



# Module Presenter's Manual *for*

Enterprise Application  
Programming  
(Windows Azure  
and Web Services)

***Effective from: August, 2014  
Ver. 1.0***

## Amendment Record

Version No.	Effective Date	Change	Replaced Pages
1.0	August 2014	New	-

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## 1. Introduction

At the end of this course, students will be able to:

- Create HTTP-based services
- Create SOAP-based services
- Apply Design principles to service contracts
- Secure WCF services
- Host services on on-premises servers
- Deploy services on-premises and Windows Azure
- Access and store data in Windows Azure Storage
- Monitor and log services in Windows Azure
- Implement federated authentication by using ACS

## 2. Information on Session Allocation

Module	Theory (No. of Hrs)	Lab (No. of Hrs)	Total (No. of Hrs)
Enterprise Application Programming	20	20	40

Throughout this Presenter's Manual, the module **Enterprise Application Programming** will be referred to as **EAP**.

## 3. Module Deliverables available on OnlineVarsity

To aid the teaching process, following are the deliverables

### Faculty Deliverables:


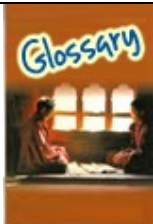
1. Presenter Manual (PM)










To aid the learning process, following are the deliverables

### Student Deliverables:

1. Learner's Guide (eBook)

Resources available on OnlineVarsity for Students:

Icons	Feature - Description/Functionality
	<b>Download Book</b> - Student has the option to download the subject related e-book and read offline.
	<b>Glossary</b> - Student can access a list of subject related specialized words with their definitions.

	<b>FAQ</b> - Student can access frequently asked questions and their answers.
	<b>Show Me How</b> - Student can view a step-wise simulation/demonstration of the module related topics.
	<b>Let Me Try</b> - Student can practice a step-wise simulation/demonstration of the module related topics.
	<b>Practice 4 Me</b> - Student can test and evaluate their understanding of module related topics.
	<b>Work Assignments</b> - Student can solve scenario based lab assignments (Hands-on). The faculty will evaluate and give their feedbacks.
	<b>Download Source code/Files</b> – Student can download courseware related source files.
	<b>References</b> - Student can access additional subject related material for reading.
	<b>Feedback</b> - Student can provide feedback on the course material.
	<b>Ask to Learn</b> – Student can submit subject related technical queries. Queries submitted will be directed to the particular course coordinator/head.

#### **4. Week-wise Session Schedule**

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- A Session has duration of 2 hrs
- The Concepts session is to be conducted in the classroom
- Lab session is to be conducted in the lab

##### ➤ **Week-Wise Schedule**

<b>Week</b>	<b>Day 1</b>	<b>Day 2</b>	<b>Day 3</b>	<b>Day 4</b>
<b>1</b>	<b>Session 1 EAP – T1</b>	<b>Session 2 EAP – L1</b>	<b>Session 3 EAP – T2</b>	<b>Session 4 EAP – L2</b>
<b>2</b>	<b>Session 5 EAP – T3</b>	<b>Session 6 EAP – L3</b>	<b>Session 7 EAP – T4</b>	<b>Session 8 EAP – L4</b>
<b>3</b>	<b>Session 9 EAP – T5</b>	<b>Session 10 EAP – L5</b>	<b>Session 11 EAP – T6</b>	<b>Session 12 EAP – L6</b>
<b>4</b>	<b>Session 13 EAP – T7</b>	<b>Session 14 EAP – L7</b>	<b>Session 15 EAP – T8</b>	<b>Session 16 EAP – L8</b>
<b>5</b>	<b>Session 17 EAP – T9</b>	<b>Session 18 EAP – L9</b>	<b>Session 19 EAP – T10</b>	<b>Session 20 EAP – L10</b>

