Army Civilian Training, Education, and Development System (ACTEDS)

Update for

Career Program 18 Engineers and Scientists (Resources and Construction)
July 2008

CP 18 - ACTEDS Plan Update

- Began with Master Intern Training Plan
  - Implemented by FCR Memo 14 Jan 2008
- Continued with…
  - Section I – Introduction
  - Section II – ESRC Career Program Overview
  - Section III – Career Program Management Responsibilities
- See http://ulc.usace.army.mil

Cp-18 ACTEDS Update

- Currents….
  - Section IV – ESRC Career Training, Education and Development
  - Functional/Community of Practice Responsibility
  - Professional Development Maps (PDMs)
  - National Technical Competency Study
  - New CP-18 Handbook
  - Beginning with Career Series 810 and 830

Professional Development Map

The PDM is new Army Standard Roadmap for Career Programs

Features:

-Standard Army inputs for CES, NSPS, etc.

- Career Opportunities
- Common Core and Functional Competency Requirements
- Training Requirements/Opportunities
- CES Information
- Other Linked resources

*All arranged by Pay Band

Career Map

Civilian Career Map	This career map provides a standardized framework and career enhancing information to individuals and managers for the professional development of the Army Civilian Corps. The map serves as the professional blueprint for your successful civil service career while providing information and guidance for advancement.

Career Program: 18 Engineers and Scientists (Resources and Construction)

Career Field:

Career Series: 0830 - Mechanical Engineering

Your career map is based on your current series. Underlined items may be clicked to view additional information, course material or related tasks.

					What's HOT!
Qualifying for a Career	A Guide to NSPS	NSPS Contributing Factors	NSPS Core Competencies	NSPS Performance Indicators	
Series Description This series covers positions managing,	**Intern**	**Pay Band I**	**Pay Band II**	**Pay Band III**	**SES**

Career Map

Career Opportunities	Interns will receive an orientation and experience several rotations through Mechanical Engineering disciplines including such fields as: General Engineering Engineering Design Construction Management Civil Works Planning Environmntal Engineering Waterways Operations Research & Development Public Works (Design, Construction and Environment) Career Progression Ladders (for all pay bands)	Mechanical Engineering Field - Civil Works and/or Military Programs Designer Planner Quality Assurance Program Manager Operations Safety Project Engineer	Mechanical Engineering Field - Civil Works and/or Military Programs Designer Planner Quality Assurance Program Manager Manager AE/Construction Contract Manager Area Engineer Resident Engineer	Design Branch Chief Engineering Division Chief Area Engineer Resident Engineer	
Functional Competencies	Core Competencies Functional competencies include generation and/or application of theories, principles, practical concepts, and processes including: The Science of Mechanical Engineering The art, techniques, and engineering design standards for civil engineering projects Physical science disciplines Critical inquiry and scientific methodology	Core Competencies HVAC Design and Testing HVAC Controls Heating/Cooling Distribution Systems Refrigeration Systems UMCS Design and Testing Central Chiller Plants Central Heating Plants Energy Systems Evaluation & Analysis Plumbing Industrial Ventilation Hospitals	Core Competencies HVAC Design and Testing HVAC Controls Heating/Cooling Distribution Systems Refrigeration Systems UMCS Design and Testing Central Chiller Plants Central Heating Plants Energy Systems Evaluation & Analysis Plumbing Industrial Ventilation Hospitals Fuel Storage Facilities and Equipment	Core Competencies HVAC Design and Testing HVAC Controls Heating/Cooling Distribution Systems Refrigeration Systems UMCS Design and Testing Central Chiller Plants Central Heating Plants Energy Systems Evaluation & Analysis Plumbing Industrial Ventilation Hospitals	

