

IBM/ACM Curriculum Mapping Guide

This guide lists the computer science and software engineering courses recommended by the Association for Computing Machinery (ACM), and shows the open source, IBM technologies and courseware that relate to them. Faculty members at accredited institutions can obtain the IBM technologies and courseware referenced in this guide, at no charge, when they join the IBM Academic Initiative (www.ibm.com/university).

Skills in Demand by IBM: (as of July 2006)

Areas recognized by IBM's talent and recruiting organizations as being "hot skills" include:

- Service-Oriented Architecture (SOA) consultants
- Model-Driven Development (MDD)
- Services Science, Management & Engineering (SSME)
- Information Security
- Radio Frequency Identification (RFID)

You can find more information and other resources related to these skills at the IBM Academic Initiative web site, www.ibm.com/university.

Key: To save space, we have abbreviated the names of the IBM products and open source technologies. Please be sure to use the full legal names in all of your own communications.

IBM	DB2 UDB – DB2 Universal Database	WBM – WebSphere Business Modeler
	RAD – Rational Application Developer	WCD – WebSphere Commerce Developer
	RCC – Rational ClearCase	WCM – Web Content Management
	RCQ – Rational ClearQuest	WDSC – WebSphere Developer Studio Client
	RDA – Rational Data Architect	WDz – WebSphere Developer for Series z
	RSM – Rational Software Modeler	WID – WebSphere Integration Developer
	RUP – Rational Unified Platform	WPS – WebSphere Portal Server
	RWD – Rational Web Developer	WSAA – WebSphere Studio Asset Analyzer
	RT - RealTime	WS-BPEL – Web Services-Business Process Execution Language
	Rational SoDA – Software development Document Automation	WSII – WebSphere Information Integrator
aW – alphaWorks http://www.alphaworks.ibm.com/	dW – developerWorks http://www-128.ibm.com/developerworks/	
Open Source	BPEL – Business Process Execution Language	PHP – Perl Hypertext PreProcessor
	CVS – Concurrent Versions System	SCA – Service Component Architecture
	EPF – Enterprise Process Framework	SCE – Scalable Cluster Environment
	GEF – Graphical Editing Framework	SOA – Service-Oriented Architecture
	ITIL – IT Infrastructure Library	SQL – Structured Query Language
	JDBC – Java Database Connectivity	WTP – Eclipse Web Tool Platform
	JSF – JavaServer Faces	XML – Extensible Markup Language

ACM Recommended Course	Open Source Technologies	IBM Technologies	Courseware Available from IBM Academic Initiative Web Site (http://www.ibm.com/university)
Programming Fundamentals	Eclipse, Linux, Java	RAD, RWD	<ul style="list-style-type: none"> - Java Fundamentals Using Eclipse - Introduction to Java using IBM Rational Application Developer V6
The Object-Oriented Paradigm	Eclipse, Java, ArgoUML*	RAD, RSM	<ul style="list-style-type: none"> - Essentials of Visual Modeling with UML 2.0 - Introduction to Java using IBM Rational Application Developer V6 - Essentials of Rational Application Developer for WebSphere Software - Essentials of Rational Software Architect - Java Fundamentals Using Eclipse - Introduction to XML and Related Technologies - Introduction to Programming XML and Related Technologies - Object Oriented Design Using PONG
Data Structures and Algorithms	Eclipse, XML	RAD	<ul style="list-style-type: none"> - Rational Software Architect Workshop - Essentials of Visual Modeling with UML 2.0 - Introduction to XML and Related Technologies
Introduction to Programming	Eclipse, Java	RAD, RWD, RSM	<ul style="list-style-type: none"> - Introduction to Java using IBM Rational Application Developer V6 - Java Fundamentals Using Eclipse - Rational Unified Process Made Easy - A Practitioner's Guide to RUP
Data Abstraction	Eclipse	RAD, RWD	<ul style="list-style-type: none"> - Java Fundamentals Using Eclipse - Introduction to Java using IBM Rational Application Developer V6 - Essentials of Rational Application Developer for WebSphere Software