**EAP:** Enterprise Application Programming

**T:** Theory Session, **L:** Lab Session

## 5. Session Coverage

Session No.	Session Title	Session Details	Deliverables' Mapping
1	EAP – T1	<p>All the topics as listed below from Session 1 and Session 2 of <i>Enterprise Application Development Using Windows Azure and Web Services</i> book should be covered in this session.</p> <p><b><u>Session 1 – Introduction to Windows Azure</u></b></p> <ul style="list-style-type: none"> <li>➤ Define and describe cloud computing</li> <li>➤ Describe cloud computing delivery models</li> <li>➤ Define and describe the Windows Azure platform</li> <li>➤ Differentiate between Windows Azure platform and Windows Azure Operating System (OS)</li> <li>➤ Define and describe Web Services</li> <li>➤ Describe the Windows Azure Portal</li> <li>➤ Explain the process to create, deploy, and test a cloud service using the portal</li> </ul> <p><b><u>Session 2 – Understanding Windows Azure Architecture</u></b></p> <ul style="list-style-type: none"> <li>➤ Describe the Windows Azure platform architecture</li> <li>➤ Describe the components of the Windows Azure architecture</li> <li>➤ Explain the process to create, test, and deploy an Azure cloud service using Visual Studio</li> <li>➤ Explain the process to create, test, and deploy a Web application on the cloud</li> </ul>	<p><b><u>Enterprise Application Development Using Windows Azure and Web Services</u></b></p> <p>Session 1 Session 2</p> <p>Classroom Presentations – Session 1 Session 2</p>

Session No.	Session Title	Session Details	Deliverables' Mapping
2	EAP – L1	All the workshop topics given in Session 1 and Session 2 of <i>Enterprise Application Development Using Windows Azure and Web Services</i> course should be covered in this session.	<b><u>Enterprise Application Development Using Windows Azure and Web Services</u></b>  Session 1 Session 2  (OnlineVarsity)
3	EAP – T2	<p>All the topics as listed below from Session 3 and Session 4 of <i>Enterprise Application Development Using Windows Azure and Web Services</i> book should be covered in this session.</p> <p><b><u>Session 3 – ASP.NET Web API Services</u></b></p> <ul style="list-style-type: none"> <li>➤ Define and describe ASP.NET Web API</li> <li>➤ Define and describe HTTP, REST, and Media Types</li> <li>➤ Explain how to implement a ASP.NET Web API Service</li> <li>➤ Explain how to secure a ASP.NET Web API Service</li> </ul> <p><b><u>Session 4 – Hosting and Consuming ASP.NET Web API Services</u></b></p> <ul style="list-style-type: none"> <li>➤ Define and describe how to host and manage a Web API service</li> <li>➤ Explain how to consume a Web API service</li> <li>➤ Explain how to host a Web API service in a Windows Azure worker role</li> <li>➤ Define and describe the best practices to employ while developing Web API services</li> </ul>	<p><b><u>Enterprise Application Development Using Windows Azure and Web Services</u></b></p> <p>Session 3 Session 4</p> <p>Classroom Presentations – Session 3 Session 4</p>



<b>4</b>	<b>EAP – L2</b>	<p>All the workshop topics given in Session 3 and Session 4 of <i>Enterprise Application Development Using Windows Azure and Web Services</i> course should be covered in this session.</p>	<p><b><u>Enterprise Application Development Using Windows Azure and Web Services</u></b></p> <p>Session 3 Session 4</p> <p><b>(OnlineVarsity)</b></p>
<b>5</b>	<b>EAP – T3</b>	<p>All the topics as listed below from Session 5 and Session 6 of <i>Enterprise Application Development Using Windows Azure and Web Services</i> book should be covered in this session.</p> <p><b><u>Session 5 – Accessing and Manipulating Data</u></b></p> <ul style="list-style-type: none"> <li>➤ Define and describe various data access technologies</li> <li>➤ Explain asynchronous data access using ADO.NET</li> <li>➤ Explain XML data access and manipulation</li> </ul> <p><b><u>Session 6 – Advanced Concepts of Data Access</u></b></p> <ul style="list-style-type: none"> <li>➤ Define and describe how to query data with Entity Framework</li> <li>➤ Explain how to work with transactions</li> <li>➤ Explain how to create and use Entity Framework data model</li> </ul>	<p><b><u>Enterprise Application Development Using Windows Azure and Web Services</u></b></p> <p>Session 5 Session 6</p> <p>Classroom Presentations – Session 5 Session 6</p>
<b>6</b>	<b>EAP – L3</b>	<p>All the workshop topics given in Session 5 and Session 6 of <i>Enterprise Application Development Using Windows Azure and Web Services</i> course should be covered in this session.</p>	<p><b><u>Enterprise Application Development Using Windows Azure and Web Services</u></b></p> <p>Session 5 Session 6</p> <p><b>(OnlineVarsity)</b></p>