Central chiller plants	Knowledge, capabilities, and practices associated with the design for central chiller plants including selection of refrigerant, cooling towers, auxiliary equipment, water treatment, and refrigerant leak detection systems. The primary purpose of these plants is to generate chilled water for space cooling in the most economical, operationally efficient, and environmentally acceptable manner possible for distribution to groups of buildings.
Central heating plants	Knowledge, capabilities, and practices associated with the design for steam heating plants and high temperature water plants including selection of fuel, solid and liquid fuel handling and storage, combustion equipment, auxiliary equipment, water treatment, and pollution abatement systems. The primary purpose of these plants is to generate steam and high temperature water for space heat and process steam in the most economical, operationally efficient, and environmentally acceptable manner possible for distribution to groups of buildings.
Elevators	Knowledge, capabilities, and practices associated with the design, installation, inspection and testing of elevators and similar equipment for compliance with the International Building Code and other applicable codes, standards and regulations pertaining to mechanical systems, and fire safety. Work involves the inspecting of elevators, escalators and other mechanical or land lifts in order to determine their conformity with approved plans. Including interpretation of law, discussion of difficult problems, and reviewing of work reports and reports of violations. Assists in the resolution of complex technical problems, assisting contractors and the customer with a variety of issues and questions, and reviewing field inspection reports and related documents.
Energy systems evaluation and analysis	Knowledge, capabilities, and practices associated with the guidance for the standard design of active solar energy systems to preheat domestic and service water, passive solar energy systems, heat recovery sytems and renewable energy systems. For the case of renewable energy, Title 10 of the U.S. Code (10 USC) requires that an economic feasibility analysis be performed for all new military construction to determine whether the use of renewable forms of energy will result in a net monetary savings to the government. The methodologies and parameters required for federal energy project feasibility studies are mandated by federal law (10 CFR 436). Installation of a renewable energy system is required if it is deemed economically feasible.
Plumbing	Knowledge, capabilities, and practices associated with cold water (direct & indirect systems), hot water (direct, indirect & non-storage), above ground discharge (single stack systems) and earth continuity systems.Types of appliances - baths, wash hand basins, showers, bidets, WC's (inc macerators), sinks, dishwashers washing machines and storage vessels. Current codes of practice for system design, current manufacturers' technical information, current commercially acceptable standards. System layout (inc positioning of appliances), performance requirements of systems, types of components and appliances, compliance with statutory requirements and recommendations, availability of mains services (water supply, drainage provisions & suitability of existing system).
Industrial ventilation	Knowledge, capabilities, and practices associated with Identifying all significant contaminant sources that require ventilation control. Also, determine how the system being designed might affect the performance of any existing processes, industrial ventilation systems or HVAC systems. Select or design exhaust hoods that best suits the work piece or operation. Design exhaust hoods to enclose the work piece or operation. Determine the capture velocity required to control generated contaminants. Reduce potential for cross drafts or turbulence near a given exhaust hood by properly locating and designing the hood with baffles, and also by designing the replacement air system to complement the exhaust system. Determine the exhaust volumetric flow required to maintain the capture velocity. Create a line drawing of the proposed system. Include plan and elevation dimensions, fan location and air cleaning device location. Identify each hood, branch duct and main duct sections. Size ductwork using the balance by design or

Career Map

	Sample Individual Development Plan Intern Rotation Worksheet Sample Rotational Assignment Documentation Supervisors Evaluation Recommended Certification Checklist	Construction Contract Mods #368 General Construction QV #54 Civil Design for Planning #218 Dam Safety #28 Construction Safety #215 Seismic Design Buildings # 27 Welding Design #162 Welding QV #116 Paint Coatings and QA #84 Diesel Generator Basics/Testing #106 Fire Protection Engineering (Basic) #6 Lubrication of Mechanical Equipment #412 Management of Hydro - O&M #376 Mechanical QV #74 National Electical Code #78	Contract Mods #368 General Construction QV #54 Civil Design for Planning #218 Dam Safety #28 Construction Safety #215 Seismic Design Buildings # 27 Welding Design #162 Welding QV #116 Paint Coatings and QA #84 Diesel Generator Basics/Testing #106 Fire Protection Engineering (Basic) #6 Lubrication of Mechanical Equipment #412 Management of Hydro - O&M #376 Mechanical QV #74 National Electical Code #78		
Professional Development Education	Foundation Course Action Officer Development Course	Foundation Course Basic Course Action Officer Development Course	Foundation Course Supervisory Development Course (New Supervisor) Basic Course (Supervisor)	Foundation Course Supervisory Development Course (New	Senior Service College Leadership at the Peak Army and DOD executive courses

Process Objectives

- Build “AS-IS” Professional Development Maps
  - Draw upon existing CP-18 Website
- Link the CP-18 Competency Management System
  - Align Technical Competencies by Pay Band
- Update PDMs as information becomes available
- Plan future integration and update of the CP-18 website with PDMs, CMS, and the ACTEDS Sections.

Operational Business Rules

- CoP Leader will develop functional input for the PDM using their occupational SMEs within their Community, i.e. civil engineers will develop the 810-PDM, with IMCOM Public Works general engineers input.
- The CoP representative to the CP-18 Planning Board will be the technical/functional approver for all PDMs in his/her CoP. The FCR will exercise overall approval authority.
- The USACE Learning Center will manage PDM data including training requirements, and monitor the quality and consistency of the PDM development process.

Challenges/Opportunities

- Community of Practice ownership of the technical PDM requirements
- Army Competency Management System alignment with PDM pay bands
- Consolidating Career Program Information on a single portal (ACTEDS, PDM, MITP, Handbook, etc)
- This is a major undertaking! Teamwork!

The Way Forward!

- Community of Practice engagement and action
- Consolidation and update of web portals
- Prioritize and schedule development of additional PDMs
- Communicate to Command, ACPMs, Supervisors, and career program membership

Questions and Discussion?

Access PDMs on web:

1. www.train.army.mil
2. Click “ACCESS ATIA”
3. Log in with CAC or AKO process
4. Click “PDM/Career Map” tab
5. Select “810” or “830” from Civilian drop-down menu