

INFORMATION TECHNOLOGY PROJECT MANAGEMENT

ISQS 4350
Spring 2015
Email: jburns@ba.ttu.edu

Instructor: Dr. Burns
Office: BA E306
Off Hrs: By appointment

Texts: Schwabe, Kathy, **Information Technology Project Management, Seventh Edition**, Cambridge, MA: Course Technology, Inc., 2013.

Burns, James, **Project Management Processes and Practice: Applications to Information Technology, 2015**. (These materials will be provided for you.)

Welcome to the capstone course for MIS majors. This course is in our curriculum because your future employers said it must be here! In their view this course is an absolute must. The course will endeavor to accomplish two goals. First, the course covers software project management in total; second the course will discuss contemporary problems in information systems as "projects."

This course will cover the following contemporary topics:

0. Project management (PM) basics
1. Relationship of PM to system and enterprise integration
2. Project lifecycle and process groups
3. Proposal writing
4. Models of the software development processes (Waterfall, Spiral, etc.)
5. Capability maturity model (CMM) and Capability maturity model integration (CMMI)
6. Continuous and innovative process improvement and its relation to projects
7. Project scope, time, cost, quality, risk, human resource, communications, procurement and stakeholder management
8. Methodology for each major IT project type
9. Rapid application development methodologies as projects within information technology
10. Change management; coping with change, causality and complexity
11. Software quality assurance
12. Senge's systems thinking and Goldratt's thinking process
13. Agile and lean-agile software development
14. Software acceptance testing documentation

WEB Site: The web site for course materials related to this course is <http://burns.ba.ttu.edu/Isqs4350.htm>. You will find there a variety of PowerPoint slides organized by chapter, helps documents and models for use in this course, and practice exams. All of the PowerPoint slides that we use in class are available there, for example.

Grading: Two exams and a FINAL will be administered. All exams will be mandatory. Make-up exams will be administered in my office only to students with excusable conflicts. Exams will take place in this classroom during the regular meeting time.

In addition to the exams, some assignments will be taken up. All exams and computer assignments will be graded on a basis of 0 to 100%. The letter grade breakdowns used in assigning all grades, including the final grade are:

A----- 90 - 100%
B----- 80 - 89%

C----- 70 - 79%
D----- 60 - 69%
F----- Below 60%

Each exam and the FINAL will be worth 17%. The homework assignments will carry a total worth of 10%. A mid-semester report will be worth 8%. A term project (discussed below) will be worth 16% plus 5% for the presentation. Even though projects will be done in teams, it will be necessary for all team members to present. **Class participation will be worth 10%.**

Attendance: Class attendance will be noted. The seat in which you sit on the second-class day will be "your seat" for the remainder of the semester. Late entrances and early exits to and from the classroom are distractions which disrupt the class. If you arrive later or if you must leave early, please make your entrance or departure as quiet and orderly as possible.

Reading: The reading assignments will enable you to work the problems with understanding and to comprehend the material covered in class. You are well advised to have read each assigned reading for the class period before coming to class.

Exams: The exams will test your ability to apply the solution techniques discussed in class. The exams will be prepared fresh so they will be unlike similar exams taken in the past, although they will be identical in style and format. The exams will test your general substantive understanding of the materials including definitions and concepts. Each exam will consist of multiple choice questions and discussion problems. Multiple choice questions may be used to lead you through a solution procedure. You are responsible to bring your own scantron sheets to each exam. You will turn-in the scantron sheet and the exam booklet once you have completed the exam.

Behavior: Students are expected to assist in maintaining a classroom environment that is conducive to learning. In order to assure that all students have an opportunity to gain from time spent in class, unless otherwise approved by the instructor, students are prohibited from using cellular phones or audible beepers, eating or drinking in class, making offensive remarks, reading newspapers, sleeping or engaging in any other form of distraction. Inappropriate behavior in the classroom shall result in, minimally, a request to leave class.

Academic conduct: The Texas Tech policy for academic conduct (Student Affairs Handbook) applies to all students, at all times. Any student who violates the academic conduct policy will be subjected to the appropriate disciplinary sanctions (Student Affairs Handbook). Once your course grade has been determined, it is impossible to do extra work to improve the grade after the fact. After the end of the semester, do not ask me for the opportunity to do extra work.

