

U.S. Department of Labor Employment and Training Administration Office of Apprenticeship Training, Employer and Labor Services (OATELS) Washington, D.C. 20210	<u>Distribution:</u>  A-541 Headquarters A-544 All Field Tech A-547 SD+RD+SAC+; Lab.Com	<u>Subject:</u> New Apprenticeable Occupation E-Commerce Specialist  <u>Code:</u> 200
Symbols: DSNIP/FDK		Action: Immediate

**PURPOSE:** To transmit to the Office of Apprenticeship Training, Employer and Labor Services (OATELS), Bureau of Apprenticeship and Training (BAT) Staff the recognition of a new apprenticeable occupation:

E-Commerce Specialist  
O\*NET/SOC Code: 15-1099.99  
RAIS Code: 1054  
Training Term: 4000  
Type of Training: Competency - based

**BACKGROUND:** The Computing Technology Industry Association (CompTIA) initiated the apprenticeability request for this occupation. The OATELS Administrator approved the E-Commerce Specialist as a new apprenticeable occupation on May 28, 2003.

A suggested work process schedule and related instruction outline is attached for your information.

The E-Commerce Specialist occupation will be added to the list of occupations recognized as apprenticeable by OATELS when the list is reissued.

**ACTION:** OATELS staff should familiarize themselves with this new occupation.

If you have any additional questions please contact at 202-693-3813.

Attachment

**WORK PROCESSES**  
**E-Commerce Specialist**

O\*Net Code: 15-1099.99 RAIS Code: 1054

**DESCRIPTION:** Responsible for standards, technologies and practices for both business-to-business and business-to-commerce models. Understands and facilitates complex relationships among marketing, promotion, customer service, user interaction, purchasing methods and secure transactions. Oversees site performance testing and evaluation. Works in an unsupervised environment within policies and procedures. Typically reports to senior management.

**ECS-1 Year One Breakdown**

1. Develop and apply e-Commerce marketing goals.
2. Develop, test, troubleshoot and manage e-Commerce web site.
3. Formulate an electronic service action plan.
4. Define the organization's role in e-Commerce.

**TOTAL HOURS = 2000 hours**

Assists with standards, technologies and practices for both business-to-business and business-to-consumer e-commerce models. Has a basic understanding of relationships among marketing, promotion, customer service, user interaction, purchasing methods, and secure transactions by using payment gateways, inventory control, shipping and order information. Performs site performance testing and evaluation. Works primarily in teams with higher-level specialists.

**Skills**

Ability to sell ones ideas	Online check processing
Applying customer relationship management methods to e-service methods	Proficient with one or more office productivity packages
Business acumen	Referral program usage
Configuration and use of payment gateways	Relies on instructions to perform job functions
Creating property and product definitions	Search engine replacement service usage
Familiarity with a variety of office machines	Self-motivated
Listening	Significant level of computer expertise required
Works well on a team	Viewing transaction log files

**Knowledge**

1-2 years experience in the field or a related area preferred	Understands customer relationship management (CRM)
Knowledge of Electronic Data Interchange (EDI)	Understands data and systems security issues
Knowledge of one or more script development tools	Understands data modeling tools and techniques
Knowledge of one or more web software application development tools	Understands impetus for web commerce
Knowledge of various e-Commerce solutions	Understands Internet architecture model
Knows Internet access options and costs	Understands Internet, Intranet and Web concepts
May require a Bachelor's Degree	Understands legal issues around e-Commerce
May require a technical certification	Understands MMC and IIS configurations
Understands all standard concepts, practices and procedures in the field	Understands network security issues and solutions
Understands browsers	Understands payment gateways
Understands components of a web storefront	Understands server concepts
Understands computer systems basics, hardware and software	Understands SSL and SET
Understands transaction security issues	Understands various client-server configurations
Understands VeriSign type account concepts	

### ECS-2 Year Two Breakdown

1. Generate certificate requests to certificate authority.
2. Identify components of e-Commerce security.
3. Install and customize e-Commerce product catalogs.
4. Generate processing reports.

### **TOTAL HOURS = 2000 hours**

Focuses on standards, technologies and practices for both business-to-business and business-to-consumer e-commerce models. Understands relationships among marketing, promotion, customer service, user interaction, purchasing methods, and secure transactions by using payment gateways, inventory control, shipping and order information. Manages site performance testing and evaluation and recommends solutions. Works on assignments in a largely unsupervised environment. Follows policies and procedures. Typically reports to a manager.

