ERP 6220 Strategic Enterprise Performance Dashboard Prototyping
Course Syllabus – Fall 2015

Department of Business & Information Technology Mission

“Capitalizing on the strong technological emphasis of Missouri University of Science & Technology (S&T), the Department of Business and Information Technology prepares professionals for careers in modern business organizations. The Department emphasizes management through technology with particular focus on information systems and their application in a fast-changing, global and competitive environment.

Through innovative instruction and research, the Department serves the economic interests of industry and the evolving needs of society. The Department provides distance education opportunities utilizing advanced learning technologies”

INSTRUCTOR AND COURSE INFORMATION

<table>
<thead>
<tr>
<th>Instructor:</th>
<th>Bih-Ru Lea, Ph.D.</th>
<th>Class Hours:</th>
<th>M W F 9 am – 9:50 am</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office:</td>
<td>Fulton 102A</td>
<td>Class room:</td>
<td>Fulton 102A</td>
</tr>
<tr>
<td>Phone:</td>
<td>573-341-6436</td>
<td>Office Hours:</td>
<td>M W 10 am – 11 am</td>
</tr>
<tr>
<td>E-Mail:</td>
<td><a href="mailto:leabi@mst.edu">leabi@mst.edu</a></td>
<td>T</td>
<td>12 noon – 1 pm</td>
</tr>
<tr>
<td>Course Credit:</td>
<td>3 semester hours of credit</td>
<td>And by appointment (suggest a time via email)</td>
<td></td>
</tr>
<tr>
<td>Prerequisite:</td>
<td>ERP 5110 and ERP/IST 6444</td>
<td>Class Web:</td>
<td><a href="http://blackboard.mst.edu">http://blackboard.mst.edu</a></td>
</tr>
</tbody>
</table>

COURSE CATALOG DESCRIPTION:

Study of implementation and design practices for enterprise performance management systems with a focus on dashboards, balanced scorecard, and value-based management. SAP's BW, BusinessObjects Xcelsius/Dashboard Designer, Crystal Reports, Hana Studio similar tools will be used for project implementations.

COURSE OBJECTIVES

Strategic Enterprise Management involves analyzing how effectively a company is attaining its strategic objectives as well as developing an effective performance management and reporting system. The main objectives of this course are to stimulate the student’s problem-solving abilities and critical thinking skills and to improve student’s communication skills. As a result of taking this course, students are expected to be able to demonstrate:

<table>
<thead>
<tr>
<th>Course Objectives</th>
<th>Program Learning Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>• an understanding of competitive strategies from leveraging the information technology</td>
<td>Communicating Skills: X Critical Thinking: X X Information Technology: X Teamwork &amp; Leadership: X Global &amp; Multicultural Issues: X X Integrate Business: X</td>
</tr>
<tr>
<td>• an understanding of business analytics and data visualization</td>
<td>X X X X</td>
</tr>
<tr>
<td>• understanding applications and impact of data visualization on enterprise mobile strategies and Big Data Analytics</td>
<td>X X X</td>
</tr>
<tr>
<td>• understanding and be able to communicate fundamental concepts of key performance management theories, systems, matrices, and tools, including balanced scorecard, key performance indicators, performance dashboard, etc.</td>
<td>X X X X X X X</td>
</tr>
<tr>
<td>* abilities to design and implement an effective performance dashboard/scorecard system to support enterprise strategies</td>
<td>X X X X X X X</td>
</tr>
<tr>
<td>* abilities to design and implement an effective data warehouse to support business analytics, visualization, and performance management</td>
<td>X X X X X</td>
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</table>

* indicates a significant project component.
TEXTBOOK(S) AND MATERIALS FOR COURSE

- ERP6220 Course Pack (281000017560B), Missouri S&T Bookstore (http://www.mstbookstore.com)

GRADING POLICIES AND PROCEDURES:

<table>
<thead>
<tr>
<th>Test 1</th>
<th>Assignments (labs, Discussions, quiz, etc.)</th>
<th>Class Project</th>
</tr>
</thead>
</table>
| 120 pts| 530 pts                                    | 200 pts
| Test 2 |                                            | Presentation & Prototype demo (100 pts) |
| 150 pts|                                            | Final Report & Prototype (100 pts)     |

**Grading Scale:**

A: $\geq 895$ pts  
B: 795 – 894 pts  
C: 695 – 794 pts  
D: 595 – 694 pts  
F: $< 594$ 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.
5. The instructor will assign NO incompletes in lieu of a regular grade.

**Exams, Tests, and Quizzes**

1. There will be two tests. **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 allowed during the final exam period only if convincing reasons and proper documentations (such as a doctor's note in case of a surgery/illness) are given for the absence. The make-up exam will be a comprehensive exam covering the material from throughout the course.
4. All in-class quizzes and tests are closed books and closed notes unless otherwise specified.

**Lab Assignments**

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

**Class Project:**

Each student will complete a class project that involves design and implementation of a strategic management system for an organization. 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:

- **S&Tconnect**: [https://blackboard.mst.edu/](https://blackboard.mst.edu/) (S&Tconnect tab)
  
  S&Tconnect provides an enhanced system that allows students to request appointments with their instructors and advisors via the S&Tconnect calendar, which syncs with the faculty or staff member’s Outlook Exchange calendar. S&Tconnect will also facilitate better communication overall to help build student academic success and increase student retention. S&Tconnect Early Alert has replaced the Academic Alert system used by Missouri S&T.

