Course Syllabus

Version 1.0

Instructor

Andrew L. Mackey
AMackey@walton.uark.edu
+1-479-226-8288

Online Office Hours

Tuesday, 8:30 pm – 9:30 pm

Description

ISYS 4453/5453: Introduction to Enterprise Servers (3 credit hours)
WCOB 250
Wednesday 6:00 – 8:50 pm

This course is designed for you to learn about the basic architectural concepts of IBM's mainframe computing platform and the basis of decisions to use a mainframe. IBM changed the name of its mainframes systems in 2010 to zEnterprise; previously they were referred to as System z. In common terms, everyone knows the term z means an IBM mainframe. The course also provides advantages/disadvantages of the z 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.

Prerequisites

The following are expectations of students enrolling in this course:

1. Possess knowledge and experience of basic operating concepts (e.g. Window, Linux, etc.)
2. Able to access to the internet using a standard web browser
3. Interested in gaining knowledge and experience that is valuable but not readily available

Objectives and Topics

Throughout this course, students explore the components of enterprise systems and understand the how they are leveraged. After students have successfully completed this course, they will be able to:

1. Be able to express the benefits of a mainframe including
    a. Z 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. 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 used 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, coping, etc.
    d. Be able to write basic Linux scripts
    e. Be able to create Web sites using LAMP (Linux, Apache, mySQL, PHP)

f. Be able to develop mobile apps in Linux environment

Assigned Reading

Lecture material associated with this course will be provided through Blackboard. Items distributed in class will also be available electronically.

Expectations

You are expected to attend all class lectures, complete each of the assignments and projects, and complete the midterm and final exams.

Grading

The total points for this course will be distributed across assignments, projects, and a midterm and final exam. The following breakdown represents the point distribution for this class:

ISYS 4453 Students (Undergraduate)

1.	Problem Sets	40%	400 points
2.	Lab Work	10%	100 points
3.	Final Project	15%	150 points
4.	Midterm Exam	15%	150 points
5.	Final Exam	20%	200 points

The final grade for this course will be based on the following scale:

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

Schedule

The following list is a tentative outline of the topics that will be presented in this course. This is subject to change at the instructor's discretion.

Week (Start Date)	**Course Material**	**Assignment/Project Due**[1]
Week 1 (Aug 22)	Course Introduction Introduction to z/OS	
Week 2 (Sep 29)	Introduction to z/OS (cont.)	Problem Set 1
Week 3 (Sep 5)	Job Control Language (JCL)	Problem Set 2
Week 4 (Sep 12)	Job Control Language (JCL) DB2 on z/OS	Problem Set 3
Week 5 (Sep 19)	DB2 on z/OS (cont.)	Problem Set 4
Week 6 (Sep 26)	Indexed Files	Problem Set 5
Week 7 (Oct 3)	Indexed Files (cont.)	
Week 8 (Oct 10)	Review Midterm Examination	Problem Set 6
Week 9 (Oct 17)	Linux on System z	
Week 10 (Oct 24)	Linux on System z (cont.)	Problem Set 7
Week 11 (Oct 31)	Web Development	Problem Set 8
Week 12 (Nov 7)	Web Development (cont.)	
Week 13 (Nov 14)	PHP and Database Systems	Problem Set 9
Week 14 (Nov 28)	PHP and Database Systems (cont.)	Research Project
Week 15 (Dec 5)	Course Review	
Week 16 (Dec 12)	Final Examination	Final Project

[1] Each project may carry a separate set of requirements necessitating an earlier submission. Refer to the project documentation for detailed information.

Attendance

Attendance will be documented. If you miss a class, you are responsible for:

1. All material and content covered in class. (I facilitate this by posting PowerPoint presentations and a list of problems worked on Blackboard)
2. All details of announcements made in class.
3. Submission of for-credit assignments when due.

Problem Sets

One of the most challenging yet rewarding ways of acquiring information is through the practical application of the material presented throughout the course. Assignments and projects in this course are often comprehensive by design. Therefore, it is critical for you to understand the material as we progress through the course.

Assignments and projects will introduce the student to a specific set of topics covered during lectures. Each one will serve as a tool to familiarize the student with the given subjects it represents. Each should provide scenarios in which the student will be required to apply their existing knowledge to a given problem. They will have to assess the current situation of the project and provide a viable solution that appropriately demonstrates the student's knowledge of the material.

