Certificate and Course Catalog

2026

Military Operations Research Society
1550 Wilson Boulevard, Suite 700, Arlington, VA 22209

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Introduction to Our Programs

MORS offers courses in a variety of topics, which typically range from one to five days. These programs provide the next level of professional development, and involve practical knowledge to equip you with essential information and to help prepare you to excel in your professional environment. MORS strives to provide both its members and non-members an opportunity to learn relevant national security analytical subjects often not covered by academia or commercial sources.

Benefits include:

- The addition of a unique skill in your resume that sets you apart from your peers
- Access to relevant courses for your career advancement
- Increased and broadened knowledge about the subject matter
- A demonstrated dedication to your profession
- A certificate of completion from MORS upon finishing the course

For more information about our offerings, contact Tina Yan at tina.yan@mors.org.

We also offer customized training opportunities!

MORS has created custom training programs for a variety of businesses and government organizations, both domestic and international. If you would like to explore setting up a custom, private course for your organization, please fill out the form on our website.

This seal denotes MORS has partnered with Virginia Tech to offer this certificate. Participants will receive a certificate of completion and a number of Continuing Education Units (CEUs) from Virginia Tech, in accordance with the number of contact hours.

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Certificate in Critical Skills for Analytics Professionals (CSAP)

In Partnership with VIRGINIA TECH

Overview

The course begins with the theoretical basis for effective and accurate presentation of project results in a military or government setting. From there, participants will attain an enhanced understanding of the methods and techniques utilized in effective analysis project management and discuss best practices in overcoming challenges.

Objectives

Our expert instructors will cover a diverse range of topics and skills that are critical to the analyst, including but not limited to:

- Developing and defining the problem set—how to research and construct problems in order to understand the context and scope that provides the most timely, useful results
- Reaching and reading the customer—ways to establish professional relationships and communicate the problem and solution
- Leading an analytics project team or functioning as an effective member
- Gleaning information from subject matter experts—how to plan and conduct interviews with experts to gain information and data
- Gleaning information from groups—how to plan and conduct group elicitation sessions with committees and other working groups in order to develop and assess alternatives, uncertainties, and value and risk preferences
- Communicating results verbally and non-verbally—how to deliver the results and conclusions of the analytics process
- Conveying worth—how to construct recommendations rooted in solid analytical methods that are useful, executable, and impactful

Tuition

Employer	Member	Non-Member
MORS Government Sponsor*	$2,700	$2,800
U.S. Federal Government	$2,800	$2,900
National Research Partner	$2,755	$2,850
All Others	$2,900	$3,000

** MORS Government Sponsor organizations include Center for Army Analysis, HQDA/DCS Program G-8; Marine Corps Combat Development and Integration; Naval Operations, N81; SAF/SA, Studies and Analysis; OSD, A&S; and DHS S&T/OSE/ORA.*

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Draft Agenda

Time (Eastern)	Day 1	Day 2	Day 3	Day 4	Day 5
10:00 AM	Welcome & Introduction to OR 101	Background and Introduction to Non-Verbal Communication	Introduction to Ethics	Introduction: What is an Analytics Project?	Course Review & Introduction to Practicum
11:00 AM	Stage Setting: Doing Your Homework		Establishing Guidelines for Professional Analytic Practice	Project Management Framework	Team Research & Presentation Development
12:00 PM	Exercise: Elicitation Experiences	Break	Break	Setting Up Your Analytics Project	Break
1:00 PM	Lunch	Presenting Yourself & Your Topic	Responsibilities of a Professional Analyst	Communication, Communication, Communication	Practicum Scenario Overview / Design Review
2:00 PM	Exercise: CLAS	Lunch	Lunch	Lunch	Team Collaboration / Presentations
3:00 PM	Foundations of Success: Thinking Complex / Exercise: Critical Thinking	Visual Analytics	Introduction to Tools / Tool Selection & Considerations	Controlling Your Analytics Project	Lunch / Development Review
4:00 PM	Break / Model Simple		Data Analysis Tools & Methods	Exercise	Team Collaboration / Presentations
5:00 PM	Exercise: Notional Modeling Problem	Break	Predictive Methods / Break	Break	Deployment Review / Team Collaboration
6:00 PM	Build an Argument / Tell a Story	Practical Exercise / Presentations	Prescriptive Methods / Conclusion	Project Closeout / Wrap-Up & Conclusion	Presentations / Wrap-Up & Conclusion

Register: https://www.mors.org/events/certificates/csap

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Certificate in Critical Tools for Analytics Professionals (CTAP)

Overview

The MORS Certificate in Critical Tools for Analytics Professionals (CTAP) is a five-day course designed for analysts seeking to gain familiarity with the levels of analytics and obtain hands-on experience with Operations Research (OR) tools. This course is constantly evolving to adhere to the most current analytical standards and methods, due to the increasing threat of cyber security and other emerging threats.

