving the Daily Diary (web-based)	NHI	■	■	■	■	■	■							
NHI 131117	Basic Materials for Highway and Structure Construction and Maintenance. (web-based)	NHI	■	■	■	■	■	■							
NHI 132069A	Pile Driving Inspectors Tutorial	NHI	⬆	⬆	⬆	⬆	⬆	⬆							
NHI 134105	Pipe Installation, Inspection, and Quality	NHI	⬆	⬆	⬆	⬆	⬆	⬆							
	Earthwork Inspection (to be developed)	ODOT	■	■	■	■	■	■							
	Experienced Inspector Workshop (to be developed)	ODOT	■	■	■	■	■	■							

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Legend	
+	Required
■	Recommended
○	Optional
△	Department Required
⬆	Job Specific

Jr. Inspector	Sr. Inspector	Project Coordinator	Assistant PM	CAS	OCCS	OAT	Assistant OAC	OAC	RAS
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Design

Course Code	Course Name	Provider	Legend												
EG001246	AASHTO Roadside Design Guide	ODOT	○	■	■	■	■	■							
EGN01153	Value Engineering Workshop	ODOT	⬆	⬆	⬆	⬆	⬆	⬆							
EGCD3000	Engineering Geometric Design Series (CD-Based)														
CD	- Lesson 1 Plans, Profiles and Cross Sections	ODOT	■	■	■	■	■	■	■	■	■	■	■		
CD	- Lesson 2 Understanding cross sections	ODOT	■	■	■	■	■	■	■	■	■	■	■		
CD	- Lesson 3 Understanding Typical Sections	ODOT	■	■	■	■	■	■	■	■	■	■	■		
CD	- Lesson 9 Understanding Stations and Stationing	ODOT	■	■	■	■	■	■	■	■	■	■	■		
CD	- Lesson 10 Station equations along a single centerline	ODOT	■	■	■	■	■	■	■	■	■	■	■		
CD	- Lesson 11 Station equations along Multiple centerlines	ODOT	■	■	■	■	■	■	■	■	■	■	■		
NHI 134108	Plan Reading Series (web-based)	NHI	○	○	○	○	○	○	○	○	○	○	○		

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Legend	
+	Required
■	Recommended
○	Optional
△	Department Required
△	Job Specific

Jr. Inspector	Sr. Inspector	Project Coordinator	Assistant PM	CAS	OCCS	OAT	Assistant OAC	OAC	RAS
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Computer Aided Drafting

Course Code	Course Name	Provider	Legend									
			△	△	△	△	△	△	△	△		
EG001740	MicroStation Level 1	ODOT	△	△	△	△	△	△				
EG001741	MicroStation Level 2	ODOT	△	△	△	△	△	△				
EG001742	Microstation Level 3	ODOT	△	△	△	△	△	△				
EG001745	InRoads, Level 1	ODOT	△	△	△	△	△	△				
EG001746	InRoads, Level 2	ODOT	△	△	△	△	△	△				

Surveying

EG001155	Basic Surveying Theory	ODOT	△	△	△	△	△	△				
NHI 134106	Basic Construction Surveying (web-based)	NHI	○	○	○	○	○	○				
TBD	Surveying for Inspectors (under development)	ODOT	■	■	■	■	△	■				

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Legend		Jr. Inspector	Sr. Inspector	Project Coordinator	Assistant PM	CAS	OCCS	OAT	Assistant OAC	OAC	RAS
+	Required										
■	Recommended										
○	Optional										
△	Department Required										
⬆	Job Specific										

Materials Testing

Course Code	Course Name	Provider	Legend									
EG001554	CDT - Certified Density Technician	APAO						+	+	+	+	
EG001556	CEBT - Certified Embankment and Base Technician	APAO						+	+	+	+	
EG001552	CAGT - Certified Aggregate Technician	APAO						+	+	+	+	
EG001549	CAT I - Certified Asphalt Technician, Level 1	APAO						+	+	+	+	
EG001550	CAT II - Certified Asphalt Technician, Level II	APAO						+	⬆	+	+	
EG001725	OCT, Quality Control Technician	OCAPA						+	+	+	+	
EG001726	CCT, Concrete Control Technician	OCAPA						+	⬆	+	+	
QA Unit	Radiation Safety (contact Quality Assurance Unit)	ODOT						+	+	+	+	
EG001551	CMDT - Certified Mix Design Technician	APAO						■	■	■	■	
	HMA Production Workshop	APAO						■	■	■	■	
EG001593	Materials Testing for Inspectors	ODOT	■	■	■	■	■	■				
	HMA Construction Workshop	APAO/ODOT	■	■	■	■	○	■				

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Legend	
+	Required
■	Recommended
○	Optional
△	Department Required
△	Job Specific

