Advanced Simulation Course for Army Simulation Management Professionals

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In 2009 NPS was tasked by the US Army Center for Analysis, HQDA G8 to develop, deliver, and sustain an executive level course titled the “Army Advanced Simulation Course”

Course sponsored by the Simulation Proponent Division, office of the Army Modeling & Simulation Directorate for the US Army

Course Developed & Delivered by
Delivery Schedule

Prototype Offering: 11-22 May 2009
First Offering: 26 April-7 May 2010
Subsequent Offerings: Pending Sponsor Approval

Course delivered at the Center for Executive Education (CEE) on campus at

in Monterey, California
Course Purpose:

Two week senior leaders course for LTC/COL level FA57 and senior civilians in the Army M&S Community.

Focus:

Provide a NON-technical perspective of significant M&S issues.
Scope:

• Equip students with better M&S management skills at Direct Reporting Unit (DRU), Army Command (ACOM), and Program Executive Officer (PEO) level.

• Familiarize students with current M&S management concerns throughout the Acquisition Life Cycle, specifically the different M&S applications in use during each phase.
Army Advanced SIM Course

Prototype Course:

- **Objective:** Discover educational gaps, identify appropriate target audience, and determine potential for future offerings.
- **Delivered:** 11-22 May 2009
- **Location:** NPS Center for Executive Education (CEE)
- **Academic Time:** 72 Hours
- **Total Time:** 80 Hours
Prototype Course: 

Student Body: 20 Total

Prerequisite:

Commissioned Officer Personnel:
Grade 04 and above Active Army and Reserve Components

Civilian Personnel:
Grade GS13 and above, and those individuals selected by the Functional Area Proponency Representative

Enlisted Personnel:
Grade E-8 and above Active Army and Reserve Components assigned to simulation operations positions.
Prototype Course:

- DITRA: 5%
- JMSC: 5%
- ATEC: 10%
- PEO-STRIC: 5%
- ATC-OTC: 5%
- FFID: 5%
- TRADOC-ARCIC: 5%
- Nat'l SIM Ctr.: 10%

Organizations Represented:

- 5/75 TSD: 20%
- MSCO: 5%
- 2/75 TSD: 5%
- EUCOM: 5%
- HQDA, Army G3: 15%
Prototype Course: NPS Department Participation

- Computer Science
- Graduate School of Business & Public Policy
- Modeling, Virtual Environments, and Simulation (MOVES)
- Operations Research & Simulation Experiments & Efficient Designs (SEED) Center
- Systems Engineering
Prototype Course: SME Participation

– NPS Thesis Students
– GSResearch LLC
Prototype Course: Breakdown

• **Module 1: Management Concerns Regarding M&S**
  – Week 1 (Lessons 1-5)

• **Module 2: Lifecycle M&S Issues**
  – Week 2 (Lessons 1-4, plus Guest Lectures)
Prototype Course: Topics

Module 1: Management Concerns Regarding M&S

- **M&S Education (Lesson 1)**
  - Role of SIM professional, development & significance of MSBOK, and *what* should an M&S curriculum contain for DoD M&S professionals

- **M&S Requirements (Lesson 2)**
  - Overview of DoD M&S, M&S Standards, LVC, M&S Requirements Generation, M&S Fidelity and Resolution, VVA, DoD Stakeholders, DoD Organizations, Governing Docs, Army M&S Domains

- **M&S in Testing (Lesson 3 & 4)**
  - T&E Overview, Why We Test, Different Testing Types (DTE, OTE, LFTE and Military Experimentation)

- **M&S in Analysis (Lesson 5)**
  - Overview of DoD Analysis Domain and Development of Analytical Simulation Study
Prototype Course: Topics

Module 2: Lifecycle M&S Issues

- **M&S Acquisition (Lesson 1 & 2)**
  - Focus of M&S in Acquisition, JCIDS and use of M&S in JCIDS, DoD Life Cycle and M&S in DoD Life Cycle, M&S Challenges in Acquisition over the DoD Life Cycle, M&S Contracting Considerations, SIM Based Acquisition (SBA)

- **M&S in Risk, Cost, and Decision Analysis (Lesson 3)**
  - M&S in Risk and Cost Analysis in Program Management, M&S support in Decision Making

- **Future Trends in Simulation (Lesson 4)**
  - M&S Convergence of Live, Virtual, and Constructive Simulation
  - Serious Games and massively Multiplayer Games, Agent Based Models, Other New M&S Trends

- **Guest Lectures (Provided expert knowledge and techniques)**
  - Concept Refinement
  - M&S Education Opportunities for DoD Communities
Prototype Course: Supplemental Materials

- Case Studies
- Lesson Pre-Reads
- Handouts
- Group Exercises
- In-Class Tool Application
- Instructor Lead Discussion
Lessons Learned...
• **Course Assessments by Students & Instructors**
  – Each student completed a daily assessment, a weekly evaluation, and overall course evaluation. Each daily evaluation focused on the topic delivered that day.
  – Each instructor completed his/her own assessment of their topic delivery for the NPS Principal Investigator awareness and to surface any obvious changes the instructor should apply to subsequent deliveries of the course.