#### **Skills**

Ability to sell ones ideas	Online check processing
Applying customer relationship management methods to e-service methods	Proficient with one or more office productivity packages
Business acumen	Referral program usage
Configuration and use of payment gateways	Relies on instructions to perform job functions
Creating property and product definitions	Search engine replacement service usage
Familiarity with a variety of office machines	Self-motivated
Listening	Significant level of computer expertise required
Works well on a team	Viewing transaction log files
Installing and configuring web site application development software	Installing e-Commerce servers

#### **Knowledge**

2-4 years experience in the field or a related area preferred	Understands customer relationship management (CRM)
Knowledge of Electronic Data Interchange (EDI)	Understands data and systems security issues
Knowledge of one or more script development tools	Understands data modeling tools and techniques
Knowledge of one or more web software application development tools	Understands impetus for web commerce
Knowledge of various e-Commerce solutions	Understands Internet architecture model
Knows Internet access options and costs	Understands Internet, Intranet and Web concepts
Requires a Bachelor's Degree or Higher	Understands legal issues around e-Commerce
May require a technical certification	Understands MMC and IIS configurations
Understands all standard concepts, practices and procedures in the field	Understands network security issues and solutions
Understands browsers	Understands payment gateways
Understands components of a web storefront	Understands server concepts
Understands computer systems basics, hardware and software	Understands SSL and SET
Understands transaction security issues	Understands various client-server configurations
Understands VeriSign type account concepts	

**ECS-3 Year Three Breakdown**

1. Create virtual directories and servers.
2. Customize navigation images.
3. Install and manage a payment flow system.
4. Install and verify payment gateway for transaction processing.

**TOTAL HOURS = 2000 hours**

Responsible for standards, technologies and practices for both business-to-business and business-to-consumer e-commerce models. Understands and facilitates complex relationships among marketing, promotion, customer service, user interaction, purchasing methods, and secure transactions. Oversees site performance testing and evaluation. Works in an unsupervised environment within policies and procedures. Typically reports to senior management.

**Skills**

Ability to sell ones ideas	Online check processing
Applying customer relationship management methods to e-service methods	Proficient with one or more office productivity packages
Business acumen	Referral program usage
Configuration and use of payment gateways	Relies on instructions to perform job functions
Creating property and product definitions	Search engine replacement service usage
Familiarity with a variety of office machines	Self-motivated
Listening	Significant level of computer expertise required
Works well on a team	Viewing transaction log files
Installing and configuring web site application development software	Installing e-Commerce servers

**Knowledge**

4+ years experience in the field or a related area preferred	Understands customer relationship management (CRM)
Knowledge of Electronic Data Interchange (EDI)	Understands data and systems security issues
Knowledge of one or more script development tools	Understands data modeling tools and techniques
Knowledge of one or more web software application development tools	Understands impetus for web commerce
Knowledge of various e-Commerce solutions	Understands Internet architecture model
Knows Internet access options and costs	Understands Internet, Intranet and Web concepts
Requires a Bachelor's Degree or Higher	Understands legal issues around e-Commerce
May require a technical certification	Understands MMC and IIS configurations
Understands all standard concepts, practices and procedures in the field	Understands network security issues and solutions
Understands browsers	Understands payment gateways
Understands components of a web storefront	Understands server concepts
Understands computer systems basics, hardware and software	Understands SSL and SET
Understands transaction security issues	Understands various client-server configurations
Understands VeriSign type account concepts	Understands business to business (B-B)
Understands business to consumer (B-C)	Understands certificate authority process