Objectives

Our expert instructors will cover a range of topics and tools that are critical to the analyst, including:

- Statistics and probability
- Regression and time series
- Optimization and simulation
- Decision analysis
- Causal and route analysis
- Practicum

Tuition

Employer	Member	Non-Member
MORS Government Sponsor*	$2,700	$2,800
U.S. Federal Government	$2,800	$2,900
National Research Partner	$2,755	$2,850
All Others	$2,900	$3,000

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Draft Agenda

Time (Eastern)	Day 1	Day 2	Day 3	Day 4	Day 5
10:00 AM	Welcome & Introduction	Sample Mean, Central Limit Theorem, P-Values, and Hypothesis Testing	Simulation	Introduction to Decision Analysis	Introduction to Bayesian Networks
	Summarizing Data, Part I			Decision Making Challenges	
11:00 AM			Monte Carlo Methods	Foundations	
	Exercise			Selecting a Decision Process	Break
12:00 PM	Lunch	Lunch	Lunch	Framing the Decision	Bayesian Networks in Practice
				Lunch	Lunch
1:00 PM	Summarizing Data, Part II	Linear Regression and Connection to P-Values	Introduction to Optimization	Crafting Objectives and Value Measures	
2:00 PM	Exercise		Integer Optimization		Leaning Bayesian Networks from Data
	Summarizing Data, Part III and Introduction to Python	Break	Exercise	Designing Alternatives	
3:00 PM		Logistic Regression	Break	Break	Break
4:00 PM	Exercise		Nonlinear Optimization	Deterministic MODA	Causal Analysis
		Break	Exercise		
5:00 PM	Analytic Problem Framing	Time Series	Sensitivity Analysis	Break	Practicum
				Portfolio Analysis	
6:00 PM	Conclusion	Conclusion			Wrap-Up & Conclusion

Register: https://www.mors.org/events/certificates/ctap

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Certificate in National Security Risk Analysis

Overview

The MORS Certificate in National Security Risk Analysis is a five-day course designed for all levels of analysts seeking to understand the basic concept of risk as it relates to national security. Probability, uncertainty, consequences, fear, and human control all come into play when it comes to risk. The course will start by exploring typically fuzzy problems and move them towards quantitative risk evaluation. Throughout the course, participants will survey several quantitative risk methodologies, including fault trees, value-based decisions, the Lagrange-multiplier method, and modern data visualization. Students will learn quantitative risk evaluation, build probability models, compute the value of information, and survey best practices for communicating risk. The course will start by exploring typically fuzzy problems and moving them towards quantitative risk evaluation. Participants will survey several quantitative risk methodologies, including fault trees, value-based decisions, Lagrange-multiplier method, and modern data visualization.

Objectives

Our expert instructors will introduce participants to a variety of key tools and methods used in risk analysis as it pertains to national security. Participants will learn quantitative risk evaluation, build probability models, compute the value of information, and survey best practices for communicating risk. By the end of the course, participants will be able to:

- Conceptualize national security risk problems
- Structure adversarial risk problems with shifting evidence
- Survey quantitative risk methodologies
- Use Monte Carlo Simulation for risk analysis
- Communicate risk to executives, analysts, and the public

Requirements: Computer with Excel and administrative privileges to download SIPMath (a simulation tool) and Netica (Bayesian network / Influence diagram)

Tuition

Employer	Member	Non-Member
MORS Government Sponsor*	$2,700	$2,800
U.S. Federal Government	$2,800	$2,900
National Research Partner	$2,755	$2,850
All Others	$2,900	$3,000

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Draft Agenda

Time (Eastern)	Day 1	Day 2	Day 3	Day 4	Day 5
10:00 AM	Welcome	Using Monte Carlo Simulation for Risk Analysis: Model Building	Making Decisions with Risk and Uncertainty: Verifying & Validating Your Model	Risk Management & Risk Communication	Risk Applications & Bayesian Models: Computational Creativity
11:00 AM	Definitions & Pillars of Modern Risk: Developing Your Risk Intelligence				
12:00 PM	Lunch	Security System Screening Exercise	Utility Exercise	Lunch	Lunch
1:00 PM	Introduction to Quantitative Risk Concepts	Lunch	Lunch	Examples of Risk Models	Bayesian Updating
2:00 PM		Probability Distributions	Decision Making with Uncertainty		
3:00 PM	Break	Distribution Exercise	Value of Information Exercise	Decision Tree Exercise	Value of Information Exercise II
4:00 PM	Calibration of Probabilities	Break	Break	Break	Break
5:00 PM		Monte Carlo Simulation	Intelligent Adversary	Risk Communication	Bayesian Networks, Influence Diagrams, & Netica
6:00 PM			Expert Elicitation Exercise	Risk Communication Exercise	Closing Thoughts & Questions

Register: https://www.mors.org/events/certificates/national-security-risk-analysis

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Certificate in Emerging Techniques in Analytics and Data Science

Overview

The MORS Certificate in Emerging Techniques in Analytics and Data Science is designed to provide a broad overview of many of the emerging techniques in analytics and the data sciences. The course is intended for mid-level journeymen analysts looking to gain a breadth of knowledge in analytic techniques and junior analysts seeking to understand what is out there to learn. Throughout the course, there will be demonstrations and hands-on code to see how these algorithms run on actual data. Due to time constraints and the breadth of the course, detailed coding and individual development of models will be left to follow on future potential courses in Python and R.

Objectives

Our expert instructors aim to teach participants about emerging techniques in analytics and data science, enabling participants to understand the strengths and weaknesses of various techniques and cut through the marketing hype to show how implementation can actually help national security organizations.

