**IEE 530 – Enterprise Modeling**

**- Spring Semester, 2013 - Line Number 12408, 12443, 27625**

**Course Syllabus and Timeline**

###### Revision 1 – December 2012

**Course Description:**

This is a course dealing with the enterprise and how to model the enterprise. The course has been restructured from previous offerings to focus on the many dimensions of this problem. The context for this session is the notion of using IEE 530 as a launching pad for all courses in areas such as Systems Engineering and Software Engineering. The learning objectives for the course are as follows:

1. To understand the notion of a business process and business process engineering.
2. To have excellent working knowledge of how to model the enterprise.
3. To be able to effectively develop and apply the various enterprise modeling techniques.
4. To have a deep understanding of the evolution to standard reference architectures and the standard object structures evolving and their role in enterprise modeling and operation.
5. To have a very good working knowledge of how enterprise optimization tools can aid in the enterprise modeling efforts.

**Course Grading Plan:**

The course grade will be determined based upon the total points each individual students achieves in the following categories:

* Topical Assignment Preso 50 points
* Class Deliverable #1 (D1) 50 points
* Class Deliverable #2 (D2) 100 points
* Class Deliverable #3 (D3) 200 points
* Literature Review 200 points
* Total Available Points 600 points

We will expect those students taking the class on the web to simply deliver all their deliverables in power point presentations. These will be posted on the Course Digital Drop Box at the time designated in the syllabus.

**Instructor:**

Dr. Dan L. Shunk, 480-965-6330, Fax 965-8692, email: dan.shunk@asu.edu

1. **Absence & Make-Up Policies**

Accommodations will be made for religious observances provided that students notify the instructor at the beginning of the semester concerning those dates. Students who expect to miss class due to officially university-sanctioned activities should inform the instructor early in the semester. Alternative arrangements will generally be made for any examinations and other graded in-class work affected by such absences.

1. **Classroom Behavior**

Cell phones and pagers (must be/or state alternative rule) turned off during class to avoid causing distractions. The use of recording devices (is/is not) permitted during class. Any violent or threatening conduct by an ASU student in this class will be reported to the ASU Police Department and the Office of the Dean of Students.

1. **Academic Integrity**

All students in this class are subject to ASU’s Academic Integrity Policy (available at <http://provost.asu.edu/academicintegrity>) and should acquaint themselves with its content and requirements, including a strict prohibition against plagiarism. All violations will be reported to the Dean’s office, who maintain records of all offenses.

1. **Disability Accommodations.**

Suitable accommodations will be made for students having disabilities and students should notify the instructor as early as possible if they will require same. Such students must be registered with the Disability Resource Center and provide documentation to that effect.

IEE 530 – Enterprise Modeling

* **Spring 2013 Semester - Rev. 1, December 2012**

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| **Date** | **Module** | **Topic** |
|  |  |  |
| Jan 7 | 1 | **Intro:** Course Overview, Syllabus Review, Biases |
| Jan 9 | 2 - 1 | **Business View:** Business Process Overview, Strategic Role of Enterprise Modeling |
| Jan 14 | 2 - 2 | Using Enterprise Modeling Concepts, Collaborative Design Issues and the IPPD |
| Jan 16 | 2 - 3 | Global Supply Network Integration Issues |
| Jan 21 |  | No Class – University Holiday |
| Jan 23 | 3 - 1 | **Learning to See:** A Global View of Lean |
| Jan 28 | 3 - 2 | An Introduction to Value Stream Mapping and the Industry View on This + D1 Expectations |
| Jan 30 | 3 - 3 | Practices of Lean and What is Being Accomplished |
| **Feb 1**  **Friday** | 50 points | **Exercise #1 – Draw a Picture to Describe a Business Process, put on Power Point chart and post on the web – D1** |
| Feb 4 | 4 - 1 | **IDEF:** Overview of IDEF ~ “Should Be” |
| Feb 6 | 4 - 2 | “As Is” and “To Be” |
| Feb 11 | 4 - 3 | Simplification and the IDEF 0 / triple diagonal Methodology |
| Feb 13 | 4 - 4 | Detailed Exercise and Analysis of IDEF Model |
| Feb 18 | 4 - 5 | Extended IDEF Modeling, IDEF 1, IDEF 3, IDEF 4 and Organizational Modeling + D2 Expectations |
| Feb 20 | 4 - 6 | Using the Value Stream Map to Lean an Enterprise |
| Feb 25 | 5 - 1 | **Advanced Modeling Techniques**: XML, UEML |
| Feb 27 | 5 - 2 | Petri Nets |
| Mar 4 | 5 - 3 | UML Principles, Creation and Usage |
| Mar 6 |  | No Class - VULII |
| **Mar 8**  **Friday** | 100 points | **Exercise #2 –Develop a Business Process Model, present HOW this could be used to resolve a business issue – create a Power Point presentation and post on the web - D2** |
| **Mar 9 - 17** |  | **Spring Break – No Classes** |
| Mar 18 | 5 - 4 | DoDAF, SysML |
| Mar 20 | 5 - 5 | BPMN |
| Mar 25 | 5 - 6 | BPEL Status and Operation |
| Mar 27 | 6 - 1 | **Standard Reference Models** ~ SCOR |
| April 1 | 6 - 2 | Rosetta Net |
| April 3 | 6 - 3 | VCOR + D3 Expectations |
| April 8 | 7 - 1 | **Business Issues and Trends:** Business Issues, EBA |
| April 10 | 7 - 2 | FIDO |
| April 15 | 7 - 3 | Course Closure and Complete Recap |
| April 17 |  | No Class – VULII |
| April 22 | 200 points | **Exercise #3 – Develop a Detailed Management Presentation of How Enterprise Modeling Can Effectively Address the Business Process Issues– create a Power Point presentation and post on the web. – D3** |
| April 24 | 200 points | **Exercise #3 – Develop a Detailed Management Presentation of How Enterprise Modeling Can Effectively Address the Business Process Issues– create a Power Point presentation and post on the web. – D3** |
| April 29 |  | No Class |
| May 6 | 200 points | **Lit Review is Due – start of business ~ 7:00 am** |

