SCM 7380: Enterprise Operations and Business Intelligence
Section 18645   Tue 6 - 9   Spring 2017

Instructor: Michael J. Murray, PhD, PE   **Office/Phone:**   MH 260-G / 713-743-4667
Student Hours: Online via Google Hangouts, In-person T/Th 4:00 – 5:00 p.m., and by appointment
Email: Please **use BlackBoard email** for all course-related correspondence

Course Description

At its core Supply Chain Management is the study of how to run a successful organization. In the same way that becoming successful as an athlete or heart surgeon requires practice to learn important skills and techniques, so too the best way to develop skill in supply chain management is through practice. In this course you will have an opportunity to practice managing the supply chain of a simulated manufacturing company using SAP. Using various business analytic tools and techniques you will analyze your supply chain operations and financial results to discover ways to improve performance. You will then report on your company's performance to its shareholders.

Course Objectives

This course supports the MBA program learning goals in the following ways:
- **Communication** – students analyze business issues through written case studies and presentations that develop recommendations for actions with metrics that can gauge the success of the recommendation.
- **Cross disciplinary competence** – sharpen student understanding of how organizations integrate and manage their core business processes across all the functional disciplines.
- **Critical thinking** – students identify the information needed to analyze competitive strategy and apply analytical tools and techniques to improve the performance of a simulated supply chain.

Course prerequisites and textbook

Required: 1) *Integrated Business Processes with ERP Systems*, Magal & Word, ISBN 978-0470-478448.
Also, 2) *ERP Simulation Game Participant's Guide*, Leger et al. (2016-17) Do NOT purchase now! I will provide detailed instructions on how to obtain this book/software access code in class (cost is $C 50, ~ $38 US).

Selected case studies available from http://cb.hbsp.harvard.edu/cbmp/access/58802597 (cost ~ $20).

Assigned readings can be downloaded from the UH M.D. Anderson Library at http://info.lib.uh.edu

Microsoft Office 2010 or later, including Access and Excel with PowerPivot, SAP 7.40 client (provided), SAP Predictive Analysis 3.0 (provided), RStudio and R 3.x[1] (free). NOTE: to use most of this software your computer must be able to run in Windows or Windows emulation mode, and have 8+ GB RAM, and sufficient disk storage.

Course Outline and Organization

This course is designed 1) to show how enterprise systems such as SAP are used to manage supply chain processes, and 2) to demonstrate how the data that is collected by these systems can be analyzed to make better decisions and improve performance.
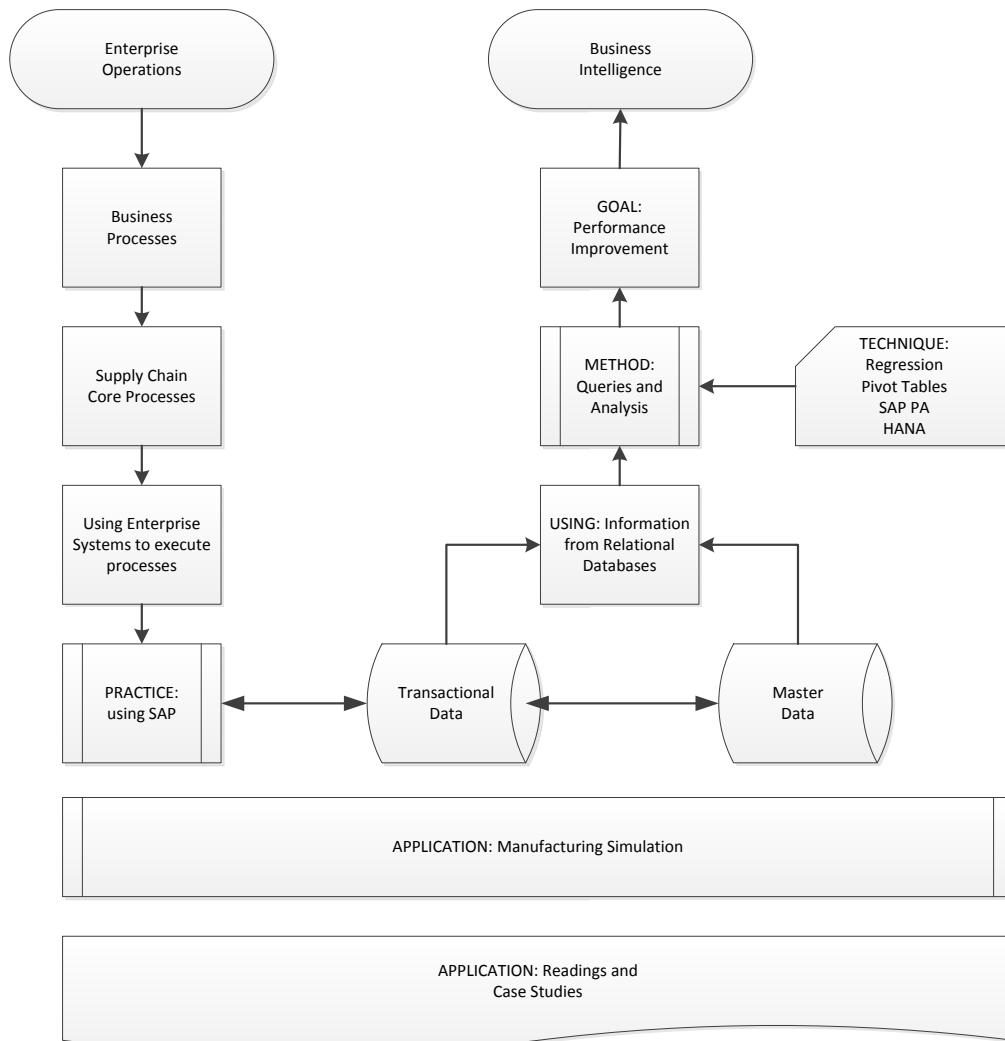
Figure 1 (below) illustrates the way the course is organized. We first study business processes, focusing on the supply chain core processes. Then we will examine how the SAP executes the core processes and how they integrate with the financial processes. Next using an introductory simulation exercise we will use data visualization and data mining techniques to analyze transactional data from the simulation and gain insight into each company's performance. Students will then have an opportunity to practice using SAP and business intelligence tools in a competitive simulation that culminates in a presentation and annual report to investors.