Tuition

Employer	Member	Non-Member
MORS Government Sponsor*	$1,620	$1,680
U.S. Federal Government	$1,680	$1,740
National Research Partner	$1,653	$1,710
All Others	$1,740	$1,800

** MORS Government Sponsor organizations include Center for Army Analysis, HQDA/DCS Program G-8; Marine Corps Combat Development and Integration; Naval Operations, N81; SAF/SA, Studies and Analysis; OSD, A&S; and DHS S&T/OSE/ORA*

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Draft Agenda

Time (Eastern)	Day 1	Day 2	Day 3
9:00 AM	Introduction	Unsupervised Learning	Text Mining and Natural Language Processing (NLP)
	Organizations & Roles in AI/ML	Supervised Learning	
10:00 AM	Case Studies in the Intelligence Community & DoD	Emerging World of Artificial Neural Networks	
11:00 AM	Introduction to Digital Transformation		Computer Vision (CV)
12:00 PM	Lunch	Lunch	Lunch
1:00 PM	Deeper Dive into Machine Learning	Reinforcement Learning and Stochastic Optimization	Artificial Intelligence (AI) Activity
2:00 PM		Network Science & Graphs	Organizational Implementation
3:00 PM	Hands-On Exercise	IC/DoD Problem Framing Exercise	Future Topics
4:00 PM			Wrap-Up & Conclusion

Register: https://www.mors.org/events/certificates/analytics-and-data-science

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Campaign Analysis Methods Course

Overview

The MORS Campaign Analysis Methods Course is intended for operations research analysts wishing to learn about the methods and techniques that underpin campaign analysis. Campaign analysis is unique in its challenge to analyze long timelines, large geographical areas, heterogeneous assets, parallel and sequential heterogeneous missions, and multiple factions.

This course is not tool-specific, but will focus on application of fundamental operations research techniques to campaign analysis.

Objectives

Throughout the course, participants will be provided with:

- An overview of campaign analysis
- How it's applied in the community
- A description of common campaign tools
- A review of applicable MS&A techniques
- A demonstration of building elements of a campaign model

Tuition

Employer	Member	Non-Member
MORS Government Sponsor*	$2,700	$2,800
U.S. Federal Government	$2,800	$2,900
National Research Partner	$2,755	$2,850
All Others	$2,900	$3,000

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Draft Agenda

Time (Eastern)	Day 1	Day 2	Day 3	Day 4
10:00 AM	Introduction to Campaign Analysis	Joint Planning Process Overview and Scenario Data Development	Attacker Defender Model	Terrain & Geography
11:00 AM				
12:00 PM		Mission Analysis and Course of Action Development with Case Study	Forces Allocation Model	Logistics
1:00 PM	Lunch	Lunch	Lunch	Lunch
2:00 PM	Introduction to Campaign Analysis *(Continued)*	Statistics	Forces Allocation Model *(Continued)*	Combat Adjudication
3:00 PM		Optimization	Air Mission Planning	
4:00 PM	Modeling & Simulation	Data Visualization		Data Visualization & Storytelling
	Break			
5:00 PM	Modeling & Simulation		Air Campaign Model	
6:00 PM				

Register: https://www.mors.org/events/courses/campaign-analysis

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Certificate in Basic Excel Functions for Data Analysts

Overview

The MORS Certificate in Basic Excel Functions for Data Analysts is a five-day course designed for beginner to mid-level analysts who wish to enhance their Excel skills and see what is new. Participants will learn how to conduct analysis and prepare briefs for decision makers using only Microsoft Office products. The course begins with the basics to provide a strong foundation, then builds up to a more in-depth look at various tools and functions within Excel. On the final day, participants will create and present a Capstone Project that combines everything they have learned throughout the week.

During the first 3 days (Week 1), the course material is taught with in-course work and overnight homework to reinforce the material covered. Between weeks, a practice Capstone Project is presented to provide more opportunities to reinforce the material. Finally, during the last 2 days (Week 2) an actual Capstone Project is presented: the first day of Week 2, each student works the capstone project independently, while the second day, students are grouped into teams to present the results of the Capstone to the instructors.

Objectives

Through a combination of lectures and group work, our expert instructors will introduce participants to a variety of different Excel tools and functions, including:

- Probability, statistics, and simulation
- Creating charts
- Data query and analysis
- Visual basic and dashboards

Requirements: Computer equipped with Excel 2016 or beyond (anything before 2016 will not work), plus three add-ins that will be used in the course: Data Analysis Toolpak, Solver, and Visual Basic Editor

Tuition

Employer	Member	Non-Member
MORS Government Sponsor*	$2,700	$2,800
U.S. Federal Government	$2,800	$2,900
National Research Partner	$2,755	$2,850
All Others	$2,900	$3,000

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Draft Agenda

Time (Eastern)	Day 1	Day 2	Day 3	Day 4	Day 5
10:00 AM	Welcome & Introductions	Day 1 Review	Day 2 Review	Week 1 Review	Capstone Project Review
	Module 1: Excel Basics - Getting Started	Module 3: Creating Charts	Module 5: Visual Basic & Dashboards	Time to Work on Capstone Project & Working Lunch	Group Time to Work on Capstone Projects
11:00 AM					
	Break	Break	Break		
12:00 PM	Excel Basics (Continued)	Creating Charts (Continued)	Visual Basic & Dashboards (Continued)		
	Lunch	Lunch	Lunch		Lunch
1:00 PM					
2:00 PM	Module 2: Probability, Statistics, and Simulation	Module 4: Data Query and Additional Analysis	Module 6: Presenting Results to Senior Leaders		Capstone Project Presentations
3:00 PM	Break	Break	Break	Capstone Project Review	
	Probability, Statistics, and Simulation (Continued)	Data Query and Additional Analysis (Continued)	Presenting Results to Senior Leaders (Continued)		
4:00 PM				Wrap-Up & Team Assignment	Wrap-Up & Conclusion
	In-Class Homework	In-Class Homework	Wrap-Up		
5:00 PM			Optional Homework Time or Capstone Project Q&A		
	Wrap-Up	Wrap-Up			
6:00 PM					

Register: https://www.mors.org/events/certificates/excel-functions

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Certificate in Advanced Excel Functions for Data Analysts

In Partnership with VIRGINIA TECH

Overview

The MORS Certificate in Advanced Excel for Data Analysts is a comprehensive five-day course designed to enhance your Excel skills for advanced data manipulation and analysis. This course is perfect for analysts looking to deepen their understanding of Excel's capabilities and leverage tools like Power BI for business intelligence. Over the five days, you'll master techniques in working with complex datasets, building interactive reports, and visualizing data through dashboards.

