Course Overview: Discusses the concepts, tools, and best-in-class practices for managing effectively in technology-based businesses. Examines contemporary organizational systems and processes. Suggests techniques for dealing with: innovation, organizational complexity, integrated work processes, risk, uncertainty, and change; technology transfer; cross-functional commitment; self-directed teams and leadership. Lectures, case studies, and group discussions are combined to prepare students for leadership positions in today's technology-based organizations.

Course Rationale: We live in a technological world. Managers in today's industrial, commercial, and governmental organizations must function in a business environment that uses technology for gaining competitive advantages. Such technology-based companies come from virtually every segment of industry and government. They include computer, pharmaceutical, automotive, health care, transportation, and financial businesses, just to name a few. New technologies, especially computers and communications have radically changed the workplace and transformed our global economy, with focus on effectiveness, value and speed. Every organization is under pressure to do more things faster, better and less costly. Especially speed has become one of the great equalizers to competitive performance. Traditional linear work processes and top-down controls are no longer sufficient, but are gradually being replaced with alternate organizational designs, new management techniques and business processes, such as concurrent engineering, design-build, and stage-gate protocols. These techniques offer more sophisticated capabilities for cross-functional integration, resources mobility, effectiveness, and market responsiveness, but they also require more sophisticated skills both technically and socially, including administrative techniques, strategy formulation and leadership. Critical success factors (CSF) span across a wide spectrum of technological, organizational and interpersonal issues that involve gaining and maintaining cohesiveness, commitment, technology transfer, self-directed teams, rapidly changing technology and requirements, resource limitations, innovation and demands for flexibility and speedy implementation. Professionals managing in these environments must understand the organizational concepts, methods, tools, and techniques which support modern project management. They require more sophisticated people and organizational skills, specific technical job knowledge, IT competency, and the ability to deal effectively with conflict, change, risks and uncertainty. This course presents an overview of the specific concepts, tools, and best-in-class practices for managing effectively in technology-based enterprises, and helps to prepare students for leadership positions in today's demanding business environment.

Learning Objectives: (1) Knowledge: Develops understanding of concepts, tools, techniques and business processes for managing effectively in today's technology-based organizations. (2) Skills: Helps to develop the behavioral capacities and skills needed for effective role performance in today's demanding business environment, including the use of modern techniques for designing work processes, formulating strategies and leading people. (3) Attitudes & Values: Develops awareness and sensitivity to the intricate, multidisciplinary nature of MOT, including an understanding of commitment, team-based performance norms and decision making, conflict management, power sharing, self-directed team work and organizational alliances.

Pedagogical Approach: The course employs a combination of lectures, case analyses, business/project simulations, videos, and group discussions to develop the conceptual understanding and operational skills needed for effective manageral role performance in technology-based business environments. By all

Textbook: Hans Thamhain, Management of Technology, John Wiley & Sons, 2005 ...available in Harvard Coop

Workbook: Hans Thamhain, Management of Technology (Supplemental Course Notes and Readings), 2010 ...Distributed during first session.

Resource / Reference Material:
- Bugelman, Modesto. Wheelwright, Strategic Mgmt of Technology+Innovation, Irvin 2003
- Monone, Joseph; Winning in HighTech Markets, HBSPress, 1993
- Narayanan, V., Managing Technology & Innovation Competitiveness, New York, 2001

