



COURSE SYLLABUS

Course: **ISYS 4453 Introduction to Enterprise Servers – zSeries**
Prerequisite: ISYS 2263 or CSCE 2014 with a grade of “C” or better

This course is designed for you to learn about the basic architectural concepts of IBM's System z (referred to as a mainframe) computing platform and the basis of decisions to use a mainframe. The course also provides advantages/disadvantages of the zSeries including total cost of ownership, scalability, performance, administration, availability, system, memory management, security and connectivity advantages (virtual networking). You will learn such concepts of a Geographically Dispersed Parallel Sysplex system, virtualization, reliability, accessibility and scalability.

Students will become comfortable operationally with two of the System z's operating system – z/OS and zLinux--and applying them to applications. Further, you will become proficient in creating/editing/deleting files as well as using the operating systems to run applications. Again, this course will include both z/OS and zLinux on IBM System z. Linux is growing in popularity and this course shows how Linux on zSeries fits into the e-business/e-server arena. Practical exercises for both computing environments are included in the class.

Note that IBM has continued to develop outstanding systems management and application development tools; and transform the System z platform to be an excellent choice for Service Oriented Applications (SOA) – Web Services—and cloud computing. The class will make extensive use of RDz (Rational Developer for z).

Value of the Course:

Myths have always been prevalent in computing. For example, Cobol is dead, case tools are the silver bullet, object-oriented programming is always best, mainframes are an old technology and thus obsolete, etc. For example, Stewart Alsop made the following quote in Infoworld in March, 1991, “I predict that the last mainframe will be unplugged on March 15, 1996.” Note that mainframe computing evolves just like any other technology and now a mainframe computer (zSeries) is just another server —albeit the most scalable and reliable server platform for most large companies. The zSeries is experiencing a period of growth and momentum for server consolidation and energy savings along with its more traditional role as a high volume transaction system.

The z Series now supports multiple operating systems (z/OS, UNIX and zLinux). Linux is the fastest growing open source operating system. Thus, in this course, you gain skills that in both the z/OS and zLinux operating environments (including RDz with both) which provide you an advantage when seeking a job with large companies. More than 20% of the new System z capacity is for Linux application loads.

Prerequisites:

1. Knowledgeable and experience with any operating system – Windows, Linux, etc.
2. Access to the Internet and Internet Explorer Version 7.0 or higher
3. Interest in gaining knowledge and experience that is **valuable** but not readily available.

Course goals:

1. Be able to express the benefits of a mainframe including
 - a. Z Series architectural concepts
 - b. Consolidation and TCO advantages of this environment
 - c. Major applications running on the mainframe as well as the type of applications for which it makes sense to put on a mainframe
 - d. The role of JCL for scheduling and batch processing
 - e. How z/VM exploits virtualization and allows Linux to be run as a virtual guest
 - f. Know the value of Linux on the mainframe
2. System z skills under zOS
 - a. Be able to navigate TSO/ISPF and RDz environments
 - b. Be able to create partitioned datasets; edit, upload, download files
 - c. Be able to use selected utilities including IDCAMS to create VSAM files
 - d. Be able to run simple programs that utilize files and JCL on the mainframe
3. Linux skills using the Integrated Facility for Linux.
 - a. Be able to effectively work in the Linux environment including RDz
 - b. Be able to do essential system tasks
 - c. Be able to work with files including creation, editing, copying, etc.
 - d. Be able to write basic Linux scripts
 - e. Be able to create Web sites using LAMP (Linux, Apache, MySQL, PHP)

Required Reading: Lecture material associated with the course. Extracts from IBM manuals, and papers are provided.

Lecture Schedule: The Exams (midterm and final) cover all the material from the lectures prior to the date on which they are scheduled. The final is not cumulative; it begins with material not already tested on the midterm exam. The exams are timed. There will also be projects – some will be done in class and others will be homework projects.

- Dead day is December 8, 2010
- Our last regularly scheduled class meeting will be on December 15, 2010.
- The final has been scheduled for December 15.

General Discussion, Email and Chat guidelines:

Respect the privacy of other class members

- Any inappropriate use of the email, chat or discussion group will result in removal from the class and forfeiture of tuition
- Messages are expected to be professional and constructive
- Remember, the tenor of your communication may be difficult to properly assess since facial expressions cannot be observed. Choose your words wisely when strong opinions or feelings are being expressed, i.e. don't be insulting, inflammatory, provocative, or ...
- Be respectful of other people's opinions and ideas
- Use normal fonts

Email:

- Use the email associated with the class and not a private email address or forward your class email to your private account
- Always provide a relevant and descriptive subject

Grading:

Grades will be based on projects, readings, quizzes and exams.

Final grade assignment scale:

Points	Grade
90+	A
80-89	B
70-79	C
60-69	D
<60	F

Academic Honesty Policy

The University of Arkansas has an Academic Honesty Policy that can be found at the following URL: <http://www.uark.edu/campus-resources/rlee/honesty.html>. You should read this policy. Most students fully understand direct cheating but sometimes do not fully grasp what plagiarism is. In a nutshell, plagiarism is presenting other peoples work or concepts as one's own. Certainly, other works and concepts can be used but must be referenced. We as faculty members hold the responsibility for maintaining academic honesty and will certainly do so—you do not want to be the test case.

Tentative Schedule

Class Meeting	Topic	Assignments
Aug. 25	Introduction to the course; z/OS – Part I; (ISPF/RDz)	SAP on Linux on a Mainframe! The Colacem Case Study Overview of ISPF/RDz
Sept. 1	z/OS Part II (ISPF/RDz)	Operational Basics of TSO/ISPF In-class hands-on; Assignment for next week
Sept. 8	Application programming environment including JCL	JCL-Programming Examples In-class hands-on; Assignment for next week
Sept. 15	Indexed files – VSAM, IDCAMS, primary index, alternate index	In-class examples Assignment for next week
Sept. 22	JCL, VSAM (cont), DB2	In-class examples Assignment for next week
Sept. 29	Java and JCL	In class assignment Assignment for next week
Oct. 6	Guest speaker—Mark Shackelford-- Baldor	In class assignment Assignment for next week
Oct. 13	Complete z/OS & RDz environment— Exam I	
Oct. 20	Linux Basics—Scripts I and Scripts	In-class examples—walkthroughs Basic Linux commands, scripting Assignment for next week
Oct. 27	Web development basics- Intro to PHP – Assign team projects	In-class examples PHP variables, sequence Assignment for next week
Nov. 3	PHP—Creating a Web application with LAMP	In-class examples PHP, If statements, Looping Assignment for next week
November 10	PHP with databases	In-class examples PHP with MySQL and DB2 Assignment for next week
Nov. 17	PHP with databases (cont)	In-class examples Assignment for next week
Nov. 24	Thanksgiving Week	
Dec. 1	Web Project—Linux features on a mainframe; Sys. Mgmt, Memory and Disk Mgmt, Cloning, Review for final	Project Due
Dec. 8	Dead day	
Dec. 15	Final Exam in class-normal class time	