Disabled Students: If, for any reason, you have a physical, visual, hearing or cognitive impairment that hinders your ability to write, see, hear or take exams, please advise the instructor of your condition, and provide a letter of verification from your doctor. He will make every effort to accommodate your situation as best as he can. You are also advised that you have certain rights as stated in Section 504 of the Rehabilitation Act of 1973 and described in the Student Affairs Handbook.

Mid-semester Report: A mid-semester report of not less than 7 nor more than 9 double-spaced pages, plus references will be due April 2, 2015. This report will require that you conduct *a literature review* (library and Internet) on a particular subject and report all that you can find on that subject in the current professional and pedagogical literature. The mid-semester report is to be done *individually*, not in teams. You may choose from any of the following project processes. What you will be doing is collecting information on how firms accomplish the process of your choice. You can do this by using the Internet and by talking with firms that you are interviewing.

- Develop Project Charter
- Develop Project Management Plan
- Direct and Manage Project Execution
- Monitor and Control Project Work

- Perform Integrated Change Control
- Close Project or Phase
- Collect Requirements
- Define Scope
- Create WBS
- Verify Scope
- Control Scope
- Define Activities
- Sequence Activities
- Estimate Activity Resources
- Estimate Activity Durations
- Develop Schedule
- Control Schedule
- Estimate Costs
- Determine Budget
- Control Costs
- Plan Quality
- Perform Quality Assurance
- Perform Quality Control
- Develop Human Resource Plan
- Acquire Project Team
- Develop Project Team
- Manage Project Team
- Identify Stakeholders
- Plan Communications
- Distribute Information
- Manage Stakeholder Expectations
- Report Performance
- Plan Risk Management
- Identify Risks
- Perform Qualitative Risk Analysis
- Perform Quantitative Risk Analysis
- Plan Risk Responses
- Monitor and Control Risks
- Plan Procurements
- Conduct Procurements
- Administer Procurements
- Close Procurements

Your mid-semester report must be turned in *hardcopy*. The file on disk (or emailed to me as an attachment) must be a MS Word file. Other topics are possible, but require prior approval by the instructor. The above-listed topics are pre-approved.

Homework: The homework is to be turned in *individually*, not in teams.

Term Project: The term project will involve application of the techniques discussed in class to a problem area of interest to you. All term project deliverables (pre-proposal, requirements doc, project plan, proposal, earned value analysis) will be accomplished in teams of size 5 exactly. The term project is due on or before May 5, 2015. It must be written in the following format and should be double-spaced typewritten pages. You must execute at least three major phases of your project plan so that you can do the earned value analysis part of the project. Your project plan shall consist of not less than 50 tasks.

1. Title Page.
2. Executive summary -- a one-page brief of the project or case. This should identify who the stakeholders are, what their needs are, how those needs were resolved or accommodated by the proposed IT product.
3. FRONTMATTER consisting of the following subheadings: Description of the Problem/Opportunity, the Goal, the Success Criteria, Assumptions/Risks, Recommended Prescriptive Software Solution, Impediments/Obstacles Encountered, Current Status, and lessons learned. The FRONT MATTER should describe the project environment, to include cultural, political, social, legal, and other non-quantifiable factors that have a bearing on the managerial situation. The FRONT MATTER should describe the goal and the criteria by which success will be judged. Impediments and obstacles encountered along the way should be described here. Include here a statement of how much of the total project was actually completed, whether the project is currently on schedule and under budget, any problems encountered, as well as what happens from here. {Recall, that you are not required to complete the project, but only to plan it in its entirety. You should complete the early phases of the project, however, so that you have the experience of actually comparing, controlling and monitoring a project relative to its plan.} Sections 1, 2 and 3 should be roughly 8 or more pages in length, double-

spaced and in eleven points of ARIAL type. The FRONT MATTER should be written last, just before the term project is turned in.

4. For the following documents, you must turn-in both the former graded version of the document and your newer updated one. It is very important that you make all the changes suggested in the earlier version that was graded. For the project plan, it is important that you update it, as indeed you should after every major phase of the project. Your final project documents should be turned in bound, but not in a loose-leaf notebook.

Requirements Document -- a description of the requirements for the prescriptive solution, due 2-10-15.

Project Plan -- a project plan consisting of schedule (Work Breakdown Structure, and Gantt chart), cost, resources, assignments, exactly as described in the notes, due 3-10-15. You must have at least 50 tasks.

Proposal -- a discussion of the specific problem addressed in the project or case and the proposed solution, and formatted exactly as described in the notes, due 3-26-15.