By the end of this course, participants will be equipped to handle advanced Excel functionalities, create sophisticated business intelligence reports, and apply Excel's tools to solve real-world analytical problems. A capstone project at the end of the course allows you to put all your newfound knowledge into practice.

Requirements: Computer equipped with Excel 2019 or beyond (anything before 2019 will not work), plus Power BI which comes with Microsoft Office.

Objectives

Through a blend of interactive lectures and practical exercises, participants will gain proficiency in:

- **Advanced Data Manipulation:** Importing, cleaning, transposing, and organizing complex datasets using data functions, with enhanced sorting and filtering capabilities.
- **Expanded Analysis & Data Query Capabilities:** Leveraging advanced charts (e.g., funnel, radar, and tornado), project management charts (Gantt, S-curve), and in-cell visualizations like sparklines. Master new logic, lookup functions, and advanced pivot table techniques.
- **Power BI Integration:** Building business intelligence reports and dashboards using Power BI to visualize data, enabling deeper insights into business operations.
- **Creating Excel Dashboards, Templates, and Forms:** Develop sophisticated Excel dashboards and design custom templates and forms to enhance workflow and reporting efficiency.

Tuition

Employer	Member	Non-Member
MORS Government Sponsor*	$2,700	$2,800
U.S. Federal Government	$2,800	$2,900
National Research Partner	$2,755	$2,850
All Others	$2,900	$3,000

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Draft Agenda

Time (Eastern)	Day 1	Day 2	Day 3	Day 4	Day 5
10:00 AM	Introductions	Review	Review	Review	Questions?
	Getting the Data Ready, Pt. 1	Analysis & PM Charts	Power BI: Creating Reports, Pt. 1	Probability & Creating Templates	Work on Capstone Project
11:00 AM					
	Break	Break			
	Getting the Data Ready, Pt. 2	In-Cell Charts, Sparklines, & Chart Templates	Break	Break	
12:00 PM			Power BI: Creating Reports, Pt. 2	What-If Analysis	
	Lunch	Lunch	Lunch	Lunch	Lunch
1:00 PM					
	Working with the Data, Pt. 1	Data Query: Logic & Lookup	Power BI: Creating Dashboards, Pt. 1	Preview: Capstone Project	Capstone Project Review & Questions
2:00 PM				Work on Capstone Project	
	Break	Break	Break		
3:00 PM	Working with the Data, Pt. 2	Data Query: Pivot Tables	Power BI: Creating Dashboards, Pt. 2		
4:00 PM					
	In-Class Homework & Questions	In-Class Homework & Questions			
5:00 PM			Wrap-Up		
	Wrap-Up	Wrap-Up			
6:00 PM					

Register: https://www.mors.org/events/certificates/advanced-excel-functions

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Overview

The MORS Certificate in Survey Process is a four-day course for all analysts seeking to gain a practical understanding in the various aspects of research survey methodology. The course will cover the basic principles of survey research and will provide participants with guidance in the design and execution of high-quality surveys.

Objectives

Our expert instructor will guide participants through the key aspects of properly designing, fielding, and analyzing surveys. A variety of topics will be covered, including:

- How to frame problems, design good survey questions, and craft an effective survey instrument
- Avoiding common pitfalls in survey design and ensuring quality data capture
- The trade-offs between various survey and data collection modes
- Ethical considerations of surveys
- How to understand decision makers and respondents
- Statistical methods for analyzing survey data
- Methods and use cases for survey data analysis
- Effective ways to communicate results

Tuition

Employer	Member	Non-Member
MORS Government Sponsor*	$2,700	$2,800
U.S. Federal Government	$2,800	$2,900
National Research Partner	$2,755	$2,850
All Others	$2,900	$3,000

** MORS Government Sponsor organizations include Center for Army Analysis, HQDA/DCS Program G-8; Marine Corps Combat Development and Integration; Naval Operations, N81; SAF/SA, Studies and Analysis; OSD, A&S; and DHS S&T/OSE/ORA*

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Draft Agenda

Time (Eastern)	Day 1	Day 2	Day 3	Day 4
9:00 AM	Welcome & Introductions	Introduction to Question Development	Exercise: Dog in a Hat	Sampling: Non-Response in Surveys
10:00 AM	Picture a Survey		Design: Pre-Test & Focus Groups	Analysis: Post Collection of Survey Data
	Break		Exercise: Pre-Test Questions	
11:00 AM	What is a Survey?	Break	Lunch	Exercise: Survey Analysis Plan
		Questionnaire Design		
12:00 PM	Bias Effect	Exercise: Question Design	Inference & Error in Surveys	Lunch
1:00 PM	Lunch	Lunch	Sampling: Frames and Coverage Error	Analysis: Case Study Descriptive
2:00 PM	Bias Effect *(Continued)*	Question Design	Break	Analysis: Case Study Advanced Analytics
3:00 PM	Break		Sampling: Design and Sampling Errors	Survey Analysis: Tool
4:00 PM	Problem Framing	Pre-Test		Exercise & Course Wrap-Up