Throughout the course we will discuss various readings and case studies that illustrate some of the challenges in developing and executing strategies that incorporate enterprise systems and business intelligence tools. The purpose of the case studies is to help improve your critical analysis skills at identifying and resolving business problems.

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[1] All SAP software will be made available free of charge. R is an open-source statistical package.

They also provide a way for you to learn and apply some technical skills that will prove useful in managing supply chains.

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│  Enterprise  │                          │   Business   │
│  Operations  │                          │ Intelligence │
└──────┬───────┘                          └──────▲───────┘
       │                                         │
┌──────▼───────┐                          ┌──────┴───────┐
│              │                          │    GOAL:     │
│   Business   │                          │ Performance  │
│  Processes   │                          │ Improvement  │
└──────┬───────┘                          └──────▲───────┘
       │                                         │
┌──────▼───────┐                   ┌──────────┐  │  ┌──────────────┐
│ Supply Chain │                   │ METHOD:  │◄─┼──│  TECHNIQUE:  │
│Core Processes│                   │Queries and│     │  Regression  │
│              │                   │ Analysis │      │ Pivot Tables │
└──────┬───────┘                   └──────▲───┘      │    SAP PA    │
       │                                  │          │     HANA     │
┌──────▼───────┐                   ┌──────┴───────┐  └──────────────┘
│Using Enterprise│                 │USING: Information│
│Systems to execute│◄──────────────┤from Relational │◄──────────┐
│  processes   │                   │  Databases   │             │
└──────┬───────┘                   └──────▲───────┘             │
       │                                  │                     │
┌──────▼───────┐     ┌─────────────┐      │      ┌─────────────┐│
│  PRACTICE:   │◄───►│ Transactional│◄────►│◄────►│   Master    │
│  using SAP   │     │     Data    │              │    Data     │
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┌─────────────────────────────────────────────────────────────┐
│          APPLICATION: Manufacturing Simulation                │
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┌─────────────────────────────────────────────────────────────┐
│                  APPLICATION: Readings and                    │
│                       Case Studies                            │
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Figure 1: SCM 7380 Enterprise Operations and Business Intelligence
Course Outline

I will provide all students with a self-study module on BlackBoard for each individual case analysis. The module lists the objectives for the case, a set of directed activities, and a number of questions that must be answered to get credit for the case. Your answers to the case quiz will be graded on a Pass /No Pass basis. "Pass" means that your answers demonstrate that you have read the case and show some originality in your analysis, not simply a repetition of information that is already given in the case. Further, you answers should form the basis of your participation in the in-class discussion of the case. "No Pass" means that your answers do not meet expectations for a graduate student's contribution to a case analysis.

