

King Fahd University of Petroleum & Minerals

Deanship of Educational Services Continuing Education Programs

Short Course

Proposed course title in English: **Software Validation & Verification**

Proposed course title in Arabic: **التوثيق والتثبت (فحص) من البرمجيات**

Brief description in English		Brief description in Arabic	
Practical-oriented study of Verification and Validation throughout the development lifecycle. Techniques for validation and verification. Quality assurance at the requirements and design phases. Software testing at the unit, module, subsystem, and system levels. Automatic and manual techniques for generating and validating test data. Testing process: static vs. dynamic analysis, functional testing, inspections, and reliability assessment.		دراسة عملية للتحقق والتثبت في جميع مراحل دورة حياة البرمجيات. طرق المصادقة والتحقق. ضمان الجودة في مراحل المتطلبات والتصميم. اختبار البرمجيات على مستوى الوحدة والنظام الجزئي والنظام. الطرق الآلية واليدوية لتوليد واختبار حالات التحقق من صحة البيانات. مراحل الاختبار: الثابتة والديناميكية، الاختبارات الوظيفية، وعمليات التفتيش، وتقييم الموثوقية.	
Date and Time – Gregorian		Date and Time – Hijri	
23-27 February, 2013		13-17 Raby` al-THaany, 1434	
Department		Language	
Information and Computer Science		English	
Course fee	Course duration	Course location	
7,000 SR	5 Full Days	Building 54	

Who should attend?

This course is targeted to benefit software analysts, designers, developers, quality engineers, and project leaders and managers.

Detailed course description:

The goal of this course is to introduce state-of-the-art concepts, methods, and tools that can be employed to allow successful software V&V and QA at the different development phases and to a variety of software artifacts. By the end of the course, each participant is expected to:

- Have deep understanding of the quality management process along with the role of quality models, metrics, and standards.
- Be able to validate and verify requirements artifacts.
- Be able to evaluate and compare different designs for given problems
- Be able to use program inspection processes for implementation V & V
- Be able to apply static analysis as a verification technique
- Understand the principles of system and component testing
- Be able to apply strategies for generating test cases
- Understand the essential characteristics of tool used for test automation

Course outline/topics:

1. Quality Management Process
2. Quality Models
3. Software Measurement and Metrics
4. Automated Static Analysis
5. Software Testing
6. Automated V&V

Name and designation of instructors:

Name	Designation
1. Dr. Moataz Ahmed	Associate Professor, ICS Department
2. Dr. Mohammad Alshayeb, PMP	Assistant Professor, ICS department
3. Dr. Jameledine Hassine	Assistant Professor, ICS department
4. Dr. Mahmoud Elish	Assistant Professor, ICS department
5. Dr. Mohammed El-Attar	Assistant Professor, ICS department
6. Mr. Irfan Ahmed	Lecturer, ICS department

Name and specialization of visiting instructor(s) (if any):

1.
2.

Course special arrangements (if any):

This course requires the use of Software Engineering lab with Rational Rose or Enterprise Architect and JUnit.

Coordinator Information

Name	Contact Tel. Nos.: & Fax No.	E-mail Address
Dr. Moataz Ahmed	Tel: 860-2763 Fax: 860-2174	moataz@kfupm.edu.sa