Register: https://www.mors.org/events/certificates/survey-process

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Overview

The MORS Certificate in Wargaming is a five-day course designed to enhance analyst capability and knowledge in multiple aspects of professional games, including research, design, development, execution, analysis, and reporting. Through a combination of lectures and exercises, participants will learn the theory behind wargames before diving into research design and execution. Building on Peter Perla's theory of the "Architect, Artist, and Analyst" model for game designers, the course includes material that covers each style of wargame design. The course culminates in a practicum where participants will be divided into teams to develop and execute their own game for an assigned analytical problem.

Objectives

Our expert instructors will guide participants through the key aspects of wargaming and aid them in creating their own game on the final day of the course. Along the way, participants will learn about the following:

- Defining a wargame
- A brief history of wargames
- Building blocks of game design
- Adjudication
- Strategic gaming
- Wargame graphics
- Game analysis

Tuition

Employer	Member	Non-Member
MORS Government Sponsor*	$2,700	$2,800
U.S. Federal Government	$2,800	$2,900
National Research Partner	$2,755	$2,850
All Others	$2,900	$3,000

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Draft Agenda

Time (Eastern)	Day 1	Day 2	Day 3	Day 4	Day 5
10:00 AM	Welcome	Welcome	Game Analyses	Game Design: Analyst	Game Design: Analyst
	What is a Wargame?	Design Basics			
11:00 AM	Designing Wargames is Hard – Definitions	Design Advances Process			
12:00 PM	Lunch	Lunch	Lunch	Lunch	Lunch
1:00 PM	The Axes of Wargaming	Design Advanced Elements	Optional Topic	Strategic Gaming	Practicum
2:00 PM	Designing as the Architect	Tasks to Games			
3:00 PM	Break	Break	Break		
	Brief History of Wargame	Adjudication			
4:00 PM			Wargame Graphics	Break	
5:00 PM	Wargame: Kriegspiel	Game Deconstruction		Game Design: Analyst	
6:00 PM			Facilitation		

Register: https://www.mors.org/events/certificates/wargaming

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Overview

The MORS Certificate in Cyber Wargaming examines the challenges of gaming cyber through a combination of lectures and practical exercises. Lectures will focus on games and game design, along with the application of game design to cyber issues. Practical exercises will give participants the chance to experience different types of cyber games, allowing them to assess requirements, plan budgets, practice response procedures, and examine player actions during play. These games will place them in decision-making roles during a simulated real-world problem—be it historical, contemporary, or projected into the future—and are currently used by decision makers within government, industry, and academia to examine policy issues and outcomes. At the end of the course, students will research, design, and present their own cyber game.

Objectives

Our expert instructors will introduce participants to the various ways that game design can be used to address the challenges of cyber operations and policy. Participants will:

- Learn how to think about cyber technology and processes to build effective games
- Build an understanding of how to represent cyber capabilities in games, including how to match the technical layers of game play with operational and strategic layers
- Build games directly addressing cyber operations
- Develop an awareness of the gaming tools available for cyber, and begin to associate specific game techniques with various cyber gaming requirements

Tuition

Employer	Member	Non-Member
MORS Government Sponsor*	$2,700	$2,800
U.S. Federal Government	$2,800	$2,900
National Research Partner	$2,755	$2,850
All Others	$2,900	$3,000

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Draft Agenda

Time (Eastern)	Day 1	Day 2	Day 3	Day 4	Day 5
10:00 AM	Welcome	Welcome	Cyber Gaming for Fun and Profit	Information Operations	Matrix Games
11:00 AM	Introduction: Games, Game Design, and Cyber	Tactical Cyber Games, Adjudication			
12:00 PM	Lunch	Lunch	Lunch	Lunch	Lunch
1:00 PM	Types of Wargame Designs	Cyber in Title 10 Wargames	Why Cyber Games are Wrong	Hiding and Showing Information in Games	Cyber-Mediated Trust in Games
2:00 PM	Game Design Fundamentals	Operational Cyber Games	Cyber Warfare, Lessons from Recent Events		Practical Game Design Exercise
3:00 PM	Break	Break	Break		
4:00 PM	Exercise: Enterprise Defender	Strategic Cyber Games	Cyber Gaming for Business	Break	
5:00 PM	Discussion			Information Operations	
6:00 PM					

Register: https://www.mors.org/events/certificates/cyber-wargaming

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Certificate in Homeland Security Gaming

Overview

The MORS Certificate in Homeland Security Gaming is a three-day course that examines the challenges of gaming homeland security incidents. The course will introduce homeland security operations and how games and exercises can be used for planning, training, and analysis. Lectures will focus on games and game design with their application to homeland security incidents. The instructors will employ a series of case studies and practical exercises to explain how to design and facilitate these games. At the end of the course, the students will be able to evaluate a natural or human-caused disaster and employ design techniques to model and produce a game.

