CIS 8090
Managing Enterprise Systems / Enterprise Architecture

CATALOG DESCRIPTION

This course will explore the concepts, principles, and state of the art methods in managing enterprise systems focusing on architectures, including architectural styles, architecture description languages (ADL), software connectors, dynamism in architectures, and architecture based testing and analysis. The course will help with to understand the role of architecture in software engineering, specifically during requirements analysis, design (including object oriented design and related notations, such as UML), and implementation. The course will also cover practical applicability of architectures in software reuse and component interoperability platforms (such as CORBA, Enterprise JavaBeans, COM/ DCOM, and .NET).

Course Credit: 3.000 Credit hours

Prerequisite: CIS 8030. CSP: 1, 2, 3, 4, 5, 6, 7, 8.

COURSE OBJECTIVES

Upon completion of this course, students will be able to:

- Define Enterprise Architecture approach to managing large systems, how its evolved, and its current state
- Differentiate the relationships between collections of system components and enterprise architectures
- Recognize and understand the business drivers that direct enterprise architecture development
- Analyze and evaluate enterprise architecture options including styles, description languages, and integration tools
- Recognize software architectural patterns/frameworks and their relationship to enterprise conditions and goals
- Identify key challenges and their solutions critical to the successful design and implementation of an Enterprise Architecture
- Understand how to utilize the role of architecture in achieving business value and agility
- Postulate the future of how to manage enterprise systems given rapid changes in both business and technology

COURSE TEXT


Related Books and Readings:
eBook on Books 24 x 7 through GSU Library
Handbook of Enterprise Systems Architecture in Practice by Pallab Saha (ed)
Enterprise Architecture at Work, Marc Lankhorst (ed), Springer, 2nd Ed © 2009
Study.Net
Research:

<table>
<thead>
<tr>
<th>Grading Item</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Individual Examinations (2)</td>
<td>40%</td>
</tr>
<tr>
<td>Group Design Project &amp; Presentation (1)</td>
<td>25%</td>
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<tr>
<td>Group Sr. Mgmt. Briefings Presentations (2)</td>
<td>10%</td>
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<tr>
<td>Individual Briefing Postings (2)</td>
<td>10%</td>
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<tr>
<td>Class Participation:</td>
<td></td>
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<tr>
<td>Pop Quiz/s, Attendance, Participation, Preparation</td>
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<tr>
<td>Total</td>
<td>100%</td>
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Additional readings and links – TBA – see D2L course site for updates

Online Services
Desire2Learn (D2L) site for class

Collaborate (online collaboration system)

Class recordings
TBD

COURSE GRADING AND REQUIREMENTS

Brief Descriptions
Please ask any questions you may have to clarify what you are expected to do.

Individual Examinations (2): Individual examinations will primarily focus on the course materials and discussions from the assigned readings and class lectures and will be composed of short answer questions.

Group Design Project & Presentation (GDPP): The Group project is designed to take a complex, real-world, situation for a company/organization, examine the problem, and then present a decision brief on points such as do they use any enterprise architecture framework? A format for the brief will be provided. You will be expected to answer questions such as how have they used EA, how has it evolved. You will be expected to go beyond the case documents and interview real people to determine answers to questions such as what
framework do they use, what do you suggest and why, can their Enterprise Architecture be improved? Each Group will do a presentation in class and lead the discussion (30 minutes).

**One (1) decision brief is required for each group for the course**

Each group should submit their topic and an initial prospectus to make sure that their project is appropriate and can be successful by the end of class 3. Each group will analyze the problem, propose and design the potential solution using technologies, techniques and products discussed in class. You will be graded on the content – how good was the analysis done based on facts? Options suggested and reasons for the same, the presentation and handling of Q&A.

**Group Senior Management Briefing Presentation (GSMBP)**
Similar to the Group Design Project & Presentation, this group assignment involves taking a specific current issue and developing a document and presentation that would be suitable for briefing a senior management audience. Topics posted for the IBP assignment can be used along with additional references. The document can be only 1 page and the presentation can only be 10 minutes in length plus 10 minutes of Q&A. The idea is to be prepared to present a current topic to senior management in a clear and succinct fashion and to be able to respond to questions. **Two (2) briefing presentations are required for each group for the course**

