Design Considerations in Building a Corporate Systems Engineering Training and Development Program

(NDIA 13th Systems Engineering Conference)

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Human Resources
MITRE Corporation
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Dr. Philip N. Trudeau is the Manager of Technical Programs at the MITRE Institute, the corporate education, training, and development group in Human Resources at The MITRE Corporation. Between 1978-1988, Dr. Trudeau worked with four technical divisions at MITRE – environment, energy, advanced transportation, and the Army – as a Technical Staff, a Group Leader, and then a Project Leader. He worked on environment and energy projects for EPA/DOE, hardware and software systems development projects for DOI and NOAA, and communications and information flow projects for the Army. In 1988, he assumed a role as a lead technical development specialist at the MITRE Institute, and concentrated on building curricula in software engineering, advanced operating systems, and advanced tools. Presently, he manages the Technical Program at the MITRE Institute, which includes systems, software and domain engineering; advanced tools; and business applications. Dr. Trudeau holds a BA in chemistry from Boston University, an MS and Ph.D. in biology and systems ecology from University of Massachusetts/Amherst, and an MS in computer science from Virginia Polytechnic Institute (VPI) and State University. Dr. Trudeau has been a member of the IEEE since 1988 in both the Computer Society and the Education Society. He is also a member of the International Council on Systems Engineering (INCOSE) and the American Society of Training and Development (ASTD).
Presentation Purpose

Describe the design approach for enhancing MITRE Corporation’s Systems Engineering (SE) training & development program
Outline

- SE T&D General Approach – All Programs
- Design Approach and Best Practices
- Building & Use of Competency Model & Program Drivers
- Design of Three-Tiered Program - SEworks
- Design & Integration of Course, Group & Project Work
- SEworks - Level 1 & Level 2 Designs
- Integration – Skill Type, Training Approach, & OTJ
MITRE Encompasses Five FFRDCs ~ 7,000 Employees

- SE – Core Competency
  - Two large SE Job Families (Multi-Disc SEs; Info SEs)
  - Four related SE Job Families
<table>
<thead>
<tr>
<th>Program Name</th>
<th>Program Size (Students/ Year)</th>
<th>Hours/Yr or Hours/ Program</th>
<th>Educational Focus</th>
</tr>
</thead>
</table>
| JHU MS in SE          | 20                            | 400                        | • Graduate Ed., All SE Topics  
• Well rounded & deep treatment  
• Considerable out of class work |
| **SEworks**           | 200-300                       | 100                        | • Focus on content needed at different career levels  
• Less theoretical; more practical  
• Not as deep as MS in SE; fewer hours & less homework |
| SE Courses in MITRE Institute Catalogs | 1,200                       | 14                         | • Deepest training  
• Diverse topics – methods, tools, techniques, and processes  
• Only what students need when they need it |
Identify Corporate Development Needs and Priorities Through Gap Analyses & Goal 4 Activities

Determine Development Solutions:
• SE Courses - Technical - Soft Skills - e-Learning
• On-the-Job T&D Project
• Link to P&D
• Group Work/Networking
• Website & T&D Database
• Certification Options

Create Change Mgmt Plan to Ensure Successful Implementation of Solutions
• Define Metrics of Success

We are here for SEworks2

Continuous improvement of MITRE Institute’s systems engineering program

Fall 2010 +

• Implement Solutions Per Change Management Plan
• Evaluate Results and Make Adjustments as Necessary
SE & MITRE’s Strategic Framework

Goal 4 Objectives

A: Employ systems thinking & data driven analysis to achieve our customers’ outcomes

B: Extend the State-of-the-Practice of Systems Engineering
Best Practices & Technical Training Benchmarking Studies

- Use competency models to drive training & development
- Measurement of success
- Perform needs analyses
- Teach geographically dispersed audiences
- Use multiple delivery methods to address learning styles
- “Instilling common practices” is one of the best outcomes from T&D – it helps to develop corporate culture
- Important T&D programs need both verbal and financial support from senior management
Building SE Competency Model

- Hired a consultant to help
- Data gathering
  - Spiral approach – 10, day-long focus groups
    - All MITRE Centers at two staff grouping levels
    - Re-wrote & re-published model 4-5 times
- Information prioritization & analysis
  - All focus group members prioritized all competencies 1 to n
    - Varied from 25 to 55 competencies; settled on 36
  - Soft skills became more important as increased staff level
- Information organization/compression/editing
  - Removing intra-competency redundancy hard
  - Removing inter-competency redundancy very hard
  - 4+ months for final editing
- Presently – collecting ESE data for improvements
MITRE’s SE Competency Model