**TOTAL HOURS**

**6000**

**RELATED INSTRUCTION SCHEDULE  
YEAR ONE**

<b>DOMAIN 1.0: Fundamentals</b>			<b>%</b>	<b>Planned Classroom Hrs</b>
<b>1.1 Identify and understand fundamental terms and concepts used in e-Business.</b>				
<ul style="list-style-type: none"> <li>• WWW &amp; HTTP</li> <li>• HTML &amp; XML</li> <li>• URL (Uniform Resource Locator)</li> <li>• Internet, Intranet, Extranet</li> <li>• ISP (Internet Service Provider)</li> <li>• ASP (Application Service Provider)</li> <li>• Information Service Providers</li> <li>• Client/server computing</li> <li>• How a browser works</li> </ul>	<ul style="list-style-type: none"> <li>• Portals</li> <li>• SET (Secure Electronic Transactions)</li> <li>• EFT (Electronic Funds Transfer)</li> <li>• EBT (Electronic Benefits Transfer)</li> <li>• EDI (Electronic Data Interchange)</li> <li>• VPN (Virtual Private Network )</li> <li>• Networking / Bandwidth</li> <li>• Middleware</li> </ul>	<ul style="list-style-type: none"> <li>• CGI (Common Gateway Interface)</li> <li>• Fat/Thin clients</li> <li>• Protocol</li> <li>• Communication standards and protocols</li> <li>• SSL (Secure Socket Layer)</li> <li>• Firewall</li> <li>• Directory services (middleware that locates full network addresses)</li> <li>• Data warehousing/ Datamining</li> </ul>		<b>10 hours</b>
<b>1.2 Recognize and explain the current types of e-Business models being applied today and contrast them to past business models and the history of e-Business.</b>				
<ul style="list-style-type: none"> <li>• e-Business definitions</li> <li>• General business definitions (for example: business process modeling, re-engineering)</li> <li>• e-Commerce</li> <li>• Business-to-business models</li> <li>• Business-to-consumer models</li> <li>• Business-to-employee models</li> </ul>	<ul style="list-style-type: none"> <li>• Business to government</li> <li>• Consumer-to-business</li> <li>• Consumer-to-consumer</li> <li>• e-Business history</li> <li>• Obsolete business models</li> <li>• EDI (Electronic Data Interchange)</li> <li>• Storefront (bricks &amp; mortars) vs. e-Business</li> </ul>	<ul style="list-style-type: none"> <li>• New and changing customer expectations</li> <li>• Customer relationship management re-engineering</li> <li>• Supply chain re-engineering</li> <li>• Advertising</li> <li>• e-Business and the Internet</li> <li>• Meta-aggregator (aggregator)</li> </ul>		<b>50 hours</b>
<b>1.3 Recognize the evolution of e-Business, best practices and processes demonstrated by e-Business leaders.</b>				
<ul style="list-style-type: none"> <li>• Collaborative initiatives</li> </ul>	<ul style="list-style-type: none"> <li>• Consumerism</li> </ul>	<ul style="list-style-type: none"> <li>• Industry leaders/Case studies</li> </ul>		<b>10 hours</b>

**RELATED INSTRUCTION SCHEDULE  
YEAR ONE (Continued)**

<b>DOMAIN 2.0: Strategy and Planning</b>			%	Planned Classroom Hrs
<b>2.1 Recognize the important strategic planning factors to be considered when launching e-Business initiatives.</b>				
<ul style="list-style-type: none"> <li>• Business strategies, objectives and requirements</li> <li>• SWOT analysis (strengths, weaknesses, opportunities, threats of doing or not doing e-Business)</li> <li>• Defining strategic partners, both internal and external (for example: business/project sponsors, vendors, development partners, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>• Cost-Benefit of engaging in e-Business</li> <li>• Sizing of the effort</li> <li>• Outsourcing</li> <li>• Build or buy</li> <li>• Pricing strategy/flexible pricing</li> <li>• Knowledge management (business intelligence about customers, suppliers, competitors and components)</li> <li>• Project team composition (E-team)</li> </ul>	<ul style="list-style-type: none"> <li>• e-Business revenue models (for example: e-Commerce site, subscription service, advertising revenue, etc.)</li> <li>• ROI (Return on Investment)</li> <li>• Infrastructure management</li> <li>• Communicating the strategy</li> <li>• Planning for maintenance (maintenance in a 24x7 environment)</li> <li>• Life -cycle analysis and product release</li> </ul>	<b>40 hours</b>	
<b>2.2 Recognize key factors relating to strategic marketing considerations as they relate to launching an e-Business initiative.</b>				
<ul style="list-style-type: none"> <li>• Media used</li> <li>• Branding</li> <li>• How do you differentiate and position yourself from competitors</li> <li>• Understanding marketing segments: Generation "X" - different demographics; gender; seniors; boomers; children; adolescents</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding consumers, including: suppliers, vendors, customers, employees, buyers, etc.</li> <li>• 1 to 1 Marketing (a market of one)</li> <li>• Push/Pull capabilities</li> <li>• Customer centric</li> </ul>	<ul style="list-style-type: none"> <li>• Profiling customers</li> <li>• Delivery/Presentation/Communication style</li> <li>• Define product to be marketed</li> <li>• Internet Marketing Tools/Catalogue</li> </ul>	<b>34 hours</b>	