**Individual Briefing Postings (IBP):** – Managing technology for organizations through the use of Enterprise Architecture continues to evolve. The objective of this exercise is for students to research on what is happening with Enterprise Architecture in the business world and add/contribute relevantly to what is being taught in class. Each posting should be one paragraph summary of what the student researched and found. All postings need to cite relevant articles from where the idea was developed. It is also expected that students do positively contribute / contradict discussion points with relevant citations. Examples to cite might be (but are not limited to) - Success stories of Enterprise Architecture implementation. How does business see Enterprise Architecture today? What are the challenges faced in implementing the same? How is the future? Compare / Contrast frameworks etc. **Two (2) postings are required for each student for the course**

**Class Participation:** Students should be prepared for every class and that includes making sure that they have studied the assigned material in advance. Since this is a lecture/discussion-oriented course, regular attendance and participation is required. Simply showing up for class, important as it may be, is not to be equated with participation. Students should make an effort to contribute to each and every class discussion and online with responses to other students’ postings. Students should expect to be "cold called" throughout the course and should be prepared for every class. Any student can be asked to present a summary of the reading and his ideas / views on the reading with justification. In evaluating your class participation in discussions, both the quantity and quality of participation is taken into account. The quality of your contributions to discussions will be evaluated using the following criteria:

- If "cold called," was the student prepared?
- Does the contribution in class or online represent a solid analysis and some insight into the topic being discussed or is it just a reiteration of facts? Does the contribution move the discussion to an important area or does it just rephrase what has already been said? Does the contribution demonstrate useful ideas, coherently and succinctly expressed?
• Does the contribution in class or online demonstrate an ability to listen to and build from what others have said? Does the contributor regard, respect and acknowledge other’s contributions If the contributor disagrees with other’s positions or analysis does s/he offer constructive disagreement?
• Is the student lacking in involvement (silence, detachment or disinterest) or leading our discussion into unrelated topics? Is the student spending undue amount of time on minor points? Is the student making long rambling comments without any substantive contribution to the discussion?

This course focuses on readings, analysis, and discussions of materials and cases and does not include a Final Exam. The Group Design Project and Presentation will be considered as a summative evaluation of each student’s performance.