Objectives

Our expert instructors will introduce participants to various ways game designs can be used to evaluate and model various types of disasters and emergencies. Participants will:

- Learn how to evaluate a specific type of disaster by employing Homeland Security priorities and applying game design techniques
- Be familiar with the game and exercises systems of the Homeland Security Exercise Evaluation Program (HSEEP)
- Understand how to model the contingencies of specific disasters using wargame design methods
- Develop an awareness of gaming tools to develop realistic disaster-based wargames

Tuition

Employer	Member	Non-Member
MORS Government Sponsor*	$1,620	$1,680
U.S. Federal Government	$1,680	$1,740
National Research Partner	$1,653	$1,710
All Others	$1,740	$1,800

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Draft Agenda

Time (Eastern)	Day 1	Day 2	Day 3
10:00 AM	Introduction: Where are we going?	Building a Game	Specific Domains & Problems
11:00 AM	Homeland Security Gaming		Practical Advice
12:00 PM	Games & Exercises	Topic Specific Models	Matrix Games
1:00 PM	Lunch	Lunch	Lunch
2:00 PM	Examples of Games	Exercise	Facilitation
3:00 PM	Setting the Game	Terrorism	Exercise & Wrap-Up
4:00 PM	Exercise	Weapons of Mass Destruction	
5:00 PM			
6:00 PM			

Register: https://www.mors.org/events/certificates/gaming-homeland-security

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Designing Tactical Games Course

Overview

The MORS Designing Tactical Games Short Course is a three-day course that focuses on building tactical games. Tactical games deal with maneuver and combat during individual battles. This requires the game designer to manage large numbers of complex variables in ways that allow the players to make the appropriate Warfighting decisions. Whether this is done using computer or manual techniques, it demands no small degree of simulation—the interaction of forces, the effects of human factors and technology, and the effects of the environment on combat. Any good wargame strives to produce realistic adjudications and outcomes, but the realism of tactical games is tested even more stringently because the players can more easily relate game mechanics and adjudication to their own personal experiences. All of this makes designing tactical games different—and even more challenging—than designing operational or strategic games. This class will examine some of these challenges and possible solutions in both theoretical and practical terms.

Objectives

Our expert instructors will address tactical games according to the different combat domains: ground, naval, and air. Participants will learn varying aspects of game design and explore future challenges from these perspectives, including but not limited to:

- **Exploratory games:** Games to create or test new tactics, weapon systems, or operational concepts
- **Ground games:** How good design must address basic concepts such as mission, time, space, forces, and command relationships; How to bring all the variables together to create a realistic tactical environment for players to engage in ground warfare; and Different ways of representing ground combat based on a wide range of commercial and professional games
- **Air and Naval games:** Integration of multi-domain operations (MDO) from space to surface into the overall air-battle kill chain; How do build games that focus on air combat operations, and air combat operations in support of ground forces; Methods for abstracting and estimating air combat values; and Putting ordnance on not only the target, but the entire kill chain, from identification to battle damage assessment

Tuition

Employer	Member	Non-Member
MORS Government Sponsor*	$1,620	$1,680
U.S. Federal Government	$1,680	$1,740
National Research Partner	$1,653	$1,710
All Others	$1,740	$1,800

** MORS Government Sponsor organizations include Center for Army Analysis, HQDA/DCS Program G-8; Marine Corps Combat Development and Integration; Naval Operations, N81; SAF/SA, Studies and Analysis; OSD, A&S; and DHS S&T/OSE/ORA*

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Draft Agenda

Time (Eastern)	Day 1	Day 2	Day 3
10:00 AM	Welcome	Defining the Air War in a Joint Environment	Issues in Designing Modern Naval Games
11:00 AM	Designing Tactical Games: What We Can Learn	Introduction to Air War	
12:00 PM	Lunch	Lunch	Lunch
1:00 PM	Designing Tactical Games: The Variables	Air to Air Games and Adjudication	Exercise
2:00 PM			
3:00 PM	Break	Break	Break
4:00 PM	Multidomain Operations at the Tactical Edge	Operational Air Games	Building Blocks of Modern Naval Games
5:00 PM	Learning by Doing		
6:00 PM			

Register: https://www.mors.org/events/courses/designing-tactical-games

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Gaming Cyber and Information Operations Short Course

Overview

The MORS Gaming Cyber and Information Operations Short Course is a three-day course that focuses on building professional games designed to explore, train, or educate on issues surrounding cyber security and information operations. Oftentimes, cyber games are seen solely through the lens of computer-based games, and information operations games are thought to be too hard to execute and adjudicate. This course strives to dispel those beliefs and posits that manual games that focus on organization, conceptualization, and experimentation have a place in these spaces as well. The course will consist of three primary sections: game design, gaming cyber security at the tactical, operational, and strategic levels, and gaming information operations. A combination of lectures and exercises will enhance the learning process.

Objectives

Our expert instructor will teach participants how to build the best game for a sponsor's objectives by focusing on the following topics:

- Understanding the types of games that are available and how they relate to gaming at the strategic, operational, and tactical levels of cyber
- Building games that focus on information operations, or incorporating information operations into large game systems
- The role of matrix games
- How to build realistic tactical games without becoming overwhelmed by details
- How to build analytical tools for tactical adjudication of cyber games
- Handling adjudication of social engineering and deception

Tuition

Employer	Member	Non-Member
MORS Government Sponsor*	$1,620	$1,680
U.S. Federal Government	$1,680	$1,740
National Research Partner	$1,653	$1,710
All Others	$1,740	$1,800