• **In Summary:** The following critical changes for 2010 Delivery.
  – More training focus, to include joint modeling
  – Incorporate more SMEs from DoD and Industry
  – More Practical Exercises
  – Change to topic delivery sequence
  – Update some topic’s supplemental material and examples
Advanced Simulation Course

APPLICATION OF M&S

- Discussion lead by Instructor
- Case Study
- Guest Speaker from Community Presents

Initial Thoughts after 1st pilot course (G. Dahl)
The Way Forward...
For 2010 Course:

Enrollment:

• 22 Students
  – Commissioned Officer Personnel: Active Army and Reserve Component, Grade 04 and Above
  – Civilians: Testing and Training communities

Scope: This course combines relevant reading assignments and formal presentations by faculty SMEs, who will lead in-class discussion, group exercises, and an examination of relevant case studies. Additionally, this course incorporates student and instructor feedback from the spring of 2009 prototype course in order to more thoroughly address key M&S concerns for Army leadership. Improvements to the course include the addition of: practitioners in Analysis, Testing, and Acquisition to give guest lectures and serve as discussion moderators; a session on joint M&S; and a greater focus on training.
## Schedule: Week 1

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<thead>
<tr>
<th>Sunday 25APR10</th>
<th>Monday 26APR10 0800-1700</th>
<th>Tuesday 27APR10 0800-1700</th>
<th>Wednesday 28APR10 0800-1700</th>
<th>Thursday 29APR10 0800-1700</th>
<th>Friday 30APR10 0800-1700</th>
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<tbody>
<tr>
<td>Student Arrival at NPS</td>
<td>Opening Remarks</td>
<td>REQs Process (JCIDS &amp; ONS)</td>
<td>M&amp;S in Training</td>
<td>M&amp;S in Analysis</td>
<td>M&amp;S in Analysis</td>
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<td>Course Intro M&amp;S</td>
<td>Overview of M&amp;S Discipline</td>
<td>Resourcing SIM Efforts</td>
<td>M&amp;S During Experimentation</td>
<td>Brown Bag Lunch w/SME (ADS)</td>
<td>M&amp;S Analysis SME (TRAC Monterey)</td>
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<td>M&amp;S BoK</td>
<td>M&amp;S EDU</td>
<td>M&amp;S Activities</td>
<td>“Understanding Principles of the Analysis Field and how M&amp;S are used within the field of Analysis”</td>
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## Schedule: Week 2

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<td>3MAY10 0800-1700</td>
<td>4MAY10 0800-1700</td>
<td>5MAY10 0800-1700</td>
<td>6MAY10 0800-1700</td>
<td>7MAY10 0800-1200</td>
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<td></td>
<td>Testing M&amp;S SME</td>
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<td>M&amp;S Use in Risk Assessment &amp; Cost Analysis</td>
<td>Presentation of Course Certificate</td>
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<td>(ATEC)</td>
<td>Acquisition SME</td>
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<td>Final Assessment</td>
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<td>Brown Bag Lunch w/SME</td>
<td>Closing Remarks</td>
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<td>“Detailed Modeling to Support Decisions and Understanding the Connection”</td>
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<td>Managing M&amp;S</td>
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Topics, Topic Delivery Dates, and SMEs are subject to change as course is further developed.
Questions?
Backup Slides and Support Materials...
New M&S Governance and Management Structure Organized by Communities. Designed to Support & Integrate M&S Activities across the Department. Led by a 1 to 2 Star M&S Steering Committee (M&S SC) to provide governance.

Acquisition AT&L  Analysis PA&E & JS  Planning JS & Policy  Testing DOT&E & AT&L  Training P&R  Experimentation JFCOM

Common and Cross-Cutting M&S Tools
Common and Cross-Cutting M&S Data
Common and Cross-Cutting M&S Services

(SE FORUM)  (JADM)  (AP EXCOM)  (T2 ESG)  (JCDE EC)

Components
OSD, Joint Staff, COCOMs, Services

Goal: Establish corporate M&S management to address DoD goals: Leads GUIDES SHEPHERDS the $Bs in DoD M&S investments; adds value thru metrics & ROI-driven priorities; and seeks to provide transparency.