ACM Recommended Course	Open Source Technologies	IBM Technologies	Courseware Available from IBM Academic Initiative Web Site (http://www.ibm.com/university)
Introduction to the World-Wide Web	Apache,Eclipse Geronimo, WTP, PHP	RAD,RWD	<ul style="list-style-type: none"> - IBM WebSphere Application Server V6 Administration - Essentials of Rational Application Developer for WebSphere Software - Developing Web Applications with IBM Rational Application Developer V6 - Servlet and JSP Development with IBM Rational Application Developer V6 - Developing EJBs with IBM Rational Application Developer V6 - IBM WebSphere Commerce V5.6 Implementation
Computer Architecture	N/A	IBM eServers, Cell Technology	<ul style="list-style-type: none"> - Access the complete and most current Series z and Series i curriculum on the Academic Initiative web site, as well as educational materials related to Cell Technology
Architecture and Operating Systems	Linux	Grid, AIX, z/OS, OS/400, Cell Technology	<ul style="list-style-type: none"> - Access the complete and most current Series z and Series i curriculum on the Academic Initiative web site, as well as educational materials related to Cell Technology
Architectures for Networking and Communication	N/A	Tivoli	<ul style="list-style-type: none"> - IBM Tivoli Access Mgr for e-business 5.1 Architecture & Sol Design
Operating Systems	Linux	AIX, z/OS, OS/400	<ul style="list-style-type: none"> - Access the complete and most current Series z and Series i curriculum on the Academic Initiative web site
Operating Systems and Networking	Linux	AIX, z/OS, OS/400, Tivoli	<ul style="list-style-type: none"> - IBM Tivoli Provisioning Manager and Intelligent Orchestrator 2.1 Administration - IBM Tivoli Provisioning Manager and Intelligent Orchestrator 2.1 Workflows and Automation Packages - IBM Tivoli Storage Manager 5.2 Implementation - IBM Tivoli Storage Manager 5.2 Total Integration - IBM Tivoli Storage Manager 5.2 Update and Migration Topics

ACM Recommended Course	OpenSource Technologies	IBM Technologies	Courseware Available from IBM Academic Initiative Web Site (http://www.ibm.com/university)
Programming Language Translation	Eclipse JET	RAD	<ul style="list-style-type: none"> - Essentials of Rational Application Developer for WebSphere Software - IBM WebSphere Application Server V6 Administration - Developing Web Applications with IBM Rational Application Developer V6 - Servlet and JSP Development with IBM Rational Application Developer V6 - Developing EJBs with IBM Rational Application Developer V6
Human-Computer Interaction	N/A	Portal Server, RAD	<ul style="list-style-type: none"> - Essentials of Rational Application Developer for WebSphere Software - IBM WebSphere Portal V 5.0 (Admin, App Dev, Install/Deploy)
Information and Knowledge Management	Derby, SQL, JDBC	Cloudscape, WSII, WCM, Notes/Domino, Workplace, UDB family, Informix, RDA	<ul style="list-style-type: none"> - Information Management Basics - Introduction to Business Intelligence and Data Warehousing - Cloudscape Detective Game available at www.ibm.com/university - DB2 Detective Game available at www.ibm.com/university
Databases	Derby, SQL, JDBC	Cloudscape, WSII, WCM, Notes/Domino, Workplace, UDB family, Informix, RDA	<ul style="list-style-type: none"> - Cloudscape Detective Game available at www.ibm.com/university - DB2 Detective Game available at www.ibm.com/university - Introduction to IBM DB2 Universal Database - DB2 Family Fundamentals - DB2 Universal Database Programming Fundamentals - DB2 Universal Database Programming using Java for Linux, Unix, Windows - DB2 SQL Workshop - SQL Fundamentals for IBM DB2 - SQL & Database basics (Japanese)

ACM Recommended Course	Open Source Technologies	IBM Technologies	Courseware Available from IBM Academic Initiative Web Site (http://www.ibm.com/university)
Information Management	Derby, SQL, JDBC	Cloudscape, WSII, WCM, Notes / Domino, Workplace, UDB family, Informix, RDA	<ul style="list-style-type: none"> - Information Management Basics - Introduction to Business Intelligence and Data Warehousing - Cloudscape Detective Game available at www.ibm.com/university - DB2 Detective Game available at www.ibm.com/university
Social and Professional Issues	SourceForge (open source community)	dW, aW	<p>http://www.ibm.com/developerworks, http://www.alphaworks.ibm.com</p> <p>developerWorks and alphaWorks connections</p>
Software Development	Eclipse, J2EE, CVS, EPF	RSA family, ReqPro, ClearCase, ClearQuest, Purify, ManualTester, Performance Tester, RUP, WID, WBM, WDZ, FunctionalTester	<ul style="list-style-type: none"> - Essentials of Visual Modeling with UML 2.0 - Principles of Software Testing for Testers - Essentials of Rational Unified Process - Essentials of Rational Software Architect - Essentials of Rational Application Developer for WebSphere Software - Rational Unified Process Made Easy - A Practitioner's Guide to RUP - Advanced Features of IBM WebSphere Business Modeler - Introduction to WebSphere BI Modeler
Software Development and Systems Programming	Eclipse, J2EE, CVS, EPF	RSA family, ReqPro, ClearCase, ClearQuest, Purify, ManualTester, Performance Tester, RUP, WID, WBM, WDZ, Functional Tester, Cell Broadband Eng	<ul style="list-style-type: none"> - Essentials of Visual Modeling with UML 2.0 - Advanced Features of IBM WebSphere Business Modeler - Introduction to WebSphere BI Modeler - Principles of Software Testing for Testers - Essentials of Rational Unified Process - Essentials of Rational Software Architect - Essentials of Rational Application Developer for WebSphere Software - Rational Unified Process Made Easy - A Practitioner's Guide to RUP - For Cell Courseware, link to IBM's Education Assistant and consider the self-paced course on Cell Broadband Engine. Link is: http://publib.boulder.ibm.com/infocenter/ieduasst/stgv1r0/index.jsp