Jr. Inspector	Sr. Inspector	Project Coordinator	Assistant PM	CAS	OCCS	OAT	Assistant OAC	OAC	RAS
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Contract Administration

Course Code	Course Name	Provider	Legend									
			△	△	△	■	+	△				
EG001762	Contract Payment System (contact Contract Administration Unit)	ODOT	△	△	△	■	+	△				
NHI 134049	Use of Critical Path Method (CPM) for Estimate, Scheduling & Completion	NHI	△	■	■	■	△	△				
CAU	STATSPEC (contact Contract Administration Unit)	ODOT	○	■	■	■	+	+	■	+	+	+
EG005630	Construction Project Management Training – Delivered Intermittently	ODOT	△	△	■	■	△	△				
	Semi Final / Test Summary Training (under development)	ODOT	■	■	■	■	■	■				

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Legend		Jr. Inspector	Sr. Inspector	Project Coordinator	Assistant PM	CAS	OCCS	OAT	Assistant OAC	OAC	RAS
+	Required										
■	Recommended										
○	Optional										
△	Department Required										
△	Job Specific										

Work Environment

Course Code	Course Name	Provider	Legend										
WEWB1098	New Employee Orientation – Mandatory (web based)	ODOT	△	△	△	△	△	△	△	△	△	△	△
WE001098	New Employee Orientation – Mandatory (live instructor)	ODOT	△	△	△	△	△	△	△	△	△	△	△
WE001085	Ethical Decision Making - Mandatory	ODOT	△	△	△	△	△	△	△	△	△	△	△
PR001079	News Media Workshop	ODOT	△	△	△	■	△	△					
WE011004	Conflict and Collaboration	ODOT	■	■	■	■	■	■	■	■	■	■	■
PR009566	People Skills: Understanding Behavior Styles	ODOT	■	■	■	■	■	■	■	■	■	■	■
WEWB1053	Code of Conduct	ODOT	■	■	■	■	■	■	■	■	■	■	■
WE011025	Respectful Workplace	ODOT	■	■	■	■	■	■	■	■	■	■	■
PR009580	Building Intercultural Competence for Employees – Module 1	ODOT	■	■	■	■	■	■	■	■	■	■	■
PR009581	Building Intercultural Competence for Employees – Module 2	ODOT	■	■	■	■	■	■	■	■	■	■	■
WEWB11070	Security Awareness – Intro (online)	ODOT	△	△	△	△	△	△	△	△	△	△	△

Computer (On-line)

Course Code	Course Name	Provider	Legend										
CP004559	Microsoft Word	ODOT	■	■	■	■	■	■	■	■	■	■	■
CP004560	Microsoft Excel	ODOT	■	■	■	■	■	■	■	■	■	■	■
CP004561	MS Access	ODOT	△	△	△	△	△	△	△	△	△	△	△
CP004562	Microsoft PowerPoint	ODOT	△	△	△	△	△	△	△	△	△	△	△
CP004565	Microsoft Outlook	ODOT	■	■	■	■	■	■	■	■	■	■	■

Safety: Some safety courses are mandated according to one's duties and workplace. See the ODOT Safety Matrix at <http://intranet.odot.state.or.us/employeesafety/> for information.

Many other courses are offered through a variety of sources which may be of benefit or interest to employees. For the most current information about additional course, please visit the following web sites:

- **ODOT Training**
http://s-salemrev-69/stc/student/psciis.dll?linkid=614456&mainmenu=STUDENT&top_frame=1
- **Department of Administrative Services (DAS) Training**
<http://www.das.state.or.us/DAS/HR/training.shtml>
- **State Procurement Office (SPO) Training**
<http://www.oregon.gov/DAS/SSD/SPO/training-menu.shtml>
- **Oregon OSHA Training**
<http://www.orosha.org/education.html>
- **National Highway Institute Web Based Training**
http://www.nhi.fhwa.dot.gov/training/list_catalog.aspx?cat=&key=&num=&loc=&sta=%&typ=3&ava=1&str=&end=&tit=&lev=&drl=
- **Asphalt Pavement Association of Oregon (APAO)**
<http://www.apao.org/overviewed.html>

Employee Development Plan

Employee Development Plan For: _____
Plan Period: _____

GOAL #1:

Area of Development: _____

DEVELOPMENT STRATEGY	DESCRIPTION <i>(List course, identify mentor, describe opportunity etc.)</i>	TIMEFRAME

GOAL #2:

Area of Development: _____

DEVELOPMENT STRATEGY	DESCRIPTION <i>(List course, identify mentor, describe opportunity etc.)</i>	TIMEFRAME

GOAL #3:

Area of Development: _____

DEVELOPMENT STRATEGY	DESCRIPTION <i>(List course, identify mentor, describe opportunity etc.)</i>	TIMEFRAME

Employee Signature _____ Date _____
Supervisor Signature _____ Date _____