

Creighton University

COURSE: ITM733/MBA779 Systems Integration and Cloud Computing
TIME: Thursday, 6:00 to 9:30 PM
PLACE: BA110
INSTRUCTOR: Dr. George Royce
OFFICE: Room BA 426 and at UNO PKI Room 367. See my website for a map to UNO PKI. My site is: <http://roycesite.com/george>
OFFICE HOURS: Before or after class by appointment and regularly my hours are 5-6 PM on Friday afternoons and 9-11 Saturday mornings (check my website <http://roycesite.com/george> if times are adjusted).
PHONE and IM: Home: 402-216-0414 leave a voice message if I am not there. Cell phone is 402-871-9675 if urgent. You can also connect with Skype: gkroyce, and gtalk or my gmail. I also use Microsoft IM (george.royce@live.com). I prefer IM over email if you are comfortable with IM but email is acceptable.
E-Mail georgeroyce@creighton.com or george.royce@gmail.com

Course Description:

More and more companies have a variety of mission critical distributed systems running in their data centers (on-premise) and a growing number of distributed systems that are running in third party data centers and in the cloud. Companies are looking for professionals that can work with and integrate both on-premise and cloud based distributed business systems. This course introduces students to cloud computing and how to integrate both cloud and on premise computing. Students will work with systems that are running on premise and in both the private and public clouds. Students will gain hands on experience with cloud based services and will integrate these services with on premise systems such as Microsoft SharePoint. Course topics include distributed systems architecture, middleware, Internet-based systems development, security and performance in a mixed cloud and on-premise environment. Issues concerning the preparation, distribution, and evaluation of requests for proposal (RFP), contracting and acquisition of information technology products, and managing a team of vendors and contractors, will be considered and illustrated with case studies.

Objectives:

After taking this course you will, among other things, be able to

1. Understand the strategic potential of distributed computing systems for business processes.
2. Provide and understand a framework for classifying distributed computing architectures and distributed applications.
3. Map out information systems architecture and assess the fit between existing and needed architectures.
4. Classify and evaluate the numerous flavors of middleware in order to make decisions about middleware acquisition.
5. Understand the factors that contribute to the performance of client/server systems and incorporate this understanding in the design of client/server systems.
6. Understand the impact of web services and their standards on distributed computing development and systems integration.
7. Understand the economics of on-premise, application service provider solutions and cloud based solutions.

8. Develop a simple workflow capability in the cloud based facility called Force.com (No programming knowledge needed. If you can develop a simple macro in Excel, you can do this).
9. Develop a cloud based Microsoft SharePoint Site that will consume web services from other sites (no programming knowledge needed for this).
10. Develop a request for proposal (RFP) for a systems integration project

Text:

Cloud Computing and SOA Convergence in Your Enterprise, David S Linthicum, Pearson Education Inc. June 2011. ISBN 13: 978-0-13-600922-1.

Additional References (not required):

Enterprise Architectures and Integration with SOA – Concepts, Methodology and a Toolset. Amjad Umar, NGE Solutions, Inc. January, 2010. ISBN: 0-9727414-002.

Grading:

Activity	Points
Class discussion and participation in Blueline forums and virtual classes	110
Assignment 1 – Middleware Review and Case Study	100
Assignment 2 – Amazon PHP / Microsoft SharePoint Integration	180
Assignment 3 – Cloud based workflow application integration	80
Assignment 4 – Systems Integration Project	180
1st Quarter Exam	200
2 nd Quarter Exam	200
Total	1000

Prerequisites:

ITM 731 or permission of instructor

Virtual Presentations

Due to the limited amount of class time and the large number of topics to cover, you will be asked to listen to one or more “virtual presentations” which include slides with audio in a Flash presentation on my website. You will also be asked to answer questions about these presentations in Blueline.

Class Policies:

Late Assignments: 3% deduction per day for up to 7 days. After that, the assignment will not be counted. The assignment needs to be your original work.

Cheating – If you copy another person’s work in whole or in part, you will receive no credit for the assignment. If you allow your work to be copied by another person, you will receive no credit for the assignment. Two such incidents can result in a failing grade for the course.