ACM Recommended Course	Open Source Technologies	IBM Technologies	Courseware Available from IBM Academic Initiative Web Site (http://www.ibm.com/university)
Software Development and Professional Practice	Eclipse, J2EE, CVS, EPF	RSA family, ReqPro, ClearCase, ClearQuest, Purify, ManualTester, Performance Tester, RUP, WID, WBM, WDZ, Functional Tester	<ul style="list-style-type: none"> - Principles of Project Management - Rational Unified Process Made Easy - A Practitioner's Guide to RUP - Essentials of Rational Unified Process - Essentials of Visual Modeling with UML 2.0 - Advanced Features of IBM WebSphere Business Modeler - Introduction to WebSphere BI Modeler - Principles of Software Testing for Testers - Essentials of Rational Software Architect - Essentials of Rational Application Developer for WebSphere Software
Engineering Economics	EPF	RUP	<ul style="list-style-type: none"> - Rational Unified Process Made Easy - A Practitioner's Guide to RUP - Essentials of Rational Unified Process
Group Dynamics and Communication	Wiki	SoDA, Quickplace, Sametime	<ul style="list-style-type: none"> - Maximizing your Productivity with Lotus Notes - Exploring New Features of Lotus Notes
Professional Software Engineering Practice	EPF	RUP	<ul style="list-style-type: none"> - Rational Unified Process Made Easy - A Practitioner's Guide to RUP - Essentials of Rational Unified Process - Principles of Project Management - Rational Unified Process Made Easy - A Practitioner's Guide to RUP - Essentials of Rational Unified Process - Essentials of Visual Modeling with UML 2.0 - Advanced Features of IBM WebSphere Business Modeler - Introduction to WebSphere BI Modeler - Principles of Software Testing for Testers - Essentials of Rational Software Architect - Essentials of Rational Application Developer for WebSphere Software

ACM Recommended Course	OpenSource Technologies	IBM Technologies	Courseware Available from IBM Academic Initiative Web Site (http://www.ibm.com/university)
Introduction to Software Engineering and Computing	Eclipse, Derby, Geronimo	DB2 UDB Family, Rational Family	<ul style="list-style-type: none"> - Principles of Project Management - Rational Unified Process Made Easy - A Practitioner's Guide to RUP - Essentials of Rational Unified Process - Essentials of Visual Modeling with UML 2.0 - Advanced Features of IBM WebSphere Business Modeler - Introduction to WebSphere BI Modeler - Principles of Software Testing for Testers - Essentials of Rational Software Architect - Essentials of Rational Application Developer for WebSphere Software - DB2 Family Fundamentals - Relational Database Design - Introduction to IBM DB2 Universal Database - DB2 SQL Workshop
Software Engineering and Computing II	Eclipse, Derby, Geronimo	DB2 UDB Family, Rational Family,	<ul style="list-style-type: none"> - Principles of Project Management - Rational Unified Process Made Easy - A Practitioner's Guide to RUP - Essentials of Rational Unified Process - Essentials of Visual Modeling with UML 2.0 - Advanced Features of IBM WebSphere Business Modeler - Introduction to WebSphere BI Modeler - Principles of Software Testing for Testers - Essentials of Rational Software Architect - Essentials of Rational Application Developer for WebSphere Software - Relational Database Design - DB2 SQL Workshop for Experienced Users
Software Engineering and Computing III	Eclipse, Derby, Geronimo	DB2 UDB Family, Rational Family	<ul style="list-style-type: none"> - Principles of Project Management - Rational Unified Process Made Easy - A Practitioner's Guide to RUP - Essentials of Rational Unified Process - Essentials of Visual Modeling with UML 2.0 - Advanced Features of IBM WebSphere Business Modeler - Introduction to WebSphere BI Modeler - Principles of Software Testing for Testers - Essentials of Rational Software Architect - Essentials of Rational Application Developer for WebSphere Software - Relational Database Design - DB2 SQL Workshop for Experienced Users

