University of Nebraska Omaha

COURSE:	ISQA 8380 Managing the Distributed Computing Environment
SESSION:	Summer 2011
TIME:	Monday Night from 6PM to 9:00PM (You will also be participating in some virtual classes over the web for some topics at you own pace.
PLACE:	PKI 276
INSTRUCTOR:	Dr. George Royce
OFFICE:	Room 367
OFFICE HOURS:	Before or after class by appointment and regularly my hours are 5-6 PM on Friday afternoons and 9-11 Saturday mornings (my website http://roycesite.com/george for any changes in these office hours).
E-Mail	george.royce@gmail.com
PHONE and IM:	Home: 402-216-0414 leave a voice message if I am not there. Cell phone is 402-312-7929 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. For email, please use my gmail account.

Course Description:

This course is designed to give students grounding in the concepts, issues, and tools needed to manage distributed computing & Internet-based environments. It focuses on the technologies underlying distributed computing and Internet-based systems; the issues faced in developing, integrating, migrating to, and managing such systems; and the strategic relationship between business processes and the information systems architecture. The goal of the course is to equip students to make the architecture and infrastructure-related decisions needed for successful development and use of contemporary client/server and Internet-based systems.

Prerequisites:

ISQA 8310 - Business Data Communications or ISQA 3400 - Business Data Communications or equivalent, AND ISQA 3310 - Managing the Database Environment or ISQA 8050 - Data Organization and Storage or equivalent. Work experience in either of these areas may satisfy the requirement.

Objectives:

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

- Understand the strategic potential of distributed computing systems for business processes.
- Provide and understand a framework for classifying distributed computing architectures and distributed applications.
- Map out an information systems architecture and assess the fit between existing and needed architectures.
- Classify and evaluate the numerous flavors of middleware in order to make decisions about middleware acquisition.
- Understand the role of the transaction processing, object-oriented, and Internet-based technologies in distributed enterprise computing and make decisions about how and when to apply them.
- Understand the factors that contribute to the performance of client/server systems and incorporate this understanding in the design of client/server systems.
- Understand the many issues, tradeoffs, and decision points in developing, integration, and managing distributed applications.

- Understand the impact of web services and their standards on distributed computing development and systems integration.

Text:

Enterprise Architectures and Integration with SOA – Concepts, Methodoly and a Toolset.
Amjad Umar, NGE Solutions, Inc. January, 2010. ISBN: 0-9727414-002. Available at the bookstore and on Amazon.

Grading:

Activity	Points	Date Due
Class discussion, participation in blackboard forums and answers to questions for virtual classes.	80	End of Class
Assignment 1 – Integration Case Study and Middleware Review	80	July 18th
Assignment 2 – PHP web application that consumes a web service connects to a Microsoft SharePoint Server	180	P1 – July 25th P2 – August 3rd
Assignment 3 – Cloud based workflow application integration	90	August 8th
Assignment 4 – EFS Systems Integration Group Project	170	August 8th
1st Exam	200	July 25th
2nd Exam	200	August 11th
Total	1,000	

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Points	*Grade*
97-100%	A+
93-96%	A
90-92%	A-
87-89%	B+
83-86%	B
80-82%	B-
77-79%	C+
73-76%	C
70-72%	C-
67-69%	D+
63-66%	D
60-62%	D-

Class Outline:

Class 1 **Wednesday, July 6th**
Topics: Introductions, Review Assignments 1 through 4, Overview of Class, Business Integration model, Application and integration Architecture, Models of Computing, 1st to 4th Generation Computing, Basic Web, Dynamic Web, Introduction to PHP and MySQL
. **Readings:** **UMAR** Pages 1-4 to 1-44
Reminder: **Complete the Student Information Sheet on Blackboard by end of class**

Class 2 **Monday, July 11th**
Topics: Review responsibilities for assignments 3 and 4 and determine teams for assignment 4, XML, Web Services, Tiered Architectures, Business Integration model, Application and integration Architecture, Models of Computing, 1st to 4th Generation Computing, Basic Web, Dynamic Web, Introduction to PHP and MySQL, Client Server, REST, AJAX, SOA, IT Architecture
Virtual Class: B to B Integration
Readings: **UMAR** Pages 6-3 to 6-48 and Pages 8-3 to 8-36 and 5-19 to 5-46

Class 3 **Wednesday, July 13th**
Topics: SOA, Message Queuing (MQ), Message Broker, Enterprise Service Bus, Screen Scraping, Remote Procedure Call, Distributed Data Integration, Application Server, Transaction Server, Web Service, Mashups
Virtual Class: Security in Distributed Systems
Readings: **UMAR** Pages 7-2 to 7-18 and 7-27 to 7-48

Class 4 **Monday, July 18th**
Topics: Contact Center Integration, Voice Response Unit, CTI (Computer telephone integration), Automated Call Distribution, contact center, workflow, skill based routing, screen pop, predictive dialer, customer relationship manager software, Agile OAD (overall application design), Release plan, Swim Lane Diagram, process flows, cost benefit analysis, technical costs, capital costs, end user costs, administrative costs, human change management, communication plan, training plan.
Virtual Class: Agile project management using SCRUM
Assignment 1 is due in Blackboard drop box by 11 PM

Class 5 **Wednesday, July 20th**
Topic: Message Broker, webtop, portal, enterprise portal, horizontal enterprise portal, employee portal, externally facing portal, single sign-on, inter-portlet communications, portal content management.
Virtual Class: Human Change Management
Reading **UMAR** Pages 7-19 to 7-26

Class 6 **Monday, July 25th**
Topics: **Portal Integration,** SharePoint Portal
First Test
Readings: **UMAR** Pages 4-5 to 4-15
Assignment 2 – Part 1 is due on server and zipped in Blackboard drop box by 11 PM

Class 7 **Wednesday, July 27th**
Topics: Objects, Components and Services, Service Oriented Architecture – a deeper dive and Business Rule Driven Systems
Readings: **UMAR** Pages 9-4 to 9-40 and 10-4 to 10-38
Assignment 4 – Milestone 1 is due in SharePoint Team Site by 6 PM

Class 8 **Monday, August 1st**
Topics: Distributed Data Services, Software as a Service
Assignment 4 – Milestone 2 is due in SharePoint Team site by 6PM

Class 9 **Monday, August 3rd**
Topics: Distributed Transaction Processing, Mobile and Wireless Device and Application Integration.
Virtual Class: SOABPM Part 2, Performance and Testing in Distributed Systems
Readings: **UMAR** Pages 13-3 to 13-43
Assignment 2 – Part 2 is due on server and zipped in Blackboard drop box by 11 PM

Class 10 **Monday, August 8th**
Topics: Mobile and Wireless Device Application Integration
Assignment 3 is due in Blackboard by 11 PM
Assignment 4 – Milestone 3 in SharePoint Team site by 6 PM

Class 11 **Wednesday, August 11th**
Topics: **Summary of** Student Presentations, **and** **Final Exam**
Assignment 4 – Milestone 4 in SharePoint Team site by 6 PM