When we discuss the case in class you should be prepared to contribute to the discussion as follows: 1) identify the root cause issue(s) of the case, 2) explore alternative courses of action to address those issues, 3) make specific recommendations and 4) *develop a plan of execution and define performance metrics* and other measures that can determine whether or not the recommendations were successful.

We will be using a number of different analytical tools in this course. Although these are not pre-requisites, it is preferable for students to have completed BZAN 6310/6320 and BZAN 7320 prior to taking this course.

Grading

This course is designed to introduce you to ERP systems using a combination of lectures, business articles and cases, classroom exercises and a business simulation. There are a number of deliverables due during the semester that will be used to assess your learning and understanding of enterprise operations and business intelligence. Each student's final numerical score for the course is weighted 75% on individual effort and 25% on group activities. The course deliverables are weighted as follows:

Item	Value
6 SAP practice exercises*	15%
4 Case studies*	10%
2 Mid-term exams	50%
Simulation Report & Presentation	25%
Total	**100%**

*Students are allowed to miss either one practice exercise or one case study without penalty.

The following scale will determine your final grade:

≥ 93	A	80.00 – 83.32	B-
90.00 – 92.99	A-	75.00 – 79.99	C+
86.67 – 89.99	B+	70.00 – 74.99	C
83.33 – 86.66	B	< 70.00	C-

Your purpose in taking this course should be to learn interesting and valuable skills that can help you in your career, not to score points and get a particular letter grade. If you spend more time thinking about grades than about business modeling, then you will not be taking full advantage of the opportunity to learn new concepts and develop your skills.

My role is to structure individual items throughout this course that should provide you with clear and specific feedback on what you are doing well and what you need to improve. Your overall grade, then, should reflect what you have learned in this course, not just be an itemization of the tasks you completed and how well you repeated what was in the textbook or what you read in the case studies or heard in the lectures. If you focus on learning how to analyze supply chain management problems and apply the various tools and techniques we cover in this course, then you should have no problem demonstrating to a future employer that you are competent to do the job.

Please remember that grades are not negotiable. Grades are earned on the basis of performance in this course, not given on the basis of need or effort. I do not reply to email requesting a grade change or extra credit.

Note: The instructor reserves the right to assign a grade of "F" in cases of cheating on exams or other violations of academic honesty.

Classroom and Digital Etiquette

Please make every effort to arrive at class on time and to stay until the end of the class. If you do not already have one, please obtain a Gmail account to use for this course. It will be used as your contact account for the simulation license, and it will enable you to participate in the online student hours via Google Hangouts if you choose to do so.

Based on student feedback from several previous semesters, the use of classroom computers, laptops, tablets and mobile devices during class creates a distraction for other students. Therefore we will follow the policy that unless otherwise indicated, <u>all electronic devices should be turned OFF while in class</u> **in particular during the case discussions**. This includes using a laptop or tablet for note-taking; research has shown that students who use laptops and other devices to take notes perform significantly worse on exams than students who take notes longhand. I will provide lecture outlines on BlackBoard that you can use to take notes during class and to act as a study aid for the projects and exams, and I will record some lectures so that you can review them later.

Academic Integrity

Let me also speak to you frankly about your "value proposition"; in other words, what is the market value of your MBA? Your degree is a reflection not just of your effort at UH, but also the efforts of your classmates. If any student can obtain an MBA by simply coming to class, putting in minimal effort and/or freeloading on homework assignments, then a UH degree will not be very valuable. Employers recognize this because they have to deal with employees who are poorly equipped to do the critical thinking and analysis they need because they only did the minimum to get by. As the perceived value of a UH degree goes down, so too do your long-term career prospects.

All students are expected to be familiar with the University of Houston Academic Honesty policy that is published in the undergraduate catalog. In particular, the following four principles apply to this class:

- All homework assignments and exams should reflect *your own effort only* (except as noted above for homework assignments where work with other students is documented). Discussion with others from another section about graded submissions is a violation of the Academic Honesty Policy.

- ***Passing case notes and class handouts to students who have yet to take the course, who attend a different section, or receiving material from those who took the class in the past, is strictly prohibited.***

- Plagiarizing (the misrepresentation of work done by others as being one's own work) is a violation of the Academic Honesty Policy. Remember to cite all sources of information and ideas to prevent problems.

