

Subject Description Form

Subject Code	COMP 5229
Subject Title	Enterprise Applications and Systems Management
Credit Value	3
Level	5
Pre-requisite/ Exclusion	Nil
Objectives	<p>This subject will cover the characteristics of enterprise computing including server virtualization, high volume transactional data processing, service oriented architecture, and security and privacy that may be mandated by legislation. Several frameworks for enterprise applications will be considered: Customer Information Control System (CICS), Java Enterprise Edition (Java EE) and Windows Communication Foundation (WCF). Integration with legacy applications is another important facet of enterprise computing, and two aspects will be considered: connector architectures for application servers, and Web services. Our goal in this subject is to give students a good foundation in enterprise computing in general and IBM's z/OS system in particular.</p> <p>The objectives of this subject are:</p> <ol style="list-style-type: none"> 1. To introduce the students to the unique characteristics of the enterprise computing hardware and software; 2. To acquaint the students with today's commercial applications implemented in the enterprise computing environment (multi-platform networking, scalability, distributed processing, integration of legacy applications, etc.).
Intended Learning Outcomes	<p>Upon completion of subject, students will be able to:</p> <ol style="list-style-type: none"> a) Articulate the differentiating and unique characteristics of the enterprise computing environment, in particular the zEnterprise environment; b) Explain the total cost of ownership rationale for virtualization, and explain software and hardware support for virtualization; c) Manage resources in an enterprise computing system; and implement and run enterprise applications in that environment. d) Explain SOA and its application to legacy applications, and explain the use of connector architectures and Web services for using legacy applications.
Subject Synopsis/ Indicative Syllabus	<ul style="list-style-type: none"> • Introduction to enterprise computing, virtualization and total cost of ownership (TCO), Service oriented architecture, Integration with legacy systems with Web services. • Server virtualization, processes and virtual memory in operating systems. Processor virtualization and hardware support, input-output virtualization. Self-virtualizing devices, virtual networks and virtual switches. • The z/VM hypervisor. Conversational Monitoring System (CMS). Programming a hypervisor. REXX and CMS pipelines. • Introduction to z/OS. Interacting with z/OS using RD/z.

	<p>Legacy interfaces: TSO/E, ISPF, Unix and z/OS internals. Batch processing on mainframes.</p> <ul style="list-style-type: none"> • Guest management in the cloud, transactional enterprise applications. Java Enterprise Edition (Java EE). Integration with legacy systems: connector architectures such as JCA, Windows Communication Foundation (WCF). 																												
Teaching/Learning Methodology	<p>Lectures and Laboratories Teaching is based on lectures which include the understanding the enterprise computing environment and its related applications. Laboratories are used to provide examples of problems and to show how solutions are developed through hand on practices. The IBM zEnterprise environment will be used by students for the laboratories. The mid-term is administered to students to strengthen their technical problem solving ability.</p> <p>Seminars When appropriate, invited speakers will join the class to share technical aspects and/or business applications in the enterprise computing area.</p>																												
Assessment Methods in Alignment with Intended Learning Outcomes	<table border="1"> <thead> <tr> <th rowspan="2">Specific Assessment Methods/Tasks</th> <th rowspan="2">% weighting</th> <th colspan="4">Intended subject learning outcomes to be assessed</th> </tr> <tr> <th>a</th> <th>b</th> <th>c</th> <th>d</th> </tr> </thead> <tbody> <tr> <td>Assignments, Tests & Projects</td> <td>55</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>Final Examination</td> <td>45</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>Total</td> <td>100</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Specific Assessment Methods/Tasks	% weighting	Intended subject learning outcomes to be assessed				a	b	c	d	Assignments, Tests & Projects	55	✓	✓	✓	✓	Final Examination	45	✓	✓	✓	✓	Total	100				
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Reading list and references	<p>(1) Introduction to the New Mainframe: z/OS Basics by Ebbers et al. IBM Redbooks, 2006.</p> <p>(2) Introduction to the New Mainframe: z/VM Basics by Parzlale et al. IBM Redbooks, 2007.</p>																												