ERP 301 ERP Systems in Health Care Industry
Course Syllabus – Fall 2011

INSTRUCTOR AND COURSE INFORMATION

<table>
<thead>
<tr>
<th>Instructors:</th>
<th>Joe Abbott</th>
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<tbody>
<tr>
<td>Office:</td>
<td>Fulton 112</td>
</tr>
<tr>
<td>Phone:</td>
<td>573-341-4184</td>
</tr>
<tr>
<td>E-Mail:</td>
<td><a href="mailto:abbottjo@mst.edu">abbottjo@mst.edu</a></td>
</tr>
<tr>
<td>Course Credit:</td>
<td>3 semester hours of credit</td>
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<tr>
<td>Prerequisite:</td>
<td>IST50</td>
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Class Hours: 4-6:30pm, Wednesday
Class room: Fulton 107A
Office Hours: Tuesday 6pm – 8pm and by appointment (suggest a time via email)
Class Web: http://blackboard.mst.edu

COURSE CATALOG DESCRIPTION:
Specialization of ERP systems and concepts to the field of Health Care, with special emphasis on Business Process Integration in this environment.

COURSE OBJECTIVES
As a result of taking this course, students are expected to:

<table>
<thead>
<tr>
<th>Course Objectives</th>
<th>Program Learning Objectives</th>
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<tbody>
<tr>
<td></td>
<td>Communication Skills</td>
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<tr>
<td>Understand basic economic concepts that differentiation healthcare from other industries</td>
<td>X</td>
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<tr>
<td>Gain hands-on experience working in a healthcare environment via a class project. The project will focus on process modeling and/or working on Meditech configuration.</td>
<td>X</td>
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<tr>
<td>Become familiar with roles in healthcare by shadowing</td>
<td>X</td>
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<tr>
<td>Learn how to use a healthcare information system by creating data and configuring an HIS. Will look at the HIS from the patient-flow perspective and the typical hospital departmental organization.</td>
<td>X</td>
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<tr>
<td>Become familiar with institutions that provide services in the US healthcare system</td>
<td>X</td>
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TEXTBOOK(S) AND MATERIALS FOR COURSE

GRADING POLICIES AND PROCEDURES:

<table>
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<tr>
<th>Grading Scale:</th>
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<tbody>
<tr>
<td>A: ≥ 890</td>
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<tr>
<td>B: 790 – 889</td>
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<tr>
<td>C: 690 - 789</td>
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<tr>
<td>D: 590 – 689</td>
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<td>F: &lt; 590</td>
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Midterm 100 pts Homework, Labs, Quizzes 200 pts
Final Exam 200 pts Team Research Project & Presentation 200 pts
Participation 150 pts Shadowing and Tour 150 pts
General Grading Policies:

1. **ALL ASSIGNMENTS AND TESTS ARE INDIVIDUAL WORKS UNLESS OTHERWISE SPECIFIED.**
2. All assignments should be handed in at the beginning of class on the date announced. **NO LATE ASSIGNMENTS WILL BE ACCEPTED.**
3. Please make every effort to make it to class on time. It is disruptive to the class to have members arriving late.
4. Attendance is encouraged. If you are unable to attend a class, you need to **turn in assignments in advance** (ask a friend to turn it in for you, use digital drop box provided by blackboard, etc.). You are also responsible for finding out what was covered in class and what announcements were made as well as obtaining handouts.

Exams, Tests, and Quizzes

1. There will be mid-term and one final examination. **All exam materials may become property of the instructor after completion.**
2. It is possible to have announced and pop quizzes throughout the semester. Student will be given the date of announced quizzes one week in advance.
3. Exam dates and quizzes are a part of the class schedule. Failure to appear for an exam/quiz will result in the assignment of a zero for that exam/quiz. If you are going to miss an exam with a legitimate reason (e.g., scheduled surgery, official University business, etc.), contact the instructor **PRIOR** to the administration of that exam/quiz. A make-up quiz/test may be at instructor’s discretion.
4. All in-class quizzes and tests are closed books and closed notes unless otherwise specified.

Assignments

Assignments will mostly involve completion of concept, computations, and computer exercises and, unless otherwise informed, are due on the following class period in which it was assigned.

Team Research Project:

Each student will complete a team research project. Students may **NOT** receive these papers back, so if students want a copy, s/he better keeps one for him/herself. However, students may come review my comments on the report after they are graded.

Class Participation:

- Overall, student participation and discussion is essential to ensure that the course topics are understood and are made relevant to actual business situations encountered in the workplace. As such, attendance and participation are an essential factor in the learning process and a tool for assessing student learning. Therefore, you are encouraged and expected to attend all classes.
- Each 10% **unexcused absences will result in loss of a letter grade**. For example, if your grade is a B and you have missed 10% of classes without legitimate excuses, you will end up with a C.
- The instructor reserves the right to drop a student if a student has missed more than 20% of class time.