**COURSE SCHEDULE (Note: This schedule is subject to change. Watch for announcements on D2L)**

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<tr>
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<th>Readings and Deliverables</th>
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| 1     |      | • Course Introduction  
      |       | • Review of Syllabus    
      |       | • Overview of *Enterprise Architecture as Strategy* by RWR and additional resources.  
      |       | • Background – What’s an Enterprise Architect and why do I need one?  
      |       | • Toward Models of Enterprise Architecture  
      |       | • Please complete the Graduate Student Data Sheet if you have not already done so.  
      |       | • Please mention 3 things that you want to take away from this course (besides an A).  
      |       | • Enterprise Architect  
      |       | • The Case for Enterprise Architects  
      |       | [http://www.cio.com/article/472429/The_Case_for_Enterprise_Architects](http://www.cio.com/article/472429/The_Case_for_Enterprise_Architects)  
<pre><code>  |       | RWR – through pg 45 |
</code></pre>
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| 2     |      | - Group Sr. Mgmt. Briefings  
- Discussion of the EABOK  
- Building the Foundation Part 1: Operating Models  
- Building the Foundation Part 2: Models of Enterprise Architectures  
- EA Frameworks  
- Modeling strategies for representing EA:  
- Architectural Description Languages  
- Intro to UML | Groups 1-4  
Read and review the EABOK  
RWR – through pg 91  
RWR – through pg 117 (Kindle location 798)  
- SIM Guide to EA – Chapter 2 (skip Actor-Network Theory section)  
- Simple Architectures for Complex Enterprises by Roger Sessions  
Microsoft Press © 2008 - Chapter 1 - Enterprise Architecture today (Zachman, OpenGroup, FEA)  
- TOGAF  
- FEA –  
- ISO 1471  
Wikipedia’s UML Guide |
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<td>3</td>
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<td>• Building the Foundation&lt;br&gt;Part 3: IT Engagement Models&lt;br&gt;• Enterprise Architecture in practice&lt;br&gt;• Guest Speaker - UPS&lt;br&gt;• Building Enterprise Architecture &amp; Implementation&lt;br&gt;• Issues in Implementation</td>
<td><strong>Exam I – all materials from Classes 1 &amp; 2</strong>&lt;br&gt;RWR—through pg 187&lt;br&gt;SIM Guide to EA – Chapter 3&lt;br&gt;Readings, links, Case Studies TBA&lt;br&gt;Open Group White paper – World Class EA&lt;br&gt;A Real Options Perspective to EA as an Investment Activity&quot;, by Saha <a href="http://www.opengroup.org/architecture/wp/saha-2/ROA_and_Enterprise_Architecture.htm">http://www.opengroup.org/architecture/wp/saha-2/ROA_and_Enterprise_Architecture.htm</a>&lt;br&gt;Setting up a New EA or BA Practice – N. Malik <a href="http://blogs.msdn.com/b/nickmalik/archive/2012/05/20/setting-up-a-new-ea-or-ba-practice.aspx">http://blogs.msdn.com/b/nickmalik/archive/2012/05/20/setting-up-a-new-ea-or-ba-practice.aspx</a></td>
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<tr>
<td>4</td>
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<td>• Group Sr. Mgmt. Briefings&lt;br&gt;• The “Art” of Integration&lt;br&gt;• Evaluating Enterprise Architecture maturity&lt;br&gt;• Enterprise Architecture for Outsourcing&lt;br&gt;• What is a “Good” Architecture?&lt;br&gt;• The Future and EA the Cloud&lt;br&gt;• Business issues&lt;br&gt;• Technology Issues&lt;br&gt;• Mobility&lt;br&gt;• Web 3.0</td>
<td>Groups 1-4&lt;br&gt;Handbook of Enterprise Integration, Sherif, Chapter 14 (see Books 24x7)&lt;br&gt;Maturity Still Matters – MIT CISR, Ross and Beath – Posted to myRobinson Documents&lt;br&gt;Maturity Assessment for the Enterprise Architecture (EA) Function, Badger <a href="http://www.eaglobals.com/wp-content/uploads/enterprise-architecture-maturity-assessment-10.pdf">http://www.eaglobals.com/wp-content/uploads/enterprise-architecture-maturity-assessment-10.pdf</a>&lt;br&gt;RWR Chapter 7&lt;br&gt;Cloud Computing for Enterprise Architectures, Mahmood and Hill, Chapters 1,3,4 (see Books 24x7)&lt;br&gt;Listen to PodCast – Steve Nunn COO Open Group - <a href="http://opengroupblog.files.wordpress.com/2011/03/briefingsdirect-open-group-coo-steve-nunn-on-ea-professional-groups.mp3">http://opengroupblog.files.wordpress.com/2011/03/briefingsdirect-open-group-coo-steve-nunn-on-ea-professional-groups.mp3</a>&lt;br&gt;Cloud Computing for Enterprise Architectures, Mahmood and Hill, Chapters 10-13 (see Books 24x7)</td>
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<tbody>
<tr>
<td>5</td>
<td></td>
<td>Last Class – Grades due</td>
<td><strong>Exam II – all materials from classes 3 &amp; 4</strong></td>
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<td>Group Design Project Documents Due</td>
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<td>Group Presentations – 30 minutes</td>
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### Attendance Policy

Attendance is part of the Class Participation grade; students should attend class. If there is a compelling reason for missing class, that cannot be avoided, please let me know so this will not impact your grade. The Instructor should be notified before class meetings or as soon as possible after. Please be familiar with the University Academic Regulations for attendance.

### Make-up Examination Policy

Make-up Examinations will be handled on an individual basis. If an individual cannot make a scheduled Examination, the Instructor needs to know before the Examination, if possible.

### Withdrawing

A 'W' grade will be assigned if a student withdraws before the GSU designated mid-point of the semester (6/29/2012) while maintaining a passing grade. A 'WF' will be assigned if a student withdraws before the middle of the semester while doing failing work. See the Graduate Student Catalog for more details [http://www2.gsu.edu/~catalogs/2012-2013/graduate/](http://www2.gsu.edu/~catalogs/2012-2013/graduate/) under University Academic Regulations Section 1314, Revision of Class Schedule.

### Students with Disabilities Policy

Please be familiar with the University Policies and please notify the Instructor if you have any special needs relevant to the course.

### Academic Honesty Policy

Students engaging in activity related to and including: Plagiarism, Cheating on Examinations, Unauthorized Collaborations, Falsification, or Multiple Submissions are subject to Student Discipline. Please see [http://www2.gsu.edu/~wwdos/codeofconduct.html](http://www2.gsu.edu/~wwdos/codeofconduct.html) for more details.