1.0 Enterprise Perspectives
  1.1 Comprehensive Viewpoints
  1.2 Innovative Approaches
  1.3 Foster Stakeholder Relationships

5.0 Collaboration and Individual Characteristics
  5.1 Building Trust
  5.2 Building a Successful Team
  5.3 Communicating with Impact
  5.4 Persuasiveness and Influence
  5.5 Facilitating, Managing, and Championing Change
  5.6 High Quality Standards
  5.7 Results Orientation
  5.8 Adaptability
  5.9 Integrity

4.0 Systems Engineering Technical Specialties
  4.1 Cost/Benefit Analysis
  4.2 Human Centered Engineering
  4.3 Modeling and Simulation
  4.4 Security Engineering
  4.5 Reliability, Maintainability, and Availability (RMA)
  4.6 Safety Engineering
  4.7 Software and Information Engineering
  4.8 Communications/Networking Engineering
  4.9 Collaborating with Technical Specialties

3.0 Systems Engineering Planning and Management
  3.1 Transformational Planning
  3.2 Government Acquisition Support
  3.3 Contractor Evaluation
  3.4 Risk Management
  3.5 Configuration Management
  3.6 Integrated Logistics Support
  3.7 QA and Measurement
  3.8 Continuous Process Improvement

2.0 Systems Engineering Life Cycle
  2.1 Concept Definition
  2.2 Requirements Engineering
  2.3 Architecture
  2.4 Systems Design and Development
  2.5 Systems Integration
  2.6 Test and Evaluation
  2.7 Systems Implementation, O&M, and Transition
Uses of SE Competency Model

- Corporate baseline assessments
- Curriculum development
- Assessment of incoming students to customize their program with an on-the-job project
- Additional data collection now on – ESE Update
- May be used for other HR functions – promotions & hiring
What our data told us:
- Close the soft skills gaps

What corporate agenda told us:
- Corporate Goal: “Provide a workforce that can skillfully apply MITRE-Government brand of systems engineering”
- Need to develop baseline knowledge and capability in SE at various career levels.

Other widespread feedback or considerations
- Core elements need to be included at all staff levels
- Build MITRE consistency of SE practice through the training materials, but demonstrate flexibility in examples to allow tailoring on the job
Program Constraints

◆ Cost of program development & delivery

◆ Number of hours staff in training and away from project work

◆ Cost of travel for remote site staff
### Three-Tiered, High Level Design Approach

**Simplest Model**
Each level cover all competencies; Red = Level 1; Green = Level 2; Yellow = Level 3

**Problem with Approach**
Only 2 hours coverage per competency, given total hours constraint

**By Career Level**
Okay, but needed to cover multiple competency levels

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<table>
<thead>
<tr>
<th>Foundational</th>
<th>Intermediate</th>
<th>Expert</th>
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**Final Approach**
1. Cover competencies appropriate for different career levels
2. Cover multiple proficiency levels
3. Repeat some soft skills on multiple levels also
## SEworks - Systems Engineering at MITRE

### Technical Competencies | Non-Technical Competencies | e-Learning & Vertical Integration
---|---|---
### Apply Rigor to SE Lifecycle Activities & Effectively Communicate & Collaborate
**Competency Model–Section 2**
- Concept, Requirements, Architecture, Design & Development, Integration, Test & Evaluation, and System Implementation

**Competency Model–Section 5**
- Teams, Communicating with Impact, Adaptability, and Results Orientation

**Competency Model–Section 4**
- Vertical Integration
- ESE, Risk

### Lead and Manage SE Activities & Build Successful Relationships with Stakeholders
**Competency Model–Section 3**
- Transformational Planning, Acquisition Support, Contractor Evaluation, Risk, Configuration Management, Logistics, QA, and Process Improvement

**Competency Model–Section 5**
- Teams, Trust, Quality Standards, and Persuasiveness & Influence

**Competency Model–Section 4**
- MA, SwEng., Comm\Netwking & Safety
- Vertical Integration
- ESE, Risk

### Leverage SE in the Enterprise Environment & Influence Key Stakeholders to Transform the Enterprise
**Competency Model–Section 1**
- Comprehensive Viewpoints, Innovative Approaches, and Foster Stakeholder Relationships