The format for the Requirements Document, Proposal and Project Plan is discussed in Burns, Chapter 11.

Mid-Term Report -- as previously discussed, due 4-2-15—does not have to be revised and turned in with the final term project, unlike the other deliverables. This is to be done *individually*, not in teams.

Earned Value Analysis -- a way to assess where the project is relative to budget and schedule. You can use Microsoft Project to assist you with this, due 4-23-15. Your earned value analysis report must, like all the other documents, appear twice in your final project submission.

All of the above must be revised and turned in with your term project final report, which is due on 5-5-15.

PROJECT GRADING AND EVALUATION: The project or case will be evaluated along the following dimensions.

1. *Originality* -- is the basic application especially interesting or unusual, or is it a re-hash of a well-known textbook illustration?
2. *Analytical approach* -- was the appropriate model (or models) chosen and formulated, and was the analysis complete and accurate? How much validity can be attached to the results?
3. *Documentation* -- were the data sources and other problem characteristics well-documented, and were appropriate literature sources referenced? Are the conclusions and recommendations well articulated and supported?
4. *Quality of the report* -- is the report professionally done, in the correct format, and well-written? How much use is made of plots, charts, and other graphical presentations? Is the content clear, complete and correct?
5. *Correctness* -- more than mere technical accuracy, does the project report describe why what was done was worth doing?
6. *Creativity* -- is the project original, innovative and unusual, does it describe original work?
7. *Complexity* -- what is the sophistication level of the work?
8. *Clarity* -- what is the character and quality of the written document; is it clear what the author has done?
9. *Completeness* -- to what extent does the project address its issue or problem in totality, thoroughness, holism?

PROJECT COMMENTS AND SUGGESTIONS: If done well, a project/case of this type is a tremendous learning experience. In the "real world" of business, industry, and public sector decision making, such undertakings are everyday occurrences at all managerial levels, and promotion to higher levels of managerial responsibility depends to a large extent on one's ability to identify, model, and solve problems, and to communicate the results in a well-written report.

The following "tips" may be helpful to you in identifying an appropriate project or case, and successfully completing the assignment.

1. Try to identify a managerial problem in an environment familiar to you. Problems are all-pervasive in organizations, and few exist that cannot be simulated successfully.
2. Begin now to define your project. Most poor projects (both in academia and in the "real world") are the result of procrastination -- waiting until the last minute, and "throwing something together." I'll be happy to help you focus an idea you may have.
3. One possibility would be to perform a project management initiative on your design project that you did (or are currently doing) for ISQS 4349.

Topics of intense contemporary interest include INTERNET AND WEB-BASED DEVELOPMENT, ENTERPRISE RESOURCE PLANNING, SYSTEMS INTEGRATION, SYSTEMS THINKING, THEORY OF CONSTRAINTS, BUSINESS PROCESS RE-ENGINEERING, E-COMMERCE DEVELOPMENT, WORKFLOW APPLICATIONS and CLIENT/ SERVER ARCHITECTURES, topics about which we will have much to say in this course. We will endeavor to provide you with enough introductory material about these topics so you can make a career decision about which of these areas you want to pursue, in the near term.

Related areas of interest include CAPABILITY MATURITY MODELS, SOFTWARE FACTORIES, TOTAL QUALITY MANAGEMENT, SYNCHRONOUS PRODUCTION, CONCURRENT ENGINEERING, TIME-BASED COMPETITION. All of these contemporary topics entail a pre-occupation with the process. Understanding the process, documenting the process, improving the process, are all activities of intense interest to companies. As mentioned on the first day of class, this course will take this broadened view in addition to coverage of the usual project management topics.

Policy: The instructor reserves the right to make whatever changes are necessary in the syllabus or in the above-stated procedures. If changes are made, the student will be informed of them.

Learning Objectives of course:

1. To understand the project lifecycle
2. To learn the content of PMBOK
3. To learn how to use Microsoft Project for Planning and Execution
4. To learn tools for conceptualization and definition
5. To comprehend the basics of RAD
6. To learn the concepts of maturity and organizational learning
7. To learn systems thinking and system dynamics
8. To learn how to cope with risk
9. To learn how to manage "problems"
10. To learn the various decision environments and the models appropriate for them
11. To employ a managerial perspective that focuses on decision making rather than on the details of algorithms

ISQS 4350 LECTURE SYLLABUS

In what follows, S denotes the Schwalbe text, whereas B denotes the Burns text.