Class Outline:

Date	Topics	Assignments Due
Class 1 Monday August 23rd	Course Introduction 1.1 Welcome to 733 course and teacher 1.2 Introduction to Distributed Technology and Systems and Business Value 1.3 Introduction to the Internet and PHP 1.4 Sign Up for Amazon Web Services 1.5 Demonstration of how to use WinSCP with Amazon Web Services (also online) 1.6 Introduction to XML (online only) 1.7 Overview of Assignment 1 deliverables	Due by end of first week of semester: Read: Course Syllabus (posted in Blueline Course Documents) Watch: Topics 1.6 Do: Register for Amazon Web Services for your PHP web services assignment (assignment 2) and Force.com (assignment 1. Do this before Monday July 9 th . Submit: Student Information Sheet, Intro to XML Activity, and signup for a topic for assignment 1. Due by 5 PM CST August 30th
Class 2 Monday August 30th	Overview of Distributed Systems 2.1 PHP development and Overview of Assignment 2 2.3 Dist. Systems Generations 1 to 5. 2.4 Distributed Architecture 2.5 Distributed Web Security (online only)	During this week: Read: Linthicum Chapter 1 Optional - Umar pp 1-5 to 1-20, 6-9 to 6-47 Watch: Topics 2.5 Submit: Questions on Web Security. Due by 5 PM CST August 6th
Class 3 Wednesday September 6th	Middleware and Web Services 3.1 Introduction to Middleware 3.2 Introduction to Web Services 3.3 B to B Integration (online only) 3.4 ESB and Integration Problems 3.5 Introduction to Assignment 4 the EFS Project	During this week: Read: Linthicum Chapter 2 Optional - Umar pp 7-15 to 7:46 Watch: none Submit: Assignment 1 Due by 5 PM CST September 13th
Class 4 Monday September 13th	Business Process Management / Cloud Computing 4.1 One Premise and Cloud based Contact Centers 4.4 Overview of Assignment 2 Part 2 4.5 Overview of Assignment 3 (online only)	During this week: Read: Linthicum Chapter 3 Umar pp 11-2 to 11-25 Watch: none Submit: Questions on B2B Integration : Due by 5 PM CST September 20th
Class 5 Wednesday September 20th	BPM/SOA and EFS Project 5.1 Discuss using Portals to integrate systems 5.2 SharePoint Portal and Web Services 5.2 Overview Assignment 4 – Team Systems Integration Project 5.3 BPM and SOA part 2 5.4 Overview of Test 1	During this week: Read: Linthicum Chapter 4 Watch: none Submit: Assignment 2 Part 1 (Part 1 PHP Web Application that consumes REST and SOAP based web services) is due in Blueline by 1 PM CST September 22nd. As soon as I correct part 1, I will send you an email so you can shut your Amazon virtual machine off.
Class 6 Monday September 27th	Mobile Development Contact Center and Agile Development 6.1 Introduction to Cloud Computing 6.2 Test 1	During this week: Read: Linthicum Chapter 5 Optional - Umar pp 2-23 to 2.52 Watch: none Submit: Assignment 4, Milestone 1 Due by 5 PM October 4th
Class 7 Wednesday October 4th	Mobile Development Contact Center and Agile Development 6.1 Mobile Development and Integration 6.3 Agile/Scrum Project Management (online only)	During this week: Read: Linthicum Chapter 6 Optional Umar pp 4-5 to 4-16 Watch: Topics 6.3 Submit: Assignment 4, Milestone 2 Due by 5 PM October

	7.3 Distributed Data Integration	11 th
Date	Topics and Lectures	Assignments Due
Class 8 Monday October 11th	Business Rule Management Systems and Human Change Management 7.1 Introduction to Business Rule Management Systems 7.2 Human Change Management 7.4 Overview of Test 2	<u>During this week:</u> <u>Read:</u> Linthicum Chapter 7 Optional - Umar pp 9-2 to 9-38 <u>Watch:</u> none <u>Submit:</u> Assignment 2 – Part 2 (Create a web service on your PHP Server and consume it on a Microsoft SharePoint Server). This is due in BlueLine by Saturday October 13th by 1 PM CST. As soon as I correct part 2, I will send you an email so you can shut your Amazon virtual machine off. Assignment 4, Milestone 3 Due by October 25th at 5 PM CST.
Class 9 Wednesday October 25th	Integrating on premise and cloud based systems 8.1 Integrating cloud based and on premise systems 8.2 Distributed Transaction Processing	<u>During this week:</u> <u>Read:</u> Linthicum Chapter 8 Optional - Umar pp 12-25 to 12-38 <u>Watch:</u> Topics 9.1 and 9.2 <u>Submit:</u> Assignment 3 and Assignment 4, Milestone 4 Due by November 1st at 5 PM CST. Be ready to give team presentations during class 10.
Class 10 Monday November 1st	9.1 Performance Challenges in Distributed Systems 9.2 <u>Assignment 4 team presentations</u>	<u>During this week:</u> <u>Read:</u> none <u>Watch:</u> <u>Submit:</u> Paper and updated presentation for Assignment 4 Due by November 8 th
Class 11 Wednesday November 8th	11.1 <u>Test 2</u>	<u>During this week:</u> <u>Read:</u> None <u>Watch:</u> none <u>Submit:</u> none