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**Class Topical Assignments Sign-up Sheet**

**Assignment:**

Select a session topic for your literature review topic and alert the instructor of the session topic you have selected.

For in-class students: ***Be prepared to present your preso on the day the topic is to be discussed.***

For on-line students: ***Be prepared to submit your Power Point preso into the Assignments Folder on the day the topic is to be discussed***.

From websites, analyze 4-6 references and develop a literature review document as an overview of the learnings you gleaned from the site. Please post your presentation on the web.

For in-class, teams of up to 2 are allowed with up to 2 teams presenting each topic

For on-line teams of 1or 2 students are allowed:

# Students Selecting Module Topic

|  |  |  |
| --- | --- | --- |
| T1 –  T2 – | 2 - 2 | Complete lit review on the overview and history of **enterprise modeling** – as found on the web. |
| T1 –  T2 – | 3 - 2 | Complete lit review of **Learning to See** as the basis for Lean Value Stream Mapping |
| T1 –  T2 – | 4 – 2 | Complete lit review on the overview and history of **IDEF 0** – as found on the web. |
| T1 –  T2 – | 4 - 5 | Complete lit review on the overview and history of **IDEF 1 and IDEF 1x** |
| T1 –  T2 – | 5 - 1 | Complete lit review on the overview and history of **XML** |
| T1 –  T2 | 5 - 1 | Complete lit review on the overview and history of **UEML** |
| T1 –  T2 – | 5 - 2 | Complete lit review of **Petri Nets** as a basis for dynamic enterprise modeling. |
| T1 –  T2 – | 5 - 3 | Complete lit review on the overview and history of **UML** – as found on the web. |
| T1 –  T2 – | 5 - 4 | Complete lit review on the application of **DoDAF and SysML** |
| T1 –  T2 – | 5 - 5 | Complete lit review and application of **BPMN** |
| T1 –  T2 – | 5 - 6 | Complete lit review and status of **BPEL** |
| T1 –  T2 – | 6 - 1 | Complete lit review on the overview and history of **SCOR reference models and reference architectures** – as found on the web. |
| T1 –  T2 – | 6 - 2 | Complete lit review on the overview and history of **Rosetta Net reference models and reference architectures** – as found on the web. |
| T1 –  T2 – | 6 - 3 | Complete lit review on the overview and history of **VCOR reference models and reference**  **architectures** – as found on the web from the Value Chain Group. |
| T1 –  T2 – | 7 - 1 | Complete lit review of **Enterprise Business Architecture** and its role in enterprise modeling. |

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# Course Deliverables

# Course Delivery Policy

All deliverables have due dates.

Due Dates\* are as follows (all are listed as “close of business” dates:

* For D1 – due week 4 ~ February 1, 2013
* For D2 – due week 9 ~ March 8, 2013
* For D3 – due week 14 ~ April 22 and 24, 2013
* For Lit Review – due May 6 at 7:00 am

For the Class Topical Assignment Presentations:

* It is expected that the Topical Assignment Presentations will be by team and take the equivalent of 10-15 minutes.
* All presentations will be via Power Point
  + In-class students will present in the class.
  + On-line students will post in the appropriate Assignments folder.

For the Lit Review:

* Choose a topic we cover in class of greatest interest to you. It can be the Topical Assignment Presentation topic ~ but need not be this.
* Dig into the literature and create a taxonomy (fish bone diagram) of the topic.
* For each “bone” of the fish bone, document a deep understanding of what the current thinking is on that topic and what the current issues are.
* Summarize your work and highlight what your “take aways” are for the topic.
* Be sure to reference ALL sources.

\* There is a 10% per weekday late fee for any deliverables submitted after these dates!!