**TOTAL HOURS:**

**144 hours**

**RELATED INSTRUCTION SCHEDULE  
YEAR TWO**

<b>DOMAIN 2.0: Strategy and Planning</b>			%	Planned Classroom Hrs
<b>2.2 Recognize key factors relating to strategic marketing considerations as they relate to launching an e-Business initiative.</b>				
<ul style="list-style-type: none"> <li>• E-mail etiquette</li> <li>• Geographic/Localization considerations (local customs/criteria, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>• Demographics</li> <li>• Public relations; impact/risks of site failure</li> </ul>	<ul style="list-style-type: none"> <li>• 24x7 access/delivery</li> <li>• Adaptive content</li> </ul>	6	hours
<b>2.3 Recognize key factors relating to legal and regulatory considerations when planning e-Business solutions.</b>				
<ul style="list-style-type: none"> <li>• Knowledge ownership/Intellectual property rights</li> </ul>	<ul style="list-style-type: none"> <li>• Privacy</li> </ul>	<ul style="list-style-type: none"> <li>• Jurisdiction</li> </ul>	6	hours
<b>DOMAIN 3.0: Initiatives and Implementation Considerations</b>				
<b>3.1 Recognize and understand the basic principles and processes involved with implementing an e-business initiative.</b>				
<ul style="list-style-type: none"> <li>• Needs analysis of business drivers (customer needs, supplier needs, market drivers, etc.)</li> <li>• Business/Project sponsor/owner</li> <li>• Project structure</li> <li>• Project team cross functional membership</li> <li>• E-business implementation team resource requirements</li> <li>• Communication management</li> <li>• Privacy and security concepts, technologies and issues</li> <li>• Creating customer intimacy</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding customer's expectations (for example: expectations are: unexpected unspoken, expected unspoken, expected spoken and unexpected spoken, fast &amp; reliable service, etc.)</li> <li>• Disintermediating customer service resources (streamline and integrate customer service operations/resources)</li> <li>• Building blocks/technology components/business process components</li> </ul>	<ul style="list-style-type: none"> <li>• RAD (Rapid Application Development) methodology</li> <li>• Phased implementation (scheduled releases, updates, interim builds)</li> <li>• Rollout methods (pros/cons)</li> <li>• Business Process Re-engineering (straight through transactions from suppliers to customers--zero latency)</li> <li>• Modularity/Scalability</li> <li>• Creating communities of value</li> <li>• Reducing transaction costs and time</li> </ul>	40	hours

**RELATED INSTRUCTION SCHEDULE  
YEAR TWO (Continued)**

<b>DOMAIN 3.0 continued</b>			%	Planned Classroom Hrs
<b>3.2 Identify and understand the types of e-Business IT Projects currently being implemented.</b>				
<ul style="list-style-type: none"> <li>• Customer relationship management project types (front office--customer-facing processes and operations)</li> <li>• Sales Force Automation</li> <li>• Establishing Call Centers</li> <li>• Service support programs (for example: help desk, or help desk automation initiative, etc.)</li> <li>• E-mail/messaging implementation/migration</li> <li>• Client/Customer/Citizenry registration database</li> <li>• GUI design, development and deployment</li> <li>• e-Business database marketing program</li> <li>• Web-based information access</li> <li>• Customer service process improvements (disintermediation &amp; integration of customer service resources/programs)</li> <li>• Supply chain management project types</li> </ul>	<ul style="list-style-type: none"> <li>• Real time/JIT inventory management</li> <li>• Automated warehousing operations</li> <li>• e-Commerce project types</li> <li>• Electronic Payments (EBT/EFT/SET/Credit cards)</li> <li>• Electronic bill presentment/payment</li> <li>• Electronic /online customer/vendor ordering</li> <li>• Internet/Web-based online banking/financing</li> <li>• Collaborative computing--consulting, accounting, product development, etc.</li> <li>• Web-based delivery of goods and services (software, financial services, consulting services, etc.)</li> <li>• Publishing (online manuals, online catalogs, etc.)</li> <li>• IT Infrastructure Management project types</li> </ul>	<ul style="list-style-type: none"> <li>• Standardize/upgrade infrastructure to support e-Business processes/applications</li> <li>• Information/Knowledge management Systems (Business Intelligence systems/applications)</li> <li>• Data-storage, Data-warehousing and Datamining</li> <li>• Geographic information systems development/integration</li> <li>• Internet connectivity</li> <li>• Intranet</li> <li>• Extranet</li> <li>• Business rules applications development/implementation</li> <li>• Development and integration of application servers and technologies</li> <li>• Development of communications infrastructure for packaging/transferring data &amp; data analysis tools</li> <li>• Bandwidth analysis/upgrade across distributed computing environment</li> <li>• Network management</li> <li>• Web based online order processing/tracking</li> </ul>	<b>Next Page</b>	