GENERAL COURSE POLICIES:

- **Academic Alert System:** [http://academicalert.mst.edu](http://academicalert.mst.edu)
  The purpose of the Academic Alert System is to improve the overall academic success of students by improving communication among students, instructors and advisors; reducing the time required for students to be informed of their academic status; and informing students of actions necessary by them in order to meet the academic requirements in their courses.

- **Academic Dishonesty:** [http://registrar.mst.edu/academicregs/index.html](http://registrar.mst.edu/academicregs/index.html)
  Page 30 of the Student Academic Regulations handbook describes the student standard of conduct relative to the System's Collected Rules and Regulations section 200.010, and offers descriptions of academic dishonesty including cheating, plagiarism or sabotage. Additional guidance for faculty, including the University’s Academic Dishonesty Procedures, is available on-line at [http://ugs.mst.edu](http://ugs.mst.edu).
• **Classroom Egress Maps:**
  Faculty should explain where the classroom emergency exits are located. Please include a statement in your course syllabus asking the students to familiarize themselves with the classroom egress maps posted on-line at: [http://registrar.mst.edu/links/egress.html](http://registrar.mst.edu/links/egress.html).

• **Disability Support Services:** [http://dss.mst.edu](http://dss.mst.edu)
  Any student inquiring about academic accommodations because of a disability should be referred to Disability Support Services so that appropriate and reasonable accommodative services can be determined and recommended. Disability Support Services is located in 204 Norwood Hall. Their phone number is 341-4211 and their email is dss@mst.edu. Instructors may consider including the following statement on their course syllabus as a means of informing students about the services offered:

  "If you have a documented disability and anticipate needing accommodations in this course, you are strongly encouraged to meet with me early in the semester. You will need to request that the Disability Services staff send a letter to me verifying your disability and specifying the accommodation you will need before the instructor can arrange your accommodation."

• **Lateness**
  Normally, the instructor will be in class on time. However, if the instructor is late by more than fifteen minutes, students should check with the Department of Business Administration located in Fulton 101 whether the class will be canceled. Students are expected to be in class on time.

• **Using Meditech**
  - After signing the appropriate forms and attending orientation, you will be assigned an account on the PCRMC Meditech Test Environment. Other people use the test environment for work. Intentionally or carelessly interfering with someone else’s tests will result in a failing grade. Accidents happen, but I expect you to follow naming protocols and other procedures as they are given in the class. Experimenting for curiosity’s sake, will indicate a lack of careful thought and consideration and will be dealt with accordingly.
  - Meditech has very detailed, real-time auditing capabilities. Every activity in the system is recorded and analyzed by algorithms and/or a full-time auditor.
  - Attempts to log into the LIVE or production environment will result in dismissal from the class with a failing grade.