**Competency Model–Section 5**
- Persuasiveness & Influence and Change Management

**Vertical Integration**
- Problems & Case Studies Set in Context of Life Cycle and Lead & Manage Enterprise Simulation

### All Program Levels Will Include These Components
- Programs will last approximately 8-10 months & Video broadcast
- On-the-Job Project (2-3 competencies)
- Group Work & Networking with Other Center & Site Staff
- Training & Development Database Resources
- INCOSE Certification Option
Technical Course Design

- **MITRE staff internal development approach**

<table>
<thead>
<tr>
<th>Advantages – Internal Instructors</th>
<th>Disadvantages – Internal Instructors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Easier to customize content</td>
<td>1. Difficult to get SMEs when desired</td>
</tr>
<tr>
<td>2. Development cost for quality</td>
<td>2. Platform skills not as good as</td>
</tr>
<tr>
<td>products ~ the same as external</td>
<td>commercial trainers</td>
</tr>
<tr>
<td>3. Delivery costs less expensive in long run</td>
<td>3. Internal SMEs may back out due to internal work/project commitments</td>
</tr>
<tr>
<td></td>
<td>4. Vendor material – road tested, maybe 50 times</td>
</tr>
</tbody>
</table>

- **External vendor/consultant approach – flip table**

- **Solution:** deal with the technical courses on a case by case approach – try to obtain best content & delivery capability within constraints noted above
Non-Technical Course Design

- Theoretically, same as make vs. buy decision as for Technical courses, with one big difference: lack of SMEs with road tested materials.

- **Solution:** work with external vendors/consultants.
e-Learning Course Design

- e-Learning make vs. buy
- Hired new staff member
- First task – tool choice
- Developed e-Learning standards for department
- Delivery platform

**Solution:** developing eight (8) e-Learning courses for Section 4 of Competency Model – Tech Specialties
Group Work & Networking Design

- Self-reflection
- Internalize learning
- Build personal networks in corporation

### Possible Group Work and Networking Approaches

<table>
<thead>
<tr>
<th>Self-Reflection (ex., journaling)</th>
<th>With Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>With Another Individual</td>
<td></td>
</tr>
<tr>
<td>• Buddy System</td>
<td>• Electronic Forum (e.g., Social Networking Community)</td>
</tr>
<tr>
<td>• Rotation Buddy System</td>
<td>• Live and/or Remote Groups (VTC/MeetingPlace)</td>
</tr>
<tr>
<td>• With student’s manager</td>
<td>• Self-monitoring group</td>
</tr>
<tr>
<td>• With student’s mentor</td>
<td>• Mentored Group</td>
</tr>
</tbody>
</table>

With Group:
- Self-monitoring group
- Mentored Group
- Coached Group
Group Work & Networking Design

- Solution chosen – SEworks1
  - Virtual, mentored groups
  - Build personal networks
  - Technology, facilitators and mentors available
  - Audio, content, chat & pictures
  - Requested mentors through senior management

- Sessions every other week at lunch – 1 hr.
  - Technical & Non-technical topics
  - Content not delivered in class, but related delivered
  - Project work
  - Build personal networks
SOCIAL DISTANCE

The concept of social distance refers to the perceived amount of separation or dissimilarity between persons based on their relative group memberships. In trying to achieve collaboration and cooperation, the amount of social distance is a primary contributing factor in final success or failure.

Social distance becomes an important factor when considering two or more groups whose memberships are perceived to be mutually exclusive, meaning that a person cannot belong to both groups simultaneously. This creates a perceived relationship of the groups being diametrically opposed, creating the appearance of an "us/them" relationship. This results in an increased social distance, and decreases the potential for collaboration.

In order to decrease social distance and create collaboration, a shift in perception must occur so that people cease to see each other in oppositional categories and create a different identification. This is extremely difficult to do as people remain situated in an "intergroup" (or inter-team) framework. It therefore becomes important to move from an "intergroup" to an "interpersonal" (identification based on individual attributes) or a "collective" (identification based on group attributes) framework.

Rather than being a purely psychological concept, social distance can be seen in the details of everyday encounters. Examining events like notes/humor, the type of small talk made, how social attributions are made, and the extent to which similarities or differences are made all contribute to our understanding of social distance in context.

