University of Nebraska Omaha

COURSE: ISQA 4380 Distributed Technologies and Systems – Online
SESSION: Spring 2011
INSTRUCTOR: Dr. George Royce
OFFICE: Room 367
HOURS: I will be available to take chat/IM and calls on Monday from 5:30 to 6:30, Tuesday from 5:30 to 6:30 and Saturday from 10:30 to 11:30(my website http://roycesite.com/george for any changes in these hours). You can also email me and we can set up a time to discuss any questions you have.
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:

The course introduces students to concepts, issues and tools needed to develop distributed computing systems. Topics include distributed systems architecture, middleware, Internet-based systems development, security and performance. Hands-on systems development using current technologies is provided. 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, RIA Internet-based systems and mobile systems.

Prerequisites:

ISQA 3310 - Managing the Data Base Environment

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 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, Internet-based technologies and rich internet applications 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 impact of web services and their standards on distributed computing development and systems integration.
- Develop a modest size web application which accesses a database and external web services.
- Develop a web service which can be consumed by other applications.

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
Assignment 1 – Middleware Review and Case Study	120	Feb 7th
Assignment 2 – PHP web application that consumes a web service and then connects to a Microsoft SharePoint Server	180	P1 – Feb 28th P2 – Mar 28th
Assignment 3 – Cloud based workflow application integration	90	April 11th
Assignment 4 – EFS Systems Integration Project	180	April 25th
Take Home Final Exam	180	May 2nd
Participation activities and integration problems based on the materials covered in the lectures and the book	250	Graded each week
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-

Final Grade: Your final grade in this course is based on the percentage of points that you receive out of the total maximum 1000 possible points for the course. The grade scale is shown in the above scale.

Best Practices for Online Class

Every online class is a little different just like the differences you experience in traditional classes. So even if you have taken other other online classes, you need to know about my expectations and format.

Our course is accessible through the Blackboard (BB) site and all documents are posted to blackboard. You will submit assignments; check for announcements and post on discussions boards at Blackboard. You will also listen to the lectures via links posted on Blackboard. The course syllabus lays out the course schedule and what is due each week. It also provides readings that you need to accomplish each week.

Try to set aside a regular time for working on this class each week. Start by checking the course schedule to see what is required for the week. Read the required readings, listen to the lectures and then prepare the homework for each week. You have two kinds of assignments. These are weekly participation assignments and four assignments that will be described in the first two sessions of the class. The deadlines for all assignments is in the schedule. Refer to the schedule often! There is something due every week. Check out the "Submit" directions in the schedule.

All deliverables must be submitted on time. One key benefit of an online class is the flexibility. You can set your own schedule. You will know what's coming up and you can work anytime during the week. But you cannot miss the deadlines. Since there are no class sessions to attend, it is your responsibility to view the online lectures, read the textbook chapters, and do the weekly problems and assignments. Don't underestimate the work, and don't underestimate the importance of keeping yourself motivated and on schedule.

Course Policies and Reminders

Late Assignments: 10% deduction per day late. Assignments will not be accepted after a week late unless you have been given permission to do so by the instructor.

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.

Sources of Information: You must always give the source of your information. It may be information you find on the web, in a book or even in your work life. You must always cite the source!

Disabilities: ADA Notice – Accommodations are provided for students with verified disabilities. For more information, contact Services for Students with disABILITIES. In EAB 117 or 554-2872, TTY 554-3799.

Course Schedule:

You are responsible for any schedule changes posted in Blackboard (BB) Announcements. All lectures are accessible via the Web at the URL posted in the BB site each week.