**RELATED INSTRUCTION SCHEDULE  
YEAR TWO (Continued)**

DOMAIN 3.0 continued			%	Planned Classroom Hrs
<b>3.2 Identify and understand the types of e-Business IT Projects currently being implemented.</b>				
<ul style="list-style-type: none"> <li>Developing/ implementing backup systems (across platforms, redundancy, mirrored, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>Re-engineering/ integration of legacy systems</li> <li>Business Process Re-engineering (straight through transactions from suppliers to customers--zero latency)</li> </ul>	<ul style="list-style-type: none"> <li>Optimizing supply chain processes -- physical flow, material conversion, fulfillment, capacity, transportation, etc</li> <li>Logistics automation applications development/ implementation</li> </ul>		<b>84 hours</b>
<b>3.3 Demonstrate an awareness of deployment and support considerations needed to sustain the key business processes that may be affected by an e-Business implementation.</b>				
<ul style="list-style-type: none"> <li>Change management</li> <li>Business process modeling</li> <li>Streamlining processes (connectivity of front office to back office)</li> </ul>	<ul style="list-style-type: none"> <li>Shipping and return policies</li> <li>Financials</li> <li>Manufacturing/ distribution</li> </ul>	<ul style="list-style-type: none"> <li>Purchasing/ Procurement</li> <li>Operations</li> <li>Capacity planning (load estimations)</li> </ul>		<b>8 hours</b>

**TOTAL HOURS:**

**144 hours**

**RELATED INSTRUCTION SCHEDULE  
YEAR THREE**

DOMAIN 3.0 continued			%	Planned Classroom Hrs
<b>3.3 Demonstrate an awareness of deployment and support considerations needed to sustain the key business processes that may be affected by an e-Business implementation.</b>				
<ul style="list-style-type: none"> <li>Integration of processes/systems - alignment</li> <li>Web design and maintenance</li> </ul>	<ul style="list-style-type: none"> <li>Content Management</li> <li>Web Hosting</li> </ul>	<ul style="list-style-type: none"> <li>Testing (interim builds)</li> </ul>		<b>8 hours</b>
<b>3.4 Recognize and understand fundamental aspects of supply chain management in the e-Business paradigm.</b>				
<ul style="list-style-type: none"> <li>Logistics</li> <li>Supply and demand</li> <li>Modeling the supply chain</li> <li>Elimination of inventory</li> </ul>	<ul style="list-style-type: none"> <li>Supply Chain Velocity:</li> <li>Process improvement - straight through, zero latency</li> </ul>	<ul style="list-style-type: none"> <li>Procurement/ purchasing</li> <li>Customer service</li> <li>Process alignment, integration and synchronization</li> </ul>		<b>10 hours</b>