In trying to achieve collaboration and cooperation, it is important for those involved in the process to identify the amount of social distance and employ conversational and interactional strategies to increase rapport and decrease social distance.

Also of interest: conversational and interactional strategies.
SE Competency Model Assessment

- **Purpose** – take learning out on the job
  - Increase usefulness and retention
  - Allows students/managers to customize their T&D

- **Student & manager complete assessment against CM**
  - Self-assess: how proficient am I compared to competencies
  - Target proficiency: where do I need to be for my job

- **Assessment system then develops a gap analysis**
  - Focus on high priority & low capability competencies
On-the-Job Project

◆ Purpose – practice what they are learning
  – Increase usefulness and retention
  – Allows students/managers to customize their T&D

◆ Try to avoid adding to their workload
  – Five-month projects
  – Template to help them focus
    ◆ Objectives, description, milestones and confidence of milestone completion

◆ Use T&D database to find resources
  – Screen shot next page
2.2 Requirements Engineering

Systems engineers integrate business/mission and operational needs and transform these needs into system requirements. They analyze, manage, and trace systems requirements, facilitate stakeholder agreement about changes to and management of the systems requirements, and recommend critical performance measures and safety features.

View Key Actions & Behaviors

By Category
By Level

Instructor-Led Courses

E-Learning Courses

Eliciting Requirements
Level(s): Foundational; Intermediate  Type: CBT

Requirements elicitation is the gathering or – "drawing out" – of system requirements. This is done by communicating with users, customers, and any other stakeholders in the development of a system. It is a pivotal knowledge area of business analysis and, as such, the business analyst must be able to elicit requirements... More

Source: SkillSoft
Duration: 3:30:00  Date: 5/15/2007

Books
Papers and Articles
Websites
Two types of measurements & assessments
- Kirkpatrick Levels 1, 2, and 3
- Assessment against competency model (students & group)

Course evaluations – Kirkpatrick Level 1 (L1)
- 17 numerical & 5 open-ended questions

Programmatic evaluation for non-course activities (L1)

Pre- & Post-Tests, Two Tech Crses – Kirkpatrick L2
- Examine course content design & “get ready to learn”

Long-term behavioral assessments – Kirkpatrick L3
- Behavior change – manager assess student after project
  - Looking for 80% improvement
- Corporate benchmarking over time – long term trends
**SEworks Program**

2, Live Events & Broadcast

**Tech Course**
- **MITRE SE Overview**
  - 1 Day
  - Nov 2

**Live Only**

**Tech Course**
- CM Sect 2 Concept Development Phase
  - 3 Days
  - Nov-Dec

**Live Only**

**Non-Tech Course**
- CM Sect 5 Teams & Results
  - 2 days
  - Jan-Feb

**Live & Broadcast**

**Tech Course**
- CM Sect 2 Development Phase
  - 2 days
  - Mar-Apr

**Live Only**

**Tech Course**
- CM Sect 2 Post-Development
  - 3 Days
  - May-Jun

**Non-Tech Course**
- CM Sect 5 Communication & Adaptability

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**Technical Courses**

- TSE300  Overview of SE at MITRE
- TSE301  SE Life Cycle Pre-Development Phase
- TSE302  SE Life Cycle Development Phase
- TSE303  SE Life Cycle Post-Development Phase

**Non-Technical Courses**

- DSE300  SE Successful Teams and Results
- DSE301  SE Effective Communications and Adaptability

**Class size:** Groups of ~25

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**Group Work and Project:**

- **Group Work** – Facilitated & mentored, virtual teams; 1 hour at lunch every 2 weeks; pre-reading & discussions
- **On-the-Job Project Work** – Project determined by Student & Manager – focus high priority competencies
Program

High Performance SE Teams

- **Class size:** Groups of ~25

**Group Work and Project:**
- Group Work – Self-directed, virtual mentored teams; 1 hour at lunch every 2 weeks
- Project Work – “Give Back to Company” – group project on acquisition or individual project for SEG
Integration in Design

◆ Content types integrated
  - Technical and soft skill courses in each program level
  - Technical & non-technical content in opposite classes

◆ Training approaches integrated
  - Live, instructor-led training (& remote broadcasting)
  - e-Learning
  - Readings, group work, and on-the-project work