All work must be completed on time. It is the student's responsibility to communicate well in advance any problems he or she is experiencing. All work not completed before the assigned time will have a 20% late penalty assessed for each 24-hour period that has elapsed since the deadline for a maximum of three days past the original time due.

Unless otherwise noted, all assigned work is due by 5:00 pm CT on Wednesday of the week specified in the project documentation.

Exams

This course has a midterm and final examination with dates posted on the course schedule. The final exam will be administered on the last day of the course. This exam will test the student's knowledge of the topics covered.

Deadlines

Due to the criticality of completing work in a timely manner, students are required to meet the deadlines given in the course. Assignments and projects will be introduced and submitted electronically, therefore granting students the ability to manage them remotely.

The exams will be administered on the assigned date as determined by the instructor. No alternative testing date will be allowed except in unavoidable circumstances that are communicated in advance. This will only be granted upon the determination of the instructor.

Communication

One of my most important responsibilities to students is to clearly communicate any information as it surfaces. I will regularly correspond with students via email with pertinent information relating to class (i.e. class cancellations, lab days, deadline adjustments, etc.). In addition, any changes to the syllabus, schedule, or material will be communicated. It is the student's responsibility to monitor their university-assigned email accounts.

Email

Email has become an effective method by which we communicate. In order to facilitate a timely discussion between us via e-mail, I ask that you do the following:

1. In order to ensure the privacy of students, please use the email associated with the class and not a private email address or forward your class email to your private account
2. Always provide a relevant and descriptive subject
3. Please include ISYS 4453 in the subject so I can route them to an email folder for the class

Academic Honesty

"Academic dishonesty involves acts that may subvert or compromise the integrity of the educational or research process at the University of Arkansas, when such acts have been performed by a UA student. Academic dishonesty includes, but is not limited to, any act by which a student gains or attempts to gain an academic advantage for him/herself or another by misrepresenting his/her or another's work or by interfering with the independent completion, submission, or evaluation of academic work."

"As a core part of its mission, the University of Arkansas provides students with the opportunity to further their educational goals through programs of study and research in an environment that promotes freedom of inquiry and academic responsibility. Accomplishing this mission is only possible when intellectual honesty and individual integrity prevail." (2011-12 University of Arkansas Undergraduate Catalog)

As a University of Arkansas student, you are required to be familiar with and abide by the University's Academic Integrity Policy which may be found at http://catalogofstudies.uark.edu/2882.php. Please view this short YouTube video: tp://www.youtube.com/watch?v=v6RFoumit7c. If you have questions about how these policies apply to this course or an assignment, then please see me.

Proprietary Information

Because many students in the Master's program are working adults, occasionally information or data from your place of employment might be pertinent to class projects, assignments or group discussions. Please be sure that you have the necessary permissions to share this information in class. Any further questions regarding non-disclosure or confidentiality agreements related to assignments or discussions should be directed to your instructor.

Accommodations

It is the Walton College policy that reasonable accommodations will be made for students with disabilities. Students must request any accommodations from their instructor in addition to requesting accommodations from the Center for Students with Disabilities (CSD). Please contact the CSD for details on seeking accommodations for disabilities.

Inclement Weather Policy

From time to time we could be challenged by the weather. Class will be canceled when the University is closed. Class may also be canceled due to inclement weather even though the University remains open; please check BlackBoard and/or call me at my office at 479-226-8288 on those questionable weather days (i.e., ice on roads).

When the weather is such that there are questions about whether we are having class, by 12:00PM of the day of class your instructor will post an announcement on BlackBoard and send an email regarding the status of class that evening. Check in with BlackBoard or by phone. Finally, when we have to cancel class because of inclement weather, an alternative method of course delivery will be leveraged (e.g. online collaboration, discussion, etc.). This will be announced by the instructor through email and Blackboard.

Equal Treatment for All

The University Catalog reprints the Campus Council Statement on Discrimination. In the spring of 1983, the Campus Council adopted a statement on equal treatment, amended in fall 1991: "The Campus Council of the University of Arkansas, Fayetteville, does not condone discriminatory treatment of students or staff on the basis of age, disability, ethnic origin, marital status, race, religious commitment, sex, or sexual orientation in any of the activities conducted on this campus. Members of the faculty are requested to be sensitive to this issue, when, for example, presenting lecture material, assigning seating within the classroom, selecting groups for laboratory experiments, and assigning student work. The University faculty, administration, and staff are committed to providing an equal educational opportunity to all students."