DATE	POWERPOINT	Prior READING S=Schwalbe, B=Burns	COMMENT/Homework
1-15	<u>Course Overview</u>	B: Chapter 1	B: 1-4, 1-7, 1-10, pg 27
1-20	<u>PM Lifecycle/Systems Constructs</u> <u>Schwalbe PowerPoints</u>	S: Chs. 1, 2	S: Ex 2-2
1-22	<u>Goals, Goal Setting and Productivity</u>	B: Chapter 2	B: 2-5, 2-6, pg 19 Pre-proposal due in class (hardcopy)
1-27	<u>Chapter 3: Project Management Basics</u>	B: Chapter 3	B: Brief Case 1 (in Ch 3)
1-29	<u>Chapter 5: Definition and Conceptualization</u>	B: Chapter 5	B: 5-6, pg 34 B: 5-18, pg 40 B: 5-19, 5-20, pgs 40-41 Requirements Scrubbing Spreadsheet
2-3	<u>Chapter 6: Risk, Feasibility Analysis</u>	B: Chapter 6 <u>Burns, Chap 6, EX 6-13</u>	B: 6-11
2-5	<u>Chapter 6: Risk, Benefit/Cost Decision Making under Uncertainty</u>	B: Chapter 6	HW 1 Due today in class (hardcopy)
2-10	<u>Review for Exam 1</u> <u>Exam 1 Hints</u>	<u>Practice Exam 1 Answers</u>	Requirements Doc Due in class
2-12	EXAM I		
2-17	<u>Methodology for Information Systems Project Management</u>	B: Chapter 4	B: 4-3, 4-11, 4-12
2-19	<u>Project Integration and Scope Management</u>	S: Chs. 3, 4	S: Ques. 4-1

2-24	Project Planning and Resourcing	B: Chapter 7 S: Chs. 5, 6	B: 7-4, 7-8, 7-9, pgs 28-32
2-26	A Tutorial on MS Project	Burns, App to 6, App A to Schwalbe	B: Ex 1 in Ch 7 App, pg. 42
3-3	Project Planning: Task Duration Estimation	B: Chapter 8	B: 8-10, 8-13, S: Ques. 7-1, 7-4
3-5	Project Cost and Quality Planning	S: Chs. 7, 8	HW 2 Due today in class (hardcopy)
3-10	Review for Exam 2		Project Plan is due in class (hardcopy)
3-12	EXAM II		
3-24	Project Human Resource and Communication Management	S: Chs. 9, 10	
3-26	Project Procurement and Risk Management	S: Chs. 11, 12	Proposal is Due in class (hardcopy)
3-31	Best Practices	Handout	
4-2	Stage III: Project Execution and Control	B: Chapter 12	B:12-15, B: 12-18 (Probs 15, 18 in Ch. 12) Mid-semester report is Due in class (hardcopy)
4-7	Stage III: Project Execution and Control	EVA Notes; Example EVA	
4-9	Critical Chain	CRITICAL CHAIN	
4-14	Finishing Projects Superfast and Frugal		Handout
4-16	Process Maturity and Project Closeout	Burns: Notes	
4-21	Presentation of Projects	Presentation Order & Format	
4-23	Presentation of Projects		Project Earned Val. Anal is Due in class (hardcopy)
4-28	Presentation of Projects		

4-30	Presentation of Projects		HW 3 is Due in class (hardcopy)
5-5	Review for Final		Term projects are due today in class (hardcopy)
5-7	FINAL	7:30 to 10:00 a.m., this room, Thursday, May 7	Let me know ASAP if you cannot take the FINAL at this time, providing your reason for the conflict.

PROJECT Deliverables

Your project will involve the following deliverables due on the following dates.

<u>DELIVERABLE</u>	<u>DATE</u>
One-page Description (pre-proposal)	1-22
Requirements Document	2-10
Project Plan	3-10
Proposal	3-26
Mid-semester Report	4-2
Earned Value Analysis	4-23
FINAL PROJECT (including all of the above as appendices) (and including scenario, problem, solution)	5-5-2015