<b>7</b>	<b>EAP – T4</b>	<p>All the topics as listed below from Session 7 of <i>Enterprise Application Development Using Windows Azure and Web Services</i> book should be covered in this session.</p> <p><b><u>Session 7 – Windows Azure Storage</u></b></p> <ul style="list-style-type: none"><li>➤ Describe the characteristics of Windows Azure Storage</li><li>➤ Understand Azure Storage Services</li><li>➤ Explain how to use storage accounts</li><li>➤ Explain routing requests</li><li>➤ Describe URL patterns</li></ul>	<p><b><u>Enterprise Application Development Using Windows Azure and Web Services</u></b></p> <p>Session 7</p> <p>Classroom Presentations</p> <p>–</p> <p>Session 7</p>
<b>8</b>	<b>EAP – L4</b>	<p>All the workshop topics given in Session 7 of <i>Enterprise Application Development Using Windows Azure and Web Services</i> course should be covered in this session.</p>	<p><b><u>Enterprise Application Development Using Windows Azure and Web Services</u></b></p> <p>Session 7</p> <p><b>(OnlineVarsity)</b></p>

9	EAP – T5	<p>All the topics as listed below from Session 8 of <i>Enterprise Application Development Using Windows Azure and Web Services</i> book should be covered in this session.</p> <p><b><u>Session 8 – Advanced Windows Azure Storage Concepts</u></b></p> <ul style="list-style-type: none"> <li>➤ Describe Blob storage</li> <li>➤ Describe Table storage</li> <li>➤ Describe Queue storage</li> </ul>	<p><b><u>Enterprise Application Development Using Windows Azure and Web Services</u></b></p> <p>Session 8</p> <p>Classroom Presentations</p> <p>–</p> <p>Session 8</p>
10	EAP – L5	<p>All the workshop topics given in Session 8 of <i>Enterprise Application Development Using Windows Azure and Web Services</i> course should be covered in this session.</p>	<p><b><u>Enterprise Application Development Using Windows Azure and Web Services</u></b></p> <p>Session 8</p> <p><b>(OnlineVarsity)</b></p>
11	EAP – T6	<p>All the topics as listed below from Session 9 of <i>Enterprise Application Development Using Windows Azure and Web Services</i> book should be covered in this session.</p> <p><b><u>Session 9 – WCF Services</u></b></p> <ul style="list-style-type: none"> <li>➤ Describe WCF services</li> <li>➤ List the features of WCF that are not supported by ASP.NET Web API</li> <li>➤ Explain the steps to create a WCF service</li> <li>➤ Explain the process to define a service contract and implement it</li> <li>➤ Explain how to host and configure a WCF service</li> <li>➤ Describe the procedure to consume a WCF service from a client application</li> <li>➤ Explain how to create and deploy a WCF cloud service to Azure</li> </ul>	<p><b><u>Enterprise Application Development Using Windows Azure and Web Services</u></b></p> <p>Session 9</p> <p>Classroom Presentations</p> <p>–</p> <p>Session 9</p>

<b>12</b>	<b>EAP – L6</b>	All the workshop topics given in Session 9 of <i>Enterprise Application Development Using Windows Azure and Web Services</i> course should be covered in this session.	<b><u>Enterprise Application Development Using Windows Azure and Web Services</u></b>  Session 9  <b>(OnlineVarsity)</b>
<b>13</b>	<b>EAP – T7</b>	All the topics as listed below from Session 10 of <i>Enterprise Application Development Using Windows Azure and Web Services</i> book should be covered in this session.  <b><u>Session 10 – Service Bus in Windows Azure</u></b> <ul style="list-style-type: none"><li>➤ Explain Service Bus in Windows Azure</li><li>➤ Describe queues, topics, and relays</li><li>➤ State the use of AMQP in Service Bus</li><li>➤ Describe the use of Service Bus relays in cloud hybrid applications</li></ul>	<b><u>Enterprise Application Development Using Windows Azure and Web Services</u></b>  Session 10  Classroom Presentations – Session 10
<b>14</b>	<b>EAP – L7</b>	All the workshop topics given in Session 10 of <i>Enterprise Application Development Using Windows Azure and Web Services</i> course should be covered in this session.	<b><u>Enterprise Application Development Using Windows Azure and Web Services</u></b>  Session 10  <b>(OnlineVarsity)</b>