**KEY DATES:**

- See the Registrar’s calendar for the last day to add this course, drop this course, or withdraw without a “WD”.
<table>
<thead>
<tr>
<th>Week of</th>
<th>Topic</th>
<th>Readings</th>
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| 8/22    | **Course Overview** (Goals of Class, Review Syllabus, Grading – Tests, labs, project, Level of effort)  
  **Introduction: Healthcare fundamentals**  
  Introduction to PCRMIC  
  ERP in healthcare – What are we building?  
  Compare HIS/EHR Systems – The IT Marketplace  
  **Lab:** Navigate Interface (Meditech and/or Vista)  
  HIPAA paper work (http://www.one-ntdc.org/user) | |
| 8/29    | **Economics and Healthcare**  
  Differences with other industries that use ERP  
  Roles and Institutions (Ambulatory, Acute, Long-term, Home Health)  
  CMS, Joint Commission, State, WHO, HIMSS  
  Infrastructure and data exchange (HL7, HIE, Interfacing vs. integration)  
  Pick countries for comparison and Hospital Orientation | Reading on Oil Prices and Tax wedge supply and demand Chapters 1 & 2 |
| 9/5     | **Macro-healthcare**  
  Global, Federal, State Influence (Healthcare as a public good)  
  Medicare, Medicaid, Veterans Affairs, Exchanges, RAC Audits  
  Commercial Insurance  
  Nature of insurance (Risk sharing, Moral Hazard problem)  
  Price vs. payment  
  Charity care (mandate, mission, compare to scholarships)  
  National systems (a.k.a. single payer systems)  
  Brief presentation on US vs. UK, China, Saudi Arabia, Brazil, Sweden, Japan… | Chapter 4 |
| 9/12    | **Patient’s Rights**  
  **Registration:** Advanced Directives, Demographic information (relevant federal standards), Encounter number vs. Patient ID, Two method identifier, Insurance, eligibility and pre-qualification, HIPAA  
  **Medical Records:** Legal Medical Record vs. EMR, Records role in patient care (high volume providers), Release of Information (ROI), Storage requirements, Transcription, Structured vs. Unstructured data | Chapter 3 Chapter 5 |
| 9/19    | **Pharmacy**  
  Pharmaceutical Companies; FDA; Prescription Medications and classes of Rx – handling requirements  
  Parameters to prescribe (dose, route, frequency)  
  Theft, fraud  
  Roles: Doctors, Mid-tiers, Nurses, Pharmacists, Pharmacy Techs, Dentists, Chiropractors  
  Workflow to order medications (DEA controlled substances)  
  Nomenclatures  
  Case: Thalidomide  
  **Lab:** Define Patient Types, Payer Types, Billing for one insurer  
  **Lab:** Register and Schedule a patient  
  **Lab:** HIM, Coding | Chapter 8 (pp.195 – 196 Meditech Pharmacy Module documentation |
| 9/26    | **Medical Imaging**  
  Roles, Data formats, PACS, Modalities, Parameters for imaging  
  Business Process Modeling Standard  
  **Lab:** Osirix | Chapter 8 (pp.189-191,194 Meditech Radiology Module documentation |
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<tr>
<td>10/3</td>
<td><strong>Mid-term Projects Assignment</strong></td>
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<td><strong>Tour the hospital (2 tours – select either morning or afternoon)</strong></td>
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| 10/10   | **Surgery & ED:** Roles, Standards (SCIP, WHO), Infections, Typical surgeries  
          | ED vs. Inpatient vs. Ambulatory Care  
          | 3 ways to leave an ED  
          | Why the wait?  
          | Medication seeking  
          | Typical data for ED  
          | Communication to/from ED provider (Admitting, primary provider)  
          | Ambulance  
          | ED as primary care provider (patient rights, bug bite but no money, office closed)  
          | Case: Errors, the airline industry, communication in the OR  
          | **Lab:** Surgery                                                   | Meditech ED Module documentation  
          |                                                                | Chapter 8 (pp.197-201)     |
| 10/17   | **Lab:** Nomenclatures, Roles, Division of a typical lab, Common lab tests, Resulting from reference labs, Automation in the lab  
          | **Lab:** Laboratory                                                | Chapter 8 (pp. 186-189)  
          |                                                                | Meditech Lab Module documentation                                      |
| 10/24   | **Therapies:** Physical Therapy, Occupational Therapy, Speech Therapy, Cardiac Therapy, Cancer Treatment (Radiation Oncology, Chemotherapy)  
          | **Lab:** Recurring treatments/procedures (ie. therapies)            | Chapter 9  
          |                                                                | Chapter 10                                                               |
| 10/31   | **Doctors and Nurses:** Role and types of physicians, Orders (Role and types of nurses, Florence Nightingale, Point of Service devices, Nursing Informatics)  
          | Instructor on Vacation                                             | Article on Florence Nightengale  
          | **Guest Speaker:** Director, Nursing Informatics, PCRMC             | Meditech Nursing Module and Physician Workstation Module                  |
|         | **Guest Speaker:** Member of IT Physician Advisory Committee         |                                               |
| 11/7    | **Coding:** Nomenclatures, ICD-9, DRGs, Snomed, ICD-10  
          | Contracting with payers  
          | Single payer system  
          | Self-pay                                                         | Chapter 9  
          |                                                                | Chapter 10                                                               |
|          | Discuss Nurse shadowing                                             |                                               |
|          | **Lab:** Entering orders, acknowledging orders, DC’ing, nursing notes, Problem List |                                               |
| 11/14   | **Clinical Quality & Measurement**  
          | Data Mining, National Quality Standards, Agencies (Joint Commission, CMS, State)  
          | Activities to improve processes, Quality charts - Fishbone diagrams, pareto analysis  
          | Deming, Your product is a human being  
          | **Lab:** Billing and abstracting                                  | Chapter 11                                                               |
| 11/21   | Thanksgiving Break                                                  |                                               |
| 11/28   | **Interoperability (HL7, Interfacing vs. Integration)**              |                                               |
|          | **Guest Speaker:** Will ask the Administrative Director of Clinical Quality, PCRMC | HL7 protocol definition                      |
|          | **Lab:** Quality Reporting, Mirth Interface Engine                   |                                               |
| 12/5    | Project Presentation                                                |                                               |
| 12/14   | **Final Exam: 7 - 9 pm, Wednesday, December 14**                    |                                               |

**Note:** *it is possible, due to extenuating circumstances that exact coverage and sequencing of course content, grading criteria and weights may change. Students will be notified as far in advance of such changes.*
References:

Medicare Bubble chart

Medicare Fact Sheet

Spending by Age

Medicare Spending by Age and Gender

Medicaid Summary

New Patient Rights

Medicare Patient Rights

Thalidomide Approval
http://www.accessdata.fda.gov/drugsatfda_docs/nda/98/020785s000_Thalidomide_MedR.pdf

http://www.nytimes.com/2010/03/16/science/16limb.html?adxnnl=1&adxnnlx=1313817558- G52isr0QYhX870RBWUnHeA&pagewanted=1
http://www.time.com/time/magazine/article/0,9171,873697,00.html
http://en.wikipedia.org/wiki/Thalidomide

RxNorm

RxNav