** MORS Government Sponsor organizations include Center for Army Analysis, HQDA/DCS Program G-8; Marine Corps Combat Development and Integration; Naval Operations, N81; SAF/SA, Studies and Analysis; OSD, A&S; and DHS S&T/OSE/ORA*

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Draft Agenda

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<tr><th>Time
(Eastern)</th><th>Day 1</th><th>Day 2</th><th>Day 3</th></tr>
<tr><td>10:00 AM</td><td rowspan="2">Welcome</td><td rowspan="2">Introduction:
Cyber and Games</td><td rowspan="5">Exercise:
Enterprise Defender</td></tr>
<tr><td></td></tr>
<tr><td></td><td rowspan="5">Information Operations
in Games</td><td rowspan="4">Designing
Cyber Games</td></tr>
<tr><td></td></tr>
<tr><td>11:00 AM</td></tr>
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<tr><td>12:00 PM</td><td rowspan="3">Lunch</td><td rowspan="3">Lunch</td><td rowspan="3">Lunch</td></tr>
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<tr><td></td></tr>
<tr><td>1:00 PM</td><td rowspan="5">Exercise:
Information Operations</td><td rowspan="5">Designing C-Suite
Cyber Games</td><td rowspan="3">Adjudication</td></tr>
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<tr><td></td></tr>
<tr><td>2:00 PM</td></tr>
<tr><td></td></tr>
<tr><td></td><td rowspan="3">Exercise:
Adjudication</td></tr>
<tr><td></td></tr>
<tr><td>3:00 PM</td><td rowspan="2">Break</td><td rowspan="2">Break</td></tr>
<tr><td></td><td rowspan="2">Break</td></tr>
<tr><td></td><td rowspan="7">Information Operations
in Games</td><td rowspan="7">Strategic, Operational,
and Tactical Games</td></tr>
<tr><td></td><td rowspan="3">Cyber in Games/
Matrix Games</td></tr>
<tr><td>4:00 PM</td></tr>
<tr><td></td></tr>
<tr><td></td></tr>
<tr><td>5:00 PM</td><td rowspan="4">Practicum:
Building Cyber Games</td></tr>
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<tr><td>6:00 PM</td><td></td><td></td><td></td></tr>
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Register: https://www.mors.org/events/courses/gaming-cyber-and-information-operations

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Gaming Weapons of Mass Destruction Course – *From Policy to Practice*

Overview

The MORS Gaming Weapons of Mass Destruction (WMD – defined as Nuclear, Chemical, and Biological agents) will be a three-day course focused on developing and executing games related to WMD in all its forms. While the basics of WMD capabilities and game design will be discussed, this will be a course focused on the intersection of WMD and gaming. It will not be either a WMD or gaming course; for those topics see other offerings.

No prior experience is required for this course, though a basic familiarity with various agents and their effects would be helpful, as would a basic understanding of professional gaming and how it is used. The instructors will adapt in real time to class requirements (e.g., if the class is interested in animal and plant targets, the instructors have extensive experience in designing games on those subjects as well).

Objectives

- Understanding the unique attributes of WMD and how they affect game design, both for games focused on WMD as well as WMD played in other games.
- How to integrate technical data and information into games.
- Games as a tool for response preparedness, both at the tactical and operational level of war.
- Building games on WMD policy, deterrence, as well as countermeasures and response.
- Unique attributes of chemical, biological, or nuclear games including a discussion of the various forms of nuclear games and their application to other agents.

Tuition

Employer	Member	Non-Member
MORS Government Sponsor*	$1,620	$1,680
U.S. Federal Government	$1,680	$1,740
National Research Partner	$1,653	$1,710
All Others	$1,740	$1,800

** MORS Government Sponsor organizations include Center for Army Analysis, HQDA/DCS Program G-8; Marine Corps Combat Development and Integration; Naval Operations, N81; SAF/SA, Studies and Analysis; OSD, A&S; and DHS S&T/OSE/ORA*

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Draft Agenda

Time (Eastern)	Day 1	Day 2	Day 3
10:00 AM	Welcome & Introductions	Adjudication of Engineering and Environmental Factors	WMD Response Operations: Defensive Preparation Games
11:00 AM	The Basics of WMD	Break	
12:00 PM	Lunch	Weapons Effects Estimates	Lunch
1:00 PM	Basics of Game Design & How WMD Affects It	Lunch	WMD Response Operations: Designing Response Games
2:00 PM	Break	Advanced Biological Weapons & How They Factor into Game Design	
3:00 PM	Types of WMD Games		Break
4:00 PM	Break		Design Exercise
5:00 PM	Adjudication & Calculating WMD Effects	Incorporating WMD into “Normal” Games	
6:00 PM	Practical Exercise: Designing a Game with WMD		

Register: https://www.mors.org/events/courses/wmd

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Gaming Emergency Response to Disease Course

Overview

The MORS Gaming Emergency Response to Disease Short Course is a three-day course focused on the application of professional games to problems associated with public health response. It covers pandemic response games—both national and international—as well as the problems of novel and unique organisms, biological warfare and terrorism, mental health, and chronic disease games.

Objectives

Our expert instructors will teach participants how to identify unique and challenging aspects involved in designing games involving all elements of published health response, and provide solutions to these challenges. The course will incorporate current and emerging lessons from the COVID-19 pandemic response.

