

# ***STEP UP***

## ***Two-Day Training Program***

A refresher course that is intended for holders of a System Testing Excellence Program certification.

	<u><b>Topic</b></u>		<u><b>Instructor</b></u>
Tues, June 14	AM	Quality Development in the Agile Software Development Environment – Part 1	Dr. Gillenson <sup>1</sup>
	PM	Quality Development in the Agile Software Development Environment – Part 2	Dr. Gillenson <sup>1</sup>
Wed, June 15	AM	Cybersecurity Testing	Dr. Neel <sup>2</sup>
	PM	Quantifying Software Quality ROI	Dr. Poston <sup>3</sup>

<sup>1</sup> Associate Director of STEP, Professor of Business Information & Technology

<sup>2</sup> Associate Professor of Computer Science

<sup>3</sup> Director of STEP, Associate Professor of Business Information & Technology



Systems Testing  
Excellence Program



# ***STEP UP Two-Day Training Program***

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# Course Overview

## DESCRIPTION

This course is designed to provide an in-depth look at the latest advances in systems testing and systems testing management. Keep your skills up to date with our custom created research-based continuing professional development modules covering the latest advances and emerging topics in systems testing.

## OUTLINE AND LEARNING OUTCOMES

### Day 1

#### **Quality Development in the Agile Software Environment – Part 1**

- Introduction to agile software development/testing
  - Generic roles/responsibilities
  - TDD / BDD methods
- Testing Strategy in the agile environment
  - Design for testability
- Types of testing
  - Unit Testing
  - Secure Coding
  - Acceptance Tests
  - Code coverage analysis

#### **Quality Development in the Agile Software Environment – Part 2**

- Team issues in agile testing
- Test automation in the agile environment
- Continuous Integration
- Research findings of agile industry best-practices

### **Day 1 Learning Objectives**

- Understand the generic roles/responsibilities as they relate to agile software development and testing
- Understand testing design strategy in the agile environment
- Define the types of testing
- Understand the team issues in agile testing
- Understand test automation in the agile environment



- Understand continuous integration
- Understand research findings of agile industry best-practices

## **Day 2**

### **Cybersecurity Testing – did not receive much feedback on this one**

- Penetration testing
- Web application security testing
- Risk-based security testing
- Security auditing

### **Quantifying Software Quality ROI – this could be a one day class on performance measurement/metrics**

- Cost of quality challenges
- Automation costs and benefits
- Business views cost of quality
- Calculating return-on-investment
- Performance measures for quality of software

## **Day 2 Learning Outcomes**

- Understand penetration testing
- Understand web application security testing
- Understand risk-based security testing
- Understand security auditing
- Learn the cost of quality challenges
- Identify automation costs and benefits
- Learn how business views cost of quality
- Learn how to calculate return-on-investment
- Understand performance measures for quality of software

## **COST**

The total cost of the course is \$810. Cost includes breakfast, lunch, refreshments and parking.



## Instructor Biographies

### Dr. Mark Gillenson – University of Memphis

Mark L. Gillenson is Professor of Business Information and Technology (formerly MIS) in the Fogelman College of Business and Economics of the University of Memphis in Memphis, TN and he is the Director of the DRONES (Drones, Robotics, and Navigation-Enabled Systems) Research Cluster in the university's FedEx Institute of Technology. He received his B.S. degree in Mathematics from Rensselaer Polytechnic Institute, Troy, N.Y. and his M.S. and Ph.D. degrees in Computer and Information Science from The Ohio State University, Columbus, OH. Dr. Gillenson worked for the IBM Corp. for 15 years in a variety of positions, including seven years as a faculty member of the prestigious IBM Systems Research Institute. Subsequently, he was a professor at the University of Miami, Miami FL. Dr. Gillenson's current areas of interest are "big data", autonomous vehicles, and systems testing. He is an associate editor of the *Journal of Database Management* and of the *Journal of Global Information Technology Management*. Dr. Gillenson's research has appeared in *MIS Quarterly*, *Communications of the ACM*, *Information & Management*, *Methods of Information in Medicine*, and other leading journals. His latest book is *Fundamentals of Database Management Systems*, 2<sup>nd</sup> edition, John Wiley & Sons, 2012. As a graduate student, Dr. Gillenson invented the world's first computerized facial compositor and co-developed an early computer graphics system that, among other things, was used to produce some of the special effects in the first *Star Wars* movie.

### Dr. Andrew Neel – University of Memphis

Andrew Neel, PhD, CISSP holds a PhD in Computer Science from the University of Memphis. He is a Senior Consultant at Discover Financial Services and an Adjunct Professor at the University of Memphis. He was previously the Chief Security Architect at Servicemaster and a Technical Advisor at FedEx. Dr. Neel is an accomplished "Thought Leader" in Information Security capable of communicating to executive leadership as well as individual technical contributors. His specialties include: visionary, leadership, pci, compliance, information security, enterprise architecture, research & development, technical writing, governance, security metrics, extremely complex systems & architectures, secure network design, and perimeter security.



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Dr. Robin Poston – University of Memphis

Dr. Poston is a Research Fellow in the Cluster to Advance Cyber Security & Testing (CAST) program and Director of the System Testing Excellence Program for the FedEx Institute of Technology. She is an Associate Professor of Business Information & Technology at The University of Memphis. Dr. Poston's research focuses on understanding internet-based dissemination of information, spamming of online discussion forums, and systems testing management. Dr. Poston has over 10 years of experience in the information systems field working for KPMG Consulting, Educational Computer Corporation, Meta Group Research, and Convergys, as well as consulting with several Fortune 500 companies and government agencies. Today, she works with local organizations, such as FedEx Corporation, First Horizons, St. Jude/ALSAC, Pinnacle Airlines, Rhodes College, Malaysian Software Testing Board, and the University of Memphis IT Division to conduct projects and educational programs. Select publications include: (2015) "IS Human Capital: Assessing Gaps to Strengthen Skill and Competency Sourcing", Communications of the Association for Information Systems, (2011) "An Empirical Investigation of Client Managers' Responsibilities in Managing Offshore Outsourcing of Software Testing Projects," IEEE Transactions on Engineering Management, (2010) "Online Security Threats and User Intentions: A Model of Computer Protection Motivation," IEEE Software, among others in premier scholarly journals and major conferences.