ACM Recommended Course	OpenSource Technologies	IBM Technologies	Courseware Available from IBM Academic Initiative Web Site (http://www.ibm.com/university)
Software Construction	Eclipse	DB2 UDB Family, Rational Family	<ul style="list-style-type: none"> - Principles of Project Management - Rational Unified Process Made Easy - A Practitioner's Guide to RUP - Essentials of Rational Unified Process - Essentials of Visual Modeling with UML 2.0 - Advanced Features of IBM WebSphere Business Modeler - Introduction to WebSphere BI Modeler - Principles of Software Testing for Testers - Essentials of Rational Software Architect - Essentials of Rational Application Developer for WebSphere Software - DB2 Family Fundamentals - Relational Database Design - Introduction to IBM DB2 Universal Database - DB2 SQL Workshop - DB2 SQL Workshop for Experienced Users
Software Engineering Approach to Human Computer Interaction	GEF, Eclipse, EPF	Portal Server, RAD, RUP	<ul style="list-style-type: none"> - Principles of Project Management - Rational Unified Process Made Easy - A Practitioner's Guide to RUP - Essentials of Rational Unified Process - Essentials of Visual Modeling with UML 2.0 - Advanced Features of IBM WebSphere Business Modeler - Introduction to WebSphere BI Modeler - Principles of Software Testing for Testers - Essentials of Rational Software Architect - Essentials of Rational Application Developer for WebSphere Software
Design and Architecture of Large Software Systems	Eclipse, Struts, JSF, J2EE, SOA, SCA, BPEL	WAS, WPS, Rational Family, WDZ, WSAA, WSDC	<ul style="list-style-type: none"> - IBM WebSphere Application Server V6.0 Administration - Rational Unified Process Made Easy - A Practitioner's Guide to RUP - Essentials of Rational Unified Process - Essentials of Visual Modeling with UML 2.0 - Advanced Features of IBM WebSphere Business Modeler - Introduction to WebSphere BI Modeler - Principles of Software Testing for Testers - Essentials of Rational Software Architect - Essentials of Rational Application Developer for WebSphere Software

ACM Recommended Course	OpenSource Technologies	IBM Technologies	Courseware Available from IBM Academic Initiative Web Site (http://www.ibm.com/university)
Software Testing	Eclipse, JUnit	ManualTester, Performance Tester, TestManager, FunctionalTester, RAD	<ul style="list-style-type: none"> - Principles of Software Testing for Testers - Rational Unified Process Made Easy - A Practitioner's Guide to RUP - Essentials of Rational Unified Process
Software Design and Architecture	Eclipse, Struts, JSF, J2EE, SOA, SCA, WS-*, BPEL	WAS, WPS, Rational Family, WDZ, WSAA, ATW, WSDC	<ul style="list-style-type: none"> - Rational - Mastering Requirements Management with Use Cases - IBM WebSphere Application Server V6.0 Administration - Rational Unified Process Made Easy - A Practitioner's Guide to RUP - Essentials of Rational Unified Process - Essentials of Visual Modeling with UML 2.0 - Advanced Features of IBM WebSphere Business Modeler - Introduction to WebSphere BI Modeler - Principles of Software Testing for Testers - Essentials of Rational Software Architect - Essentials of Rational Application Developer for WebSphere Software
Low-Level Design of Software	Eclipse	RAD, Rose RT, RSA	<ul style="list-style-type: none"> - Principles of Project Management - Rational Unified Process Made Easy - A Practitioner's Guide to RUP - Essentials of Rational Unified Process - Essentials of Visual Modeling with UML 2.0 - Advanced Features of IBM WebSphere Business Modeler - Introduction to WebSphere BI Modeler - Principles of Software Testing for Testers - Essentials of Rational Software Architect - Essentials of Rational Application Developer for WebSphere Software
Software Quality Assurance	Eclipse, JUnit	Rational ManualTester, Performance Tester, TestManager, FunctionalTester, RAD, ProjectConsole	<ul style="list-style-type: none"> - Rational Unified Process Made Easy - A Practitioner's Guide to RUP - Essentials of Rational Unified Process - Principles of Software Testing for Testers - Essentials of Rational Software Architect - Essentials of Rational Application Developer for WebSphere Software