BIBLIOGRAPHY

1. Harrington, H. James, Business Process Improvement, New York: McGraw Hill, 1991.
2. Stalk, George, Jr., and Thomas M. Hout, Competing Against Time: How Time-based Competition is Reshaping Global Markets, New York: Macmillan, 1990.
3. Chase, Richard B., and Nicholas J. Aquilano, Production and Operations Management: A Life Cycle Approach, Sixth Edition, Homewook, Illinois: Irwin, 1992.
4. Senge, Peter, The Fifth Discipline: The Art & Practice of the Learning Organization, New York: Doubleday Currency, 1990, 2005.
5. Senge, Peter, et.Al., The Dance of Change: New York: Doubleday Currency, 1990.
6. Goldratt, Eliyahu M., The Goal, Great Barrington, MA: The North River Press, 1992.
7. Goldratt, Eliyahu M. .It's not Luck, Great Barrington, MA: The North River Press, 1994.
8. Goldratt, Eliyahu M.,Critical Chain, Great Barrington, MA: The North River Press, 1997.
9. Davenport, Thomas H. Process Innovation: Re-engineering Work through Information Technology, Boston: Harvard Business School Press, 1993.
10. Hammer, Michael, "Reengineering Work: Don't Automate, Obliterate," Harvard Business Review, pp. 104-112, July-August 1990.
11. Cox, Charles A. "Keys to Success in Quality Function Deployment," APICS: The Performance Advantage, Vol. 2, No. 4, pp. 25-29, April 1992.
12. Joseph T. Vesey, "The New Competitors: They Think in Terms of 'Speed to Market'," Production and Inventory Management Journal, Vol. 33, No. 1, pp. 71-78, First Quarter 1992.
13. Bodinson, Glenn, "Time-based Competition is The Competitive Advantage of the 1990s," APICS: The Performance Advantage, Vol. 1, No. 6, pp. 27-31, December 1991.
14. Keen, Peter G. W., Shaping the Future: Business Design through Information Technology, Cambridge, MA.: Harvard Business School Press, 1991.
15. Walton, Mary, The Deming Management Method, New York: Perigee Books, 1986.

16. Li, Lode, "The Role of Inventory in Delivery-time Competition," Management Science, Vol. 38, No. 2, pp. 182-197, February 1992.
18. Frenzel, Carroll W., Management of Information Technology, Boston, MA.: Boyd and Fraser Company, 1992.
19. Rapid Development Using the IEF, Version 1.0, Texas Instruments, Incorporated, July 1991.
20. Pan, Jeff Y. C., and Jay M. Tenenbaum, "An Intelligent Agent Framework of Enterprise Integration," IEEE Transactions on Systems, Man and Cybernetics, Vol.21, No.6, November/December 1991.
21. Hoffman, Kenneth C., "Management of Enterprise-wide Systems Integration Programs," Proceedings of the Second International Conference on Systems Integration, Morristown, New Jersey, June 15-18, 1992.
22. Johnson, James R., The Software Factory: Managing Software Development and Maintenance, Second Edition, Wellesley, Mass.: QED Information Sciences, Inc., 1991.
23. Rumbaugh, James, M. Blaha, W. Premerlani, F. Eddy, and W. Lorenssen, Object-oriented Modeling and Design, Englewood Cliffs, N.J.: Prentice Hall, 1991.
24. Turino, Jon, Managing Concurrent Engineering: Buying Time-to-Market, New York, N.Y.: Van Nostrand Reinhold, 1992.
25. Birmingham, W. P., A. Gupta, and D. Siewiorek, Automating the Design of Computer Systems: The MICON Project, Boston, MA: Jones and Bartlett Publishers, 1992.
26. McGuire, Kenneth, JUST-IN-TIME: An Approach to World Class Manufacturing, Simsbury, CT: The MGI Management Institute, Inc., 1992.
27. Modell, Martin E. Data Analysis, Data Modeling and Classification, New York, N.Y.: McGraw-Hill, 1992.
28. McClure, Carma, The Three R's of Software Automation: Re-engineering, Repository, Reusability, Englewood Cliffs, N.J.: Prentice Hall, 1992.
29. A Guide to Information Engineering Using the IEF: Computer-Aided Planning, Analysis, and Design: Second Edition, Plano, TX: Texas Instruments, Inc., 1989.
30. Lowery, Gwen, & Rob Ferrara, Managing Projects with Microsoft Project 98 for Windows, New York: Van Nostrand Reinhold, 1998.

This page is intentionally left blank.

Name _____

ISQS 4350 Survey

- 1. Have you had any real-world project experience? (YES/NO)**
 - a. If so, explain.**

- 2. Have you had any real-world project management experience? (YES/NO)**
 - a. If so, explain.**

- 3. Do you believe project management is important? (YES/NO)**
 - a. Why or why not?**

- 4. What are your expectations of this class?**