15	EAP – T8	<p>All the topics as listed below from Session 11 of <i>Enterprise Application Development Using Windows Azure and Web Services</i> book should be covered in this session.</p> <p><b><u>Session 11 – Windows Azure SQL Database</u></b></p> <ul style="list-style-type: none"> <li>➤ Describe SQL Database</li> <li>➤ List and describe the features of SQL Database</li> <li>➤ Explain the working of SQL database</li> <li>➤ Compare between SQL Azure and SQL Server</li> <li>➤ Describe the procedure to create a Cloud database</li> <li>➤ Explain the process to configure Firewall</li> <li>➤ Explain the process to manage the cloud database</li> <li>➤ Describe connecting to SQL Database using SQL Server Management Studio</li> <li>➤ Describe connecting to SQL Database using ADO .NET</li> <li>➤ Explain the process to query SQL Database</li> </ul>	<p><b><u>Enterprise Application Development Using Windows Azure and Web Services</u></b></p> <p>Session 11</p> <p>Classroom Presentations</p> <p>–</p> <p>Session 11</p>
16	EAP – L8	<p>All the workshop topics given in Session 11 of <i>Enterprise Application Development Using Windows Azure and Web Services</i> course should be covered in this session.</p>	<p><b><u>Enterprise Application Development Using Windows Azure and Web Services</u></b></p> <p>Session 11</p> <p><b>(OnlineVarsity)</b></p>

17	EAP – T9	<p>All the topics as listed below from Session 12 and Session 13 of <i>Enterprise Application Development Using Windows Azure and Web Services</i> book should be covered in this session.</p> <p><b><u>Session 12 – Advanced Concepts of SQL Database</u></b></p> <ul style="list-style-type: none"> <li>➤ Explain Windows Azure SQL Database Provisioning ModelEx</li> <li>➤ Explain Windows Azure Table Storage versus SQL DatabaseEx</li> <li>➤ Explain Troubleshooting and Error Handling</li> </ul> <p><b><u>Session 13 – Application Lifecycle Management</u></b></p> <ul style="list-style-type: none"> <li>➤ Explain Application Lifecycle Management (ALM)</li> <li>➤ Describe ALM Tooling</li> <li>➤ Explain how to manage lifecycle on Windows Azure</li> </ul>	<p><b><u>Enterprise Application Development Using Windows Azure and Web Services</u></b></p> <p>Session 12 Session 13</p> <p>Classroom Presentations – Session 12 Session 13</p>
18	EAP – L9	<p>All the workshop topics given in Session 12 and Session 13 of <i>Enterprise Application Development Using Windows Azure and Web Services</i> course should be covered in this session.</p>	<p><b><u>Enterprise Application Development Using Windows Azure and Web Services</u></b></p> <p>Session 12 Session 13</p> <p><b>(OnlineVarsity)</b></p>

19	EAP – T10	<p>All the topics as listed below from Session 14 and Session 15 of <i>Enterprise Application Development Using Windows Azure and Web Services</i> book should be covered in this session.</p> <p><b><u>Session 14 – Deploying Web Application and Services</u></b></p> <ul style="list-style-type: none"> <li>➤ Explain planning and designing a deployment strategy for Web applications and Azure</li> <li>➤ Describe configuring and implementing deployment</li> <li>➤ Describe using NuGet for managing packages</li> </ul> <p><b><u>Session 15 – Continuous Deployment</u></b></p> <ul style="list-style-type: none"> <li>➤ Describe an overview of Git and TFS</li> <li>➤ Explain the process of using Git in Azure</li> <li>➤ Define and describe TFS</li> <li>➤ Describe Azure diagnostics</li> </ul>	<p><b><u>Enterprise Application Development Using Windows Azure and Web Services</u></b></p> <p>Session 14 Session 15</p> <p>Classroom Presentations – Session 14 Session 15</p>
20	EAP – L10	<p>All the workshop topics given in Session 14 and Session 15 of <i>Enterprise Application Development Using Windows Azure and Web Services</i> course should be covered in this session.</p>	<p><b><u>Enterprise Application Development Using Windows Azure and Web Services</u></b></p> <p>Session 14 Session 15</p> <p><b>(OnlineVarsity)</b></p>

## 6. Library References

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➤	<b>Exam Ref 70-487 - Developing Windows Azure and Web Services</b> by William Ryan, Wouter De Kort, and Shane Milton
➤	<b>Learning Windows Azure Mobile Services for Windows 8 and Windows Phone 8</b> by Geoff Webber-Cross
➤	<b>Developing Cloud Applications with Windows Azure Storage</b> by Paul Mehner

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