IS 685  Enterprise Architecture & Integration

Spring 2016

Course Description:
An enterprise is a collection of organizations that share a common set of goals and objectives. An enterprise can be a business unit, an entire corporation, government agency or a collection of businesses joined in partnership. Each enterprise has requirements for the right technology, software engineering methods, and software architecture style to create a good IT and IS infra-structure. This course will provide students with a theoretical and practical understanding of the subject areas related to EA. Special emphasis is placed on the emerging technologies such as SDN, M2M, and cloud computing. To appreciate the foundations and decision making framework of EA some time will be devoted to understand the business processes and strategies.

Required Background: Student is expected to have basic understanding of corporate structure, financial statements, operations, strategy, system analysis and design. Familiarity with technological evolution in wearables, communications, web services and cloud is essential to fully benefit from this course.

Link to catalog for more details  http://catalog.njit.edu/graduate/computing-sciences/information-systems/#coursestext

Contact Information
Professor: Nahata, Hans Raj
Office Hours: By Appointment
Phone: (914) 584 - 1920
E-Mail: hnahata@NJIT.edu
Location: CKB (Central King Building) # 313

Meeting Day & Time: Saturday: 9:00 AM – 11:55 AM (Lecture)

Course Materials
4. (Optional) Understanding Enterprise SOA by Eric Pulier and Hugh Taylor, Manning Publications

I will be distributing the class notes / assignments via moodle.
**Grading**

<table>
<thead>
<tr>
<th>Item</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final</td>
<td>30</td>
</tr>
<tr>
<td>Midterm</td>
<td>20</td>
</tr>
<tr>
<td>Quizzes (4 best out of 5, 5% each)</td>
<td>20</td>
</tr>
<tr>
<td>Group Project</td>
<td></td>
</tr>
<tr>
<td>- Midterm Deliverable</td>
<td>10</td>
</tr>
<tr>
<td>- Final Deliverable</td>
<td>20</td>
</tr>
<tr>
<td><strong>TOTAL POINTS</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

**Grading Scale**

Final grades (A, B+, B, C+, C, F) will be relative; and will closely follow the spread shown here.

<table>
<thead>
<tr>
<th>GRADE</th>
<th>GPA</th>
<th>SIGNIFICANCE</th>
<th>Overall Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.0</td>
<td>Excellent</td>
<td>➢ 95%</td>
</tr>
<tr>
<td>B+</td>
<td>3.5</td>
<td>Good</td>
<td>➢ 87%</td>
</tr>
<tr>
<td>B</td>
<td>3.0</td>
<td>Acceptable</td>
<td>➢ 80%</td>
</tr>
<tr>
<td>C+</td>
<td>2.5</td>
<td>Marginal Performance</td>
<td>➢ 70%</td>
</tr>
<tr>
<td>C</td>
<td>2.0</td>
<td>Minimum Performance</td>
<td>➢ 60%</td>
</tr>
</tbody>
</table>

**Grading Issues:**

Occasionally, grading errors occur and/or students have legitimate concerns/complaints about graded materials. All grading questions/concerns must be initiated within seven days of the date the material was returned. Otherwise, you forfeit your right to dispute the grade at a later date. For example, if the material was returned on September 8th, you must submit your concern in an email to the instructor no later than September 15th. No Whining, No crying and No grade negotiation.

**Description of Requirements**

1. **Homework:** You are encouraged to do the homework in groups. Discuss and debate with your classmates to gain deeper understanding of the material.
2. **Exams:** You are expected to be on time for all exams, and extra time will not be allocated to any student who arrives late.

**Quizzes, Midterm, Final:** Closed book and notes. You are NOT permitted to use cell phone / laptop / tablet etc. during the exam. You may bring a regular non-scientific
calculator.

Students who are registered with Disability Services and who may need individual arrangements should schedule a meeting with the instructor to work out the details.

No student will be excused from taking any exam, except for valid documented medical reasons, or family emergency, and any of those situations should be attested to by a medical practitioner or other suitably qualified professional. The exam schedule is available at the beginning of the term so make your work/vacation/travel plans accordingly.

3. **Group Projects**: I will form the groups of size 3 or 4. For your project you are expected to meet periodically, split the work, do the research, do internal review and then make presentations. I would look for your overall understanding of the business needs, understanding of strategy, and familiarity with the technology. You will get to choose the topic from one of the following:
   a. Patterns in EA
   b. Role of EA in business decision making
   c. Quantitative and Qualitative Biases in business decisions
   d. Internet of Things
   e. Cloud Computing
   f. Identity & Access Management
   g. Data Security
   h. Software Defined Network & NFV
   i. Big Data & Analytics
   j. Six Sigma & EA
   k. UX Emerging Patterns
   l. Anything else that is equally interesting and challenging

**Secure Testing:**

Once the first student leaves the exam – no further late students will be permitted into the exam, and their exam will not be rescheduled and they will receive a zero. **No student will be permitted to leave the testing room during their exam time** – this includes using the restroom. **Cell phones and other communication devices are to be stored securely out of sight.** NO ear pieces are to be permitted during the exam (iPods etc.). No sharing of items (pens, pencils, calculators, erasers etc.) during the exam.