◆ Type of measurements & assessments
  - Kirkpatrick Levels 1, 2, and 3 included in one or multiple training approaches
Customized Learning: Group Projects (SEworks2)

◆ Important for reflection & networking & reach back

◆ Assessment – Student and Manager – Both asked
  ◆ 1. How do you compare against the competency model?
  ◆ 2. What competencies most important in next 1-2 years?
    – Pick 1 or 2 technical and 1 soft skills competencies
    – MITRE Institute will group students with similar competency improvement interests

◆ Group Work Activities – students meet virtually, online, every other week for an hour

◆ Self-direct work groups – Organize and direct own activities

◆ Accountable to higher level Mentors, attend ~ 3rd meeting
  – Project proposal/Project Plan/Status Updates & Reviews
  – Final Project Presentation
Customized Learning: Group Projects (SEworks2)

◆ Student groups pick project – “Give Back to MITRE”
  – Looking for an internally publishable product
  – Helpful for SEs in company
  – Products published on internal SE websites - Examples
    ◆ White paper on hot SE topic
    ◆ New tool or approach to an SE activity developed
    ◆ Analysis or Ranking of a Set of SE Tools
    ◆ Guidance for SE Milestone Meetings (PDR, CDR, etc.)

◆ Groups kickoff & work in first course – High Performance SE Teams

◆ Competition: Final presentations judged for presentation to Engineering Advisory Council and/or Officers
Summary - 1

- MITRE Institute developed new internal program to complement in-house MS SE & deep catalog programs

- Sought and obtained senior management support early and often

- Defined methodology included benchmarking, change management, & building a SE competency model (CM)

- CM used in benchmarking company, curriculum design, and student assessments

- 3-Level SEworks Program covers specific competencies at different career levels
Summary - 2

- Make vs. buy decision made separately for technical, non-technical, and e-Learning content

- Many Group Work approaches examined
  - 1st Level – Virtual mentored groups
  - 2nd Level – Virtual, self-directed groups (?)

- On-the-job Project & Group Work integral to program

- Measurement types used judiciously on various program segments to control effort and costs

- Used all external benchmarking study results
Backup
<table>
<thead>
<tr>
<th>Task/Activity</th>
<th>Measures/Outcome</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical Courses</td>
<td>Attendance 100% (or by Remote Verification - class #1 and #3 allowed)</td>
<td>Dates</td>
</tr>
<tr>
<td>1) SEworks1 - Overview of SE @ MITRE</td>
<td></td>
<td>1) November 2009</td>
</tr>
<tr>
<td>2) SEworks1 - SE Life Cycle Pre-Dev. Phase</td>
<td></td>
<td>2) December 2009</td>
</tr>
<tr>
<td>5) SEworks1 – SE Life Cycle Post Dev. Phase</td>
<td></td>
<td>5) June 2010</td>
</tr>
<tr>
<td>Non-Technical, Soft Skills Courses</td>
<td>Attendance 100%</td>
<td>Dates</td>
</tr>
<tr>
<td>3) SEworks1 – Successful Teams &amp; Results</td>
<td></td>
<td>2) February 2010</td>
</tr>
<tr>
<td>6) SEworks1 - Effective Communications and Adaptability</td>
<td></td>
<td>6) June 2010</td>
</tr>
<tr>
<td>e-Learn Courses</td>
<td>Learning Gateway Completion Records</td>
<td>Dates</td>
</tr>
<tr>
<td>1) Human Computer Engineering</td>
<td></td>
<td>1) Mar-Apr. 2010</td>
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<tr>
<td>2) Cost-Benefit Analysis</td>
<td></td>
<td>2) June 2010</td>
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<tr>
<td>Project: 2-3 Competencies Chosen</td>
<td>Agreed to with Manager and List Sent to MITRE Institute (1-2 technical and one non-technical)</td>
<td>Jan. 2010</td>
</tr>
<tr>
<td>Project Description Completed</td>
<td>Agreed to with Manager &amp; Project Description sent to MITRE Institute, including milestones and outcomes.</td>
<td>Jan. 2010</td>
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<tr>
<td>Project Milestone Update</td>
<td>Meet with Manager/Mentor/Group – Updates to MITRE Institute</td>
<td>February–May 2010</td>
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<tr>
<td>Project Completion</td>
<td>• Final Write Up to MI&lt;br&gt;• Student reports to Manager and Sub-cohort Group &amp; Mentor&lt;br&gt;• Manager evaluates performance of their student staff member</td>
<td>June 2010&lt;br&gt;June 2010&lt;br&gt; Late 2010 or Early 2010</td>
</tr>
</tbody>
</table>
Naming and Branding a Program

◆ Create the Name
  – Catchy, easy to remember
  – Demonstrate concept of level
  – Include main thrusts
  – Audience
  – Use of names – websites, email, communications, etc.