- **Student Honor Code and Academic Integrity:**
  
  The Honor Code can be found at this link: [http://stuco.mst.edu/about/honor.shtml](http://stuco.mst.edu/about/honor.shtml). Students are encouraged to read and reflect upon the Honor code and its emphasis on HONESTY and RESPECT. Page 30 of the Student Academic Regulations handbook describes the student standard of conduct relative to the University of Missouri System's Collected Rules and Regulations section 200.010, and offers descriptions of academic dishonesty including cheating, plagiarism or sabotage ([http://registrar.mst.edu/academicregs/index.html](http://registrar.mst.edu/academicregs/index.html)). Additional guidance for faculty, including the University’s Academic Dishonesty Procedures, is available on-line at [http://ugs.mst.edu](http://ugs.mst.edu). Other informational resources for students regarding ethics and integrity can be found online at [http://ugs.mst.edu/academicintegrity/studentresources-ai](http://ugs.mst.edu/academicintegrity/studentresources-ai).

- **Classroom Egress Maps:**
  
  Students should aware and familiarize themselves where the classroom emergency exits are located. 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)
  
  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 I can arrange your accommodation. 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 and services offered are provided below:

- **The Burns & McDonnell Student Success Center**
  
  The Student Success Center is a centralized location designed for students to visit and feel comfortable about utilizing the campus resources available. The Student Success Center was developed as a campus wide initiative to foster a sense of responsibility and self-directedness to all S&T students by providing peer mentors, caring staff, and approachable faculty and administrators who are student centered and supportive of student success. Visit the B&MSSC at 198 Toomey Hall; 573-341-7596; success@mst.edu; facebook: [www.facebook.com/SandTssc](http://www.facebook.com/SandTssc); web: [http://studentsuccess.mst.edu/](http://studentsuccess.mst.edu/)

- **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.

**KEY DATES:**

- The last day to add this course is **Friday, August 30, 2015**.
- The last day to withdraw from this course without a “WD” showing on transcript is **Monday, September 30, 2015**.
- The last day for dropping this course is **Friday, November 8, 2015**.
<table>
<thead>
<tr>
<th>Week of</th>
<th>Topic</th>
<th>Readings</th>
</tr>
</thead>
</table>
| 1 8/24, 8/26, 8/28 | Course Overview  
The Art and Influence of Data Visualization  
Introduction to Performance Dashboards  
**Preparation:** Account Setup, Dashboard Examples | Ch. 1  
R1, |
| 2 8/31, 9/2, 9/4 | Types of Dashboard & Common Dashboard Design Mistakes  
**Project:** Case Introduction  
**Lab 1:** Visualization using SAP Predictive Analytics (Lumira) | R2, Ch. 2 |
| 3 9/7, 9/9, 9/11 | 9/7: Labor Day Holiday, no class  
Visual Analytics & Enterprise Mobility  
**Lab 2:** Mobile App: Visual Analytics using HANA oData REST services | Notes |
| 4 9/14, 9/16, 9/18 | **Case Presentation 1:** Graphs and Display Media  
Tapping into the Power of Visual Perception  
**Lab 3:** Dashboard Design 1: SAP Design Studio | Ch. 8 – Ch. 12  
Ch. 5 |
| 5 9/21, 9/23, 9/25 | Principles of Visual Design and Design Thinking  
**Lab 4:** Dashboard Design 2: SAP Design Studio Geomapping | Ch. 3, Ch. 4  
Notes |
| 6 9/28, 9/30, 10/2 | Data Warehousing  
**Case Presentation 2:** Data Warehouse Design Examples (10/2) | R3  
R6, R7 |
| 7 10/5, 10/7, 10/9 | **Test 1:** Concept test (10/5), Take home Computer Operation: Project Phase 1  
Report & Prototype template (given on 10/2 and due 10/9)  
Dimensional Modeling Process and Tasks | R4 |
| 8 10/12, 10/14, 10/16 | In-memory Computing: SAP HANA Data Modeling  
**Lab 5:** SAP HANA Data Modeling 1 | Notes |
| 9 10/19, 10/21, 10/23 | Data Warehouse and Business Intelligence Life Cycle  
**Lab 6:** SAP HANA Data Modeling 2 | R5 |
| 10 10/26, 10/28, 10/30 | The Role of Business Intelligence, Query Reporting  
Big Data and Business Analytics  
**Lab 7:** SAP BW BEx Query, HANA Analytical View, and SAP Predictive Analytics | Notes |
| 11 11/2, 11/4, 11/6 | Data Mining & Visualization for Descriptive, Predictive, Prescriptive Analytics  
**Lab 8:** Data Mining using SAP Predictive Analytics 1 | R8 |
| 12 11/9, 11/11, 11/13 | Data Mining & Visualization in Dashboard Development  
**Lab 9:** Data Mining using SAP Predictive Analytics 1 | R8 |
| 13 11/16, 11/18, 11/20 | How to Align Business and IT  
**Lab 10:** Data Mining using SAS Visual Analytics & Visual Statistics  
**Test 2** Take home exam provided on 11/20 and due 11/30 | |
| 14 11/23, 11/25, 11/27 | Thanksgiving Holiday (no class) | |
| 15 11/30, 12/2, 12/4 | **Test 2** Concept Test (12/2)  
Anonymization, De-Identification, and Data Quality  
Putting it all together in Software Development | R9, R10, Ch. 6, Ch. 13, Ch. 14 |
| 16 12/7, 12/9, 12/11 | Project Presentation and Prototype Demo  
Course Review | |
| 17 12/14 - 12/18 | **Final Exam Week (No in class final exam)**  
- **Project Prototype & Report due at noon on Thursday, Dec. 17** | |

**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.*
ERP 6220 Required Reading List


Reading 10 (R10): Ch. 13 De-Identification and Data Quality: A Clinical Data Warehouse, in Anonymizing Health Data, 1st Edition