Tuition

Employer	Member	Non-Member
MORS Government Sponsor*	$1,620	$1,680
U.S. Federal Government	$1,680	$1,740
National Research Partner	$1,653	$1,710
All Others	$1,740	$1,800

** MORS Government Sponsor organizations include Center for Army Analysis, HQDA/DCS Program G-8; Marine Corps Combat Development and Integration; Naval Operations, N81; SAF/SA, Studies and Analysis; OSD, A&S; and DHS S&T/OSE/ORA*

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Draft Agenda

Time (Eastern)	Day 1	Day 2	Day 3
10:00 AM	Welcome	Strategic, Operational, and Tactical Game Examples	Emergency Response Process
11:00 AM	The Problem of Disease Response	PANDEMIC TEMPEST	
12:00 PM	Lunch	Lunch	Lunch
1:00 PM	Game Design Fundamentals	Exercise: Nature or Nurture	Disease and Emergency Response
2:00 PM	Ways to Apply Games to Disease Response		Emergency Response Games
3:00 PM	Break	Break	Break
4:00 PM	Basic Biology and Epidemiology in Games	Matrix Games	Exercise: Building Emergency Response Games
5:00 PM		Exercise: Building a Disease Response Game	Exercise: Practicum and Discussion
6:00 PM			

Register: https://www.mors.org/events/courses/gaming-emergency-response-to-disease

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Lead to Succeed: Strategies for Managing Analytical Teams

Overview

Welcome to “Lead to Succeed: Strategies for Managing Analytical Teams”, an immersive and interactive course designed for both emerging and established leaders. Throughout this course, we will dive deep into the unique challenges and opportunities that accompany the management of analytical teams. We will explore how to foster an environment that encourages critical thinking, innovation, and data-driven decision-making. The curriculum includes a blend of theory and practice, case studies from diverse sectors, real-life examples of successful leadership, and interactive group exercises to ensure the acquired knowledge is immediately applicable.

Objectives

The primary objective of this course is to provide participants with the strategic and practical insights needed to guide high-performing analytical teams effectively. It is perfectly suited to professionals such as data scientists, business intelligence professionals, project managers, and anyone leading or aspiring to lead an analytical team.

- **Understanding the Dynamics of Analytical Teams:** Gain insights into the characteristics of effective analytical teams and the role of leaders in shaping their performance.
- **Communication and Collaboration:** Learn to bridge the communication gap between analytical teams and other departments, facilitating better collaboration and driving a unified business vision.
- **Motivation and Retention:** Develop strategies to motivate your team, manage talent effectively, and reduce turnover.
- **Decision-making:** Learn how to foster a culture of data-driven decision-making and harness your team›s analytical skills to solve complex business problems.
- **Change Management:** Discover how to navigate through technological and organizational changes, ensuring your team stays adaptable and resilient.
- **Ethical Considerations:** Understand the ethical dimensions of managing data and analytical teams, focusing on issues such as data privacy and accuracy.

Tuition

Employer	Member	Non-Member
MORS Government Sponsor*	$450	$550
U.S. Federal Government	$475	$575
National Research Partner	$485	$585
All Others	$500	$600

** MORS Government Sponsor organizations include Center for Army Analysis, HQDA/DCS Program G-8; Marine Corps Combat Development and Integration; Naval Operations, N81; SAF/SA, Studies and Analysis; OSD, A&S; and DHS S&T/OSE/ORA*

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Draft Agenda

Time (Eastern)	Day 1
8:00 AM	Welcome & Introductions
9:00 AM	**Understanding the Dynamics of Analytical Teams** Characteristics The Role of Leaders Creating a Culture of Collaboration & Innovation
10:00 AM	**Communication & Collaboration** Bridging the Communication Gap Driving a Unified Business Vision Using Communication Tools and Technologies Effectively
11:00 AM	**Motivation & Retention** Creating a Positive Work Environment Managing Talent & Reducing Turnover Recognizing & Rewarding Staff
12:00 PM	Lunch
1:00 PM	**Effective Decision-Making** Fostering a Culture of Data-Driven Decision Making Harnessing Your Team's Analytical Skills Making Effective Decisions Under Pressure
2:00 PM	**Change Management** Navigating Technological and Organizational Changes Staying Adaptable and Resilient Communicating Change and Managing Resistance
3:00 PM	**Ethical Considerations** Data Privacy and Accuracy Creating a Culture of Ethical Decision-Making
4:00 PM	Q&A and Wrap-Up

Register: https://www.mors.org/events/courses/lead-to-succeed

Military Operations Research Society
Professional Development

Professional Development

As your professional society, MORS strives to provide our members the resources to meet the challenges of a constantly evolving field. Whether your goal is to stay on top of the latest techniques and information or just trying to find an outlet to learn something new, MORS has a program to fit your needs.

- The annual **MORS Symposium**, **Workshops**, and **Education & Professional Development Colloquium**, offer opportunities to present your work and receive valuable feedback from your peers, as well as the opportunity to hear from experts and participate in small group problem-solving discussions.
- The **MORS Certificate Course Program** and **Tutorials** offer in-depth exploration of skills, techniques and Operations Research disciplines.
- **MORS Communities of Practice** and **Webinars** offer convenient online learning and discussion opportunities.
- The ***Phalanx* Magazine**, ***MOR Journal***, and **MORS Books** offer members an opportunity to publish and read about the latest techniques and developments in operations research.

All MORS programs are run by experts in their field and are designed to reinvigorate your professional development.

Training Bulletin

The MORS Training Bulletin details all of our upcoming events. To view the most current version, join our mailing list, and receive the Bulletin in your email on the first of every month, sign up at https://www.mors.org/Professional-Development.

Military Operations Research Society

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