**Professionalism Policy**

- **Laptops, phones, PDA’s, and similar electronic devices are prohibited in class.** Please make sure these are turned off and put away before class begins. **No email, texting, tweeting, et al, or web surfing will be allowed in this class out of respect for others.** There is no need to use a laptop in this class; your brain is the most useful “computer” you can bring with you to class!
• **Attendance is expected and required.** It will be your responsibility to obtain class notes and/or handouts from blackboard, your classmates or me.

• **Students arrive on time.** On time, arrival ensures that classes are able to start and finish at the scheduled time. On time arrival shows respect for both fellow students and faculty and it enhances learning by reducing avoidable distractions.

• **Students are fully prepared for each class.** Much of the learning takes place during classroom discussions. When students are not prepared, they cannot contribute to the overall learning process. This affects not only the individual, but their peers who count on them, as well.

• **Written assignments are due on the date indicated** unless prior approval has been granted. Late assignments will receive a minimum of a one-grade reduction.

• **Students are conscientious both in giving feedback to the professor and other students through discussions or emails as well as adjusting their attitudes and behaviors in response to others’ opinions.** Students should review the *Student Code of Conduct*, as it discusses expectations of appropriate conduct in the classroom:

• **You are responsible for timely reading of and conformance with all administrative announcements.**

• **No extra-credit projects will be given at anytime during the semester.**

**Academic Integrity**

Integrity is important in the “real world” and the classroom alike. When doing your written graded assignments for this class, you are not permitted to copy material from assignments done by you in another class or assignments of other students who have taken this class or other classes in the past. Individual assignments are to be done individually, without collaborating with other students. Cooperation between teams in preparing team assignments is also prohibited. It is also a violation of academic integrity to sign in on an attendance sheet for someone who is absent from class, or to otherwise misrepresent one’s lack of attendance at class.

Clearly, activities such as sharing class notes or discussing in-class materials outside of class are not honor code violations. Indeed, such interactions are encouraged because it enhances learning.

You are strongly encouraged to read the full policy at: [http://www.njit.edu/academics/integrity.php](http://www.njit.edu/academics/integrity.php)

**Incomplete Grades**

Incomplete grades are granted under the conditioned described in the Department / University policies.

**Email Use**

The university encourages all official student email correspondence be sent only to a student’s NJIT email address. Email from students is considered official only if it originates from a NJIT email account. This is to address concerns regarding security and the identity of each individual in an email exchange. You may forward your NJIT email to other accounts if necessary by entering the required information in ‘settings’ of your NJIT email.
<table>
<thead>
<tr>
<th>S #</th>
<th>Important</th>
<th>Topics</th>
<th>References</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>First Day Handout</td>
<td>Conceptual Frame Work of Enterprise Architecture</td>
<td>EA: 1, 2, 3, 4 SOA: 4</td>
<td>B+S+T ; Cube approach. Gentle introduction to the topic</td>
</tr>
<tr>
<td>2</td>
<td>Group projects – teams, expectations.</td>
<td>Strategy</td>
<td>My notes</td>
<td>Roles and responsibilities at corporate level. Where would you reside. Competitive priorities and capabilities. Implications on EA.</td>
</tr>
<tr>
<td>3</td>
<td>Quiz 1</td>
<td>Process Analysis</td>
<td>My Notes</td>
<td>Processes are the key to understanding operations. How to document a process and measure it? Data organization and presentation. Mention Lean Six Sigma for completeness.</td>
</tr>
<tr>
<td>5</td>
<td>Quiz 2</td>
<td>Quality &amp; Performance, Lean Systems</td>
<td>My Notes</td>
<td>EA to reduce operational waste.</td>
</tr>
<tr>
<td>6</td>
<td>Return Q2</td>
<td>Architecture Impacting Requirements</td>
<td>My Notes</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Quiz 3</td>
<td>Web Services</td>
<td>SOA: 2, 3, 8</td>
<td>Why web services? Web-service security framework. SoA.</td>
</tr>
<tr>
<td>8</td>
<td>Mid Term – Exam &amp; UX</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Mid Term Presentations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Quiz 4</td>
<td>Development Life Cycle</td>
<td>Chapter 4 (Motiwalla)</td>
<td>System Development Life Cycle</td>
</tr>
<tr>
<td>12</td>
<td>Return Q4</td>
<td>Global Ethics &amp; Security Management</td>
<td>Chapter 10 (Motiwalla)</td>
<td>Ethics, Outsourcing, offshore, etc. Security –the most important commitment to customer</td>
</tr>
<tr>
<td>13</td>
<td>Quiz 5</td>
<td>Supply Chain Management</td>
<td>Chapter 11 (Motiwalla)</td>
<td>Impact of technology on SCM. SCM as driver for cost reduction and quality improvement. Integrating SCM with ERP.</td>
</tr>
<tr>
<td>14</td>
<td>Return Q5; Final Presentations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Final (Written) exam</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Date**
- 23-30 Jan
- 30-6 Feb
- 6-13 Feb
- 13-20 Feb
- 20-27 Feb
- 27-5 Mar
- 5-12 Mar
- **19-Mar Spring break**
- 12-19 Mar
- 19-Mar 26 Apr
- 16-Apr
- 23-Apr
- 30-Apr
- 7-May

**SN#**
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- **9 Spring break**
- 10
- 11
- 12
- 13
- 14
- 15