Date	Topics and Lectures	Assignments Due
Week 1 **Jan 10th**	**Course Introduction** 1.1 Welcome and Introduction to ISQA 4380 1.2 Business Value of Distributed Systems 1.3 Web Development Part 1 1.4 Web Development Part 2	**Due by end of first week of semester:** **Read:** Course Syllabus (posted in Blackboard Course Documents) **Watch:** Lectures 1.1, 1.2, 1.3, and 1.4 **Before Jan 17th:** Be sure to check out your ID and password at the vulcan site.
Week 2 **Jan 17th**	**Overview of Distributed Systems** 2.1 Web Development Part 3 and overview of Assignment 2 2.2 Overview of Assignment 1. 2.3 Overview of XML in Distributed Systems 2.4 Distributed Systems Generations 1 to 5.	**Due by noon Jan 17th** **Read:** Umar pp 1-5 to 1-20, 6-9 to 6-47 **Watch:** Lectures 2.1, 2.2, 2.3 and 2.4 **Submit:** Participation Activity 1. See detailed requirements in BB Assignments. **Before Jan 24th:** Be sure to sign up for a topic for Assignment 1 – Middeware Review and Case Study
Week 3 **Jan 24th**	**Middleware** 3.1 Introduction to Middleware 3.2 Introduction to Web Services 3.3 Distributed Web Security	**Due by noon Jan 24th** **Read:** Umar pp 7-15 to 7:46 **Watch:** Lectures 3.1, 3.2 and 3.3 **Submit:** Participation Activity 2. See detailed requirements in BB Assignments.
Week 4 **Jan 31st**	**Web Services** 4.1 Web Services, PHP and the ESB 4.2 Business to Business Systems Integration	**Due by noon Jan 31st** **Read:** Umar pp 11-2 to 11-25 **Watch:** Lectures 4.1 and 4.2 **Submit:** Participation Activity 3. See detailed requirements in BB Assignments.
Week 5 **Feb 7th**	**Business Process Management/Workflow and SOA** 5.1 BPM/Workflow 5.2 Call/Contact Center Integration	**Due by noon Feb 7th** **Read:** Umar pp 2-23 to 2.52 **Watch:** Lecture 5.1 and 5.2 **Submit:** Assignment 1 – Middleware Review and Case Study
Week 6 **Feb 14th**	**Portal Technology for Integration** 6.1 Discuss using Portals to integrate systems 6.2 SharePoint and Portal and Web Services 6.3 Overview of **Assignment 2 Part 2**	**Due by noon Feb 14th** **Read:** Umar pp 4-5 to 4-16 **Watch:** Lecture 6.1, 6.2 and 6.3 **Submit:** Participation Activity 4. See detailed requirements in BB Assignments.
Week 7 **Feb 21st**	**Service Oriented Architecture (SOA)** 7.1 Service Oriented Architecture and BPM 7.2 Externalizing Business Rules in BR Management Systems	**Due by noon Feb 21st** **Read:** Umar pp 9-2 to 9-38 **Watch:** Lecture 7.1 and 7.2 **Submit:** Participation Activity 5. See detailed requirements in BB Assignments.
Week 8 **Feb 28th**	**Enterprise Reuse** 8.1 Objects, Components and Services in Distributed Systems 8.2 Enterprise Reuse Example 8.3 Overview of **Assignment 4**	**Due by noon Feb 28th** **Read:** Umar pp 9-21 to 9-26 **Watch:** Lecture 8.1, 8.2 and 8.3 **Submit:** Assignment 2 – Part 1 PHP Web Application that consumes REST and SOAP based web services
Week 9 **Mar 7th**	**Data Integration** 9.1Distributed Data Integration 9.2 Operational Data Stores and Data Warehouses	**Due by noon Mar 7th** **Read:** Umar pp 12-25 to 12-38 **Watch:** Lecture 9.1 and 9.2 **Submit:** Participation Activity 6. See detailed requirements in

		BB Assignments.
Date	**Topics and Lectures**	**Assignments Due**
Week 10 **Mar 14th**	**Agile/SCROUM in Systems Integration Projects** 10.1 Agile/Scrum 10.2 Human Change Management	**Due by noon Mar 14th** **Read:** None **Watch:** Lecture 10.1 and 10.2 **Submit:** Participation Activity 7. See detailed requirements in BB Assignments.
Mar 21st	**Spring Break Week – No Assignments**	**Enjoy the break!**
Week 11 **Mar 28th**	**Introduction to Could Computing** 11.1 Introduction to Cloud Computing 11.2 Introduction to Salesforce and Force.com and **Assignment 3**	**Due by noon Mar 28th** **Read:** None **Watch:** Lecture 11.1 and 11.2 **Submit:** Assignment 2 – Part 2 Create a web service on your PHP Server and consume it on a Microsoft SharePoint Server
Week 12 **April 4th**	**Software as a Service** 12.1 Integrating Software as a Service Systems with Corporate, On Premise Systems.	**Due by noon April 4th** **Read:** None **Watch:** Lecture 12.1 **Submit:** Assignment 3 – Cloud based workflow application
Week 13 **April 11th**	**Mobile Applications** 13.1 Mobile Application Development – Return to Client Server!	**Due by noon April 11th** **Read:** Umar pp 13-1 to 13-22 and 13-38 to 13-45 **Watch:** Lecture 13.1 **Submit:** Assignment 4 Milestone 1
Week 14 **April 18th**	**Distributed Transaction Processing** 14.1 Distributed Transaction Processing	**Due by noon April 18th** **Read:** Umar pp 5-37 to 5-48 **Watch:** Lecture 14.1 **Submit:** Assignment 4 Milestone 2
Week 15 **April 25th**	**Performance in Distributed Systems** 15.1 Performance Challenges in Distributed Systems 15.2 Discuss Final Exam	**Due by noon April 25th** **Read:** None **Watch:** Lecture 15.1 and 15.2 **Submit:** Assignment 4 Systems Integration Project Final Deliverable
Exam Week **May 2nd**	**Final Exam**	**Due by Noon on May 2nd.**