**RELATED INSTRUCTION SCHEDULE  
YEAR THREE (Continued)**

<b>3.5 Recognize and understand the value of client/user interface designs and its affect on business relationships.</b>				
<ul style="list-style-type: none"> <li>• Perception of added value to user</li> <li>• Preparing readiness and acceptance</li> <li>• Personalization</li> <li>• Performance</li> </ul>	<ul style="list-style-type: none"> <li>• Visual appeal</li> <li>• Navigation - finding what is needed</li> <li>• Graphic design importance</li> </ul>	<ul style="list-style-type: none"> <li>• Design standards</li> <li>• Usability considerations /testing</li> <li>• Internationalization</li> <li>• Ease of use (shopping experience -for example: one-click purchasing; site use, etc.)</li> </ul>		<b>14 hours</b>
<b>3.6 Recognize and understand fundamental volume and performance monitoring issues in e-Business.</b>				
<ul style="list-style-type: none"> <li>• Transaction analysis (business transactions and technology/technical counterpart)</li> <li>• Monitoring, Measurement and evaluation</li> </ul>	<ul style="list-style-type: none"> <li>• Unlimited/unpredictable audience</li> <li>• Bandwidth analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Quality of service management</li> <li>• Monitoring customer demographics, preferences, etc</li> </ul>		<b>6 hours</b>
<b>DOMAIN 4.0: Infrastructure</b>			%	Planned Classroom Hrs
<b>4.1 Recognize and understand fundamental network application technology concepts and their affects on e-Business implementations.</b>				
<ul style="list-style-type: none"> <li>• Common gateway interface (CGI)</li> <li>• Integration of information systems (data warehouse, knowledge management system, etc.)</li> <li>• Distributed information systems</li> <li>• Application life cycle (less stability)</li> </ul>	<ul style="list-style-type: none"> <li>• Newer Technologies (risk is higher)</li> <li>• Protocols</li> <li>• Web servers</li> <li>• ISP (hosting)</li> <li>• ASP (hosting) (application service provider)</li> <li>• Application Structure</li> </ul>	<ul style="list-style-type: none"> <li>• Fat Client / Thin Client</li> <li>• Middleware</li> <li>• Interoperability</li> <li>• Integration Issues re: applications, legacy systems, web servers/apps, etc.</li> <li>• Communications technologies/ applications (telecom technology and connectivity)</li> </ul>		<b>42 hours</b>

**RELATED INSTRUCTION SCHEDULE  
YEAR THREE (Continued)**

<b>4.2 Recognize and understand fundamental concepts and terms concerning network and information security as it relates to implementing an e-business solution.</b>				
<ul style="list-style-type: none"> <li>• Definition of security terms and concepts</li> <li>• Encryption</li> <li>• Digital certificates</li> <li>• Certificate authorities</li> <li>• Digital signatures</li> <li>• Authentication/ Authorization</li> <li>• Firewalls - network access policies</li> </ul>	<ul style="list-style-type: none"> <li>• Secure socket layer</li> <li>• Security models for different types of e-Business models (B2B, B2C, etc.) -- technical and non-technical types security technologies/ methods</li> <li>• Deploying and maintaining security</li> </ul>	<ul style="list-style-type: none"> <li>• Types of security breaches - intrusions (hackers / viruses)</li> <li>• Preventing, detecting, correcting, and prosecuting security breaches</li> <li>• Privacy</li> <li>• Monitoring and auditing exposure to security risks</li> </ul>		<b>48 hours</b>
<b>4.3 Recognize and understand fundamental concepts concerning e-business technology performance and maintenance to support an e-Business solution.</b>				
<ul style="list-style-type: none"> <li>• Network bandwidth</li> <li>• Transaction Breakdown</li> <li>• Directory services</li> </ul>	<ul style="list-style-type: none"> <li>• Load testing</li> <li>• Failure strategy</li> </ul>	<ul style="list-style-type: none"> <li>• Disaster planning / redundancy / fault tolerance</li> <li>• Support staffing/maintenance (24 x 7).</li> </ul>		<b>8 hours</b>
<b>4.4 Recognize and understand fundamental concepts relating to data management and usage in supporting e-Business technology solutions.</b>				
<ul style="list-style-type: none"> <li>• Interface to legacy systems</li> <li>• Data Mining / OLAP</li> </ul>	<ul style="list-style-type: none"> <li>• Data-warehousing</li> <li>• Data-integrity</li> <li>• Database Management/ Administration</li> </ul>	<ul style="list-style-type: none"> <li>• Transactional data conversions</li> <li>• Data synchronization in distributed environment</li> </ul>		<b>8 hours</b>

**TOTAL HOURS:**

**144 hours**