◆ Iconify Name
  – Graphic artists & many options
  – Consider uses

◆ Color the Icons
  – Effective for all purposes?
Value of Competencies: Integration into Organizational Programs & Processes

- Individual Assessment*
- Needs Analysis
- Certification*
- Conferences
- Degree Programs
- In-house Classroom Training*
- On-the-Job Training*
- Technical Exchange Meetings
- Stretch Assignments*
- Mentoring
- Communities of Practice
- Job Rotation
- Peer Reviews

* Probable areas for competency use

- Promotion
  - Promotion Criteria & Decision-making
  - Talent Reviews
  - Career Planning

- Recruitment & On-boarding
  - Job Descriptions
  - Sourcing
  - Interviewing & Selection
  - Orientation/Assimilation

- Performance Management
  - P & D Goals*
  - Performance Feedback

- SE Competencies
- Assessment
- Development

- Recognition & Rewards
  - Recognition Programs
  - Pay for Performance and/or Knowledge & Skills

- Promotion

- In-house Classroom Training*
- On-the-Job Training*
- Technical Exchange Meetings
- Stretch Assignments*
- Mentoring
- Communities of Practice
- Job Rotation
- Peer Reviews

* Probable areas for competency use
Cohort Job Family Analysis

- Originally focused on two job families
- But staff in other job families & their managers will probably be interested
- Performed analysis to determine maximum group size by AC-level groupings & potential annual cohort size

<table>
<thead>
<tr>
<th>Job Families</th>
<th>Percent Coverage Factor</th>
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<tbody>
<tr>
<td><strong>Main Job Families</strong></td>
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<tr>
<td>Multi-Discipline SE's (MLTSYS)</td>
<td>95%</td>
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<tr>
<td>Information SE's (ISYSEG)</td>
<td>95%</td>
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<tr>
<td><strong>Related Job Families</strong></td>
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<tr>
<td>InfoSec Eng/Sci (INFSEC)</td>
<td>65%</td>
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<tr>
<td>Defense/Space SEs (DEFSPC)</td>
<td>65%</td>
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<tr>
<td>Domain Oper Anal (DMOPAN)</td>
<td>65%</td>
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<tr>
<td>Software Sys SEs (SWSYEG)</td>
<td>65%</td>
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<tr>
<td><strong>Remaining ~20 Job Families</strong></td>
<td>25%</td>
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SE Certification Path
Blending education, experience & knowledge

◆ Enroll separately in catalog SE Certification Program
  – INCOSE: Nationally/Internationally recognized
  – Reasonable cost

◆ Manager & staff determine if certification appropriate
  – Project provides testing funding

◆ MITRE Institute provides pre-testing training

◆ SEPO may simplify the application process

◆ Probably complete in a non-SEworks year
  – SEworks already increasing work load
Overall Assessment of SECEP Program

- Cumulate data for 2-3 competencies/student over time
- Looking for 80% of students showing improvement on the competencies they worked on

<table>
<thead>
<tr>
<th>Competency #1</th>
<th>Competency #2</th>
<th>Competency #3</th>
<th>Competency #4</th>
<th>Competency #5</th>
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<tr>
<td>Totals</td>
<td>80%</td>
<td>90%</td>
<td>70%</td>
<td>80%</td>
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SEworks Design, Development and Delivery Schedule

<table>
<thead>
<tr>
<th>Level</th>
<th>Design Time Periods</th>
<th>FYs &amp; Levels Delivered</th>
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<tbody>
<tr>
<td>1</td>
<td>FY09 (2-9/09) – Level 1 Detailed Design</td>
<td>FY10 – Level 1</td>
</tr>
<tr>
<td>2</td>
<td>FY10 – Level 2 Detailed Design</td>
<td>FY11 – Level 1,2</td>
</tr>
<tr>
<td>3</td>
<td>FY11 – Level 3 Detailed Design</td>
<td>FY12 – Level 1,2,3</td>
</tr>
</tbody>
</table>