- You may *not* submit the same work (or substantially similar work) to meet the requirements of more than one course without the written consent of all instructors concerned.

Teaching Philosophy

My teaching philosophy is based on the goal of leading you to develop skills that will help you achieve success in your professional careers and personal lives. I spent most of my career working in industry and I know first-hand how important it is to have intellectual curiosity matched with an ability to critically analyze the issues faced by organizations large and small. I believe that your education should be focused on more than just learning the contents of the textbooks we use. You must understand and be able to articulate the knowledge you gain before you can apply it successfully.

I will challenge you to think critically about the problems we discuss, and I will help you develop both an intuitive understanding of problems and a systematic approach to solving them. Realizing that all of you have diverse learning styles I will try to engage you in a number of ways to help you gain a better understanding of the subject at hand. For me teaching is an opportunity to provide you with some of the advantages I have received in my education and career, and I consider it a privilege to pass on what I have learned.

Accommodations for Students with Disabilities

My objective is to help all students achieve their highest potential in the Bauer College of Business. If you need to receive accommodation in the classroom, on exams or with assignments, please make arrangements with me prior to the exam or assignment. You can also contact the Justin Dart Center for Students with Disabilities (713-743-5400) in order to obtain assistance. Services provided by the Center for Students with Disabilities include assistance with course accommodations, adaptive equipment, individualized exam administration, taped textbooks, wheelchair repair, library needs, handicapped parking, as well as many other needs.

An outline of the semester topics, readings and case studies, and in-class exercises is presented below. Please refer to the detailed summary on BlackBoard for more information regarding the articles and case studies.

SCM 7380 Enterprise Operations & Business Intelligence
Tentative Class Schedule Spring 2017

	Date	Topic(s)	Reading reference/case study	Assignment
January	17-Jan	Syllabus and course overview; Business processes and ES	i: Enterprise systems and the supply chain, Journal of Enterprise Information Management, Jan 2004 vol. 17 no. 1, pp 8 - 19.	VL-01: SAP Nav
	24-Jan	SAP, Relational databases and Accounting in SAP	M&W, Ch. 2 - 3	PE-01: FI/CO VL-02: HANA Intro
	31-Jan	Fulfillment process/ Intro Simulation Q1	M&W, Ch. 5; Leger et al., Ch. 1 - 2	PE-02: SD
February	7-Feb	Production & inventory process/ Intro Simulation Q2	M&W, Ch. 6 - 7	PE-03: PP
	14-Feb	MRP & Procurement process/ Intro Simulation Q3	M&W, Ch. 4, 8	PE-04: MM
	21-Feb	**Assessment 1: Fundamentals of enterprise systems and SAP**		VL-03: Intro to R
	28-Feb	Business Intelligence & descriptive analytics	ii: Competing on Analytics, HBR Jan 2006, vol. 84 no. 1, pp 98 - 107. Data visualization and Introduction to R: SAP Predictive Analysis exercises	PE-05: Data viz
March	7-Mar	Extended Simulation Q1 & Q2	Case: Business Intelligence at SYSCO (9-604-080); Leger et al. Ch. 3 - 6	
	14-Mar	*Spring Break - No Class*		
	21-Mar	Extended Simulation Q3 & Q4	iii: Minding the Analytics Gap, Sloan Mgt. Rev. 2015, v 56 no. 3, pp 63 -68. Case: Managing with Analytics at P&G (9-613-045)	PE-06: TBA
	28-Mar	Predictive analytics	Charles River Book Club - instructor led Association analysis with R	
April	4-Apr	Extended Simulation Q5 & Q6	Case: TD Canada Trust (B) (HBS 9-108-043)	
	11-Apr	Extended Simulation Q7 & Q8	Case: Balanced Scorecard at Chilquinta Energia (HEC106)	
	18-Apr	Prescriptive analytics	iv: Big Data, Analytics and the path from insights to value, Sloan Rev. 2011, v 52 no. 2, pp 21 -31. Supply chain optimization & simulation	
	25-Apr	**Annual report presentations**		
May	9-May	**Assessment 2: Analytics and Business Intelligence**		

Revised: 1/13/2017

Note: The University of Houston academic calendars are published a year in advance, and show the date of finals week and the end of the semester. <u>Travel plans prior to the end of the semester cannot be used as a reason to request a makeup exam or excused absence.</u>