ACM Recommended Course	OpenSource Technologies	IBM Technologies	Courseware Available from IBM Academic Initiative Web Site (http://www.ibm.com/university)
Software Requirements Analysis	EPF	WBM, RSA, RUP	<ul style="list-style-type: none"> - Rational Unified Process Made Easy - A Practitioner's Guide to RUP - Essentials of Rational Unified Process - Essentials of Visual Modeling with UML 2.0 - Advanced Features of IBM WebSphere Business Modeler - Introduction to WebSphere BI Modeler - Essentials of Rational Software Architect - Essentials of Rational Application Developer for WebSphere Software
Software Project Management	EPF, CVS	RPM, RUP, RCC, CRQ	<ul style="list-style-type: none"> - Principles of Project Management (N2650) - Rational Unified Process Made Easy - A Practitioner's Guide to RUP - Essentials of Rational Unified Process
Software Process and Management	EPF, CVS	RPM, RUP, RCC, RCQ	<ul style="list-style-type: none"> - Principles of Project Management - Rational Unified Process Made Easy - A Practitioner's Guide to RUP - Essentials of Rational Unified Process - Essentials of Visual Modeling with UML 2.0 - Advanced Features of IBM WebSphere Business Modeler - Introduction to WebSphere BI Modeler - Principles of Software Testing for Testers - Essentials of Rational Software Architect - Essentials of Rational Application Developer for WebSphere Software
Software Engineering Capstone Project	Eclipse, Derby, Geronimo	Rational Family, Patterns for e-business, dW, aW	<ul style="list-style-type: none"> - Principles of Project Management - Rational Unified Process Made Easy - A Practitioner's Guide to RUP - Essentials of Rational Unified Process - Essentials of Visual Modeling with UML 2.0 - Advanced Features of IBM WebSphere Business Modeler - Introduction to WebSphere BI Modeler - Principles of Software Testing for Testers - Essentials of Rational Software Architect - Essentials of Rational Application Developer for WebSphere Software

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Personal Productivity with IS Technology	N/A	N/A	- Maximizing Your Productivity with Lotus Notes
Fundamentals of Information Systems	N/A	WBM, RSM	<ul style="list-style-type: none"> - Essentials of Visual Modeling with UML 2.0 - Advanced Features of IBM WebSphere Business Modeler - Introduction to WebSphere BI Modeler - Principles of Software Testing for Testers - Essentials of Rational Software Architect - Essentials of Rational Application Developer for WebSphere Software
Electronic Business Strategy, Architecture and Design	ITIL	WBM, Tivoli Prism	<ul style="list-style-type: none"> - Selling Solutions for On Demand Business - The Solution Designer's Guide to IBM On Demand Business Solutions - e-business Technology Fundamentals - e-business Technology Workshop
Information Systems Theory and Practice	N/A	WBM	<ul style="list-style-type: none"> - Essentials of Visual Modeling with UML 2.0 - Advanced Features of IBM WebSphere Business Modeler - Introduction to WebSphere BI Modeler
Information Technology Hardware and System Software	Linux	AIX, OS/400, z/OS, eServer Family, Cell Technology	- Access the complete and most current zSeries and iSeries curriculum on the Academic Initiative web site, as well as educational materials related to Cell Technology

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Analysis and Logical Design	N/A	DB2 UDB Family	<ul style="list-style-type: none"> - DB2 Family Fundamentals - Relational Database Design - Introduction to IBM DB2 Universal Database - DB2 SQL Workshop - DB2 SQL Workshop for Experienced Users
Physical Design and Implementation with DBMS	N/A	DB2 UDB Family, Cloudscape	<ul style="list-style-type: none"> - DB2 Family Fundamentals - Relational Database Design - Introduction to IBM DB2 Universal Database - DB2 SQL Workshop - DB2 SQL Workshop for Experienced Users
Physical Design and Implementation in Emerging Environments	J2EE, SCA, EPF	WAS, WPS, eServer family	- Access the complete and most current zSeries and iSeries curriculum on the Academic Initiative web site http://ibm.com/university
Project Management and Practice	EPF	RUP, Portfolio Manager	- Principles of Project Management

Certifications for many IBM technologies are available at a 50% discount to faculty and students. For more information, go to <http://www.ibm.com/university/certification>