Instructor Biography: --- Dr. Hans Thamhain specializes in technology-oriented project management. He has combined a career of RD&E and business management with university teaching and research. Currently Professor of Management and Director of Technology and Project Management Programs at Bentley University, his industrial experience includes twenty years of technology management positions with GTE/Verizon, General Electric, Westinghouse and ITT. Dr. Thamhain has PhD, MBA, MSEE and BSEE degrees. He has written over seventy research papers and five professional reference books in project and technology management. He is the recipient of the Distinguished Contribution Award from the Project Management Institute (PMI) in 1998, the Research Achievement Award from PMI in 2006 and the IEEE Engineering Manager of the Year 2001 Award. Dr. Thamhain is certified as NPDP and PMP.
<table>
<thead>
<tr>
<th>Session</th>
<th>Date</th>
<th>Topic</th>
<th>Readings &amp; Exercises in Preparation for Session</th>
<th>Assignments Due for Grading</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>(For details see syllabus)</td>
<td>(For details see syllabus)</td>
</tr>
<tr>
<td>1</td>
<td>08/31</td>
<td>#1: MOT Challenges</td>
<td>Read: Text Ch-1. -- Prepare for in-class discussion. See Text Ch-1, 1.10 Critical Thinking, #1, 2, 4, 6.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>09/07</td>
<td>#2: e-Business</td>
<td>Read: Text Ch-2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Case #1: Amazon.com (Text, pp. 32-37)</td>
<td>Case #1, one-page analysis</td>
</tr>
<tr>
<td>3</td>
<td>09/14</td>
<td>#3: Organizing T-Work</td>
<td>Read: Text Ch-3 &amp; Workbk Sec 3,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Exercise: Prepare for in-class discussion--</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>See Syllabus, Topic #4, exercise #1.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>09/21</td>
<td>#3: Organizing T-Work</td>
<td>Read: Text Ch-3 &amp; Workbk Sec 3,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Exercise: Prepare for in-class discussion--</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>See Syllabus, Topic #4, exercise #1.</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>09/28</td>
<td>#4: Concurrent Engineering &amp; IPD</td>
<td>Read: Text Ch-4 &quot;Concurrent Engineering &amp; IPD&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Exercise: Prepare for in-class discussion.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>See Text Ch-4, 4.11 Critical Thinking, #1, 2</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>10/05</td>
<td>#4: Concurrent Engineering &amp; IPD</td>
<td>Review: Text Ch-4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Exercise: Prepare for in-class discussion.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>See Text Ch-4, 4.11 Critical Thinking, #3, 6.</td>
<td>Case #2, one-page analysis</td>
</tr>
<tr>
<td>7</td>
<td>10/12</td>
<td>#5: Managing People</td>
<td>Read: Text Ch-5</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Case #2: Skills at GE (Text, pp. 86-87)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Exercise: Prepare for in-class discussion.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>See Syllabus, Topic #5, exercise #1+2</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>10/19</td>
<td>#5: Managing People</td>
<td>Review: Text Ch-5</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Exercise: Prepare for in-class discussion.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>See Syllabus, Topic #5, exercise #3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>See Text: Ch-5, 5.8 Critical Thinking, #5, 6.</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>10/26</td>
<td>#5: Managing People</td>
<td>Work on Special Assignment:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(No Class)</td>
<td></td>
<td>(i) Take-Home Exam (attached to syllabus)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(ii) Prepare for next class session</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>11/02</td>
<td>#5: Managing People</td>
<td>Review: Text Ch-5</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Exercise: Prepare for in-class discussion.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>See Syllabus, Topic #5, exercise #1+2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>See Text: Ch-5, 5.8 Critical Thinking, #3, 8.</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>11/09</td>
<td>#6: Leading Teams</td>
<td>Review: Text Ch-9</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Exercise: Prepare for in-class discussion.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>See Syllabus, Topic #6, exercise #1, 2 &amp; 3.</td>
<td>Progress Report</td>
</tr>
<tr>
<td>11</td>
<td>11/16</td>
<td>#6: Leading Teams</td>
<td>Review: Text Ch-9</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Exercise: Prepare for in-class discussion.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>See Syllabus, Topic #6, exercise #3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Case #4: Daimler-Chrysler (Text, pp. 224-225)</td>
<td>Case #4, one-page analysis</td>
</tr>
<tr>
<td>12</td>
<td>11/23</td>
<td>#7: Innovation</td>
<td>Read: Text Ch-10</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Case #5: Reinventing Corp R&amp;D (Text, pp. 254-255)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Prep for discussion: See Syllabus, Topic #7, exercise #1+2.</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>11/30</td>
<td>#7: Innovation</td>
<td>Review: Text Ch-10</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Exercise: Prepare for in-class discussion.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>See Text: Ch-10, 10.8 Critical Thinking, #1…7.</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>12/07</td>
<td>#8: Managing Risk</td>
<td>Read: Text Ch-12.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Prepare for discussion: Critical Thinking, Ch-12.6, #1 &amp; 3</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>12/14</td>
<td>Course Summary, MOT Careers, New Directions</td>
<td>MOT trends and career issues</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>---------- LAST CLASS --- END OF COURSE ----------</td>
<td>Term Paper &amp; Team Evaluations due</td>
</tr>
</tbody>
</table>
1. CHALLENGES OF MANAGING IN TECHNOLOGY


Textbook: Chapter 1
Workbook: Section 1
Video: Mars Exploration Rovers

Exercises- Prepare for in-class discussion as assigned:
1. Mars Exploration Rover (MER) -- Workbook, Section 1, p.4. Watch Mars video. Think through the issues. Group discussion. Document key points. Group presentation and in-class discussion.
2. Skill Requirements -- Think through the issues. Group discussion. Document key points. Group presentation and in-class discussion.
3. Careers in Technology -- What kind of jobs and career avenues do you see for a young University graduate with an MS (Business) or MBA, joining a technology or engineering-based company, such as Xerox, GE, Bristol-Meyers, or Microsoft. Think through the issues. Group discussion. Document key points. Group presentation and in-class discussion.
4. How many high-tech management situations can you identify on the front-page of the Boston Globe or the Wall Street Journal or your local newspaper.


2. MANAGING IN AN e-BUSINESS WORLD


Textbook: Chapter 2
Workbook: Section 2
Video: Yahoo!

Exercises- Prepare for in-class discussion as assigned:
1. Dimensions of “technological intensity.” Think through the issues. Prep for group discussion. See text, topic 2.5, pp.30-32.

Minicase: “Reprogramming Amazon), Textbook, Chapter 2, pp.32-37 and Workbook, Section 2, pp. 2-3.

3. ORGANIZING THE HIGH-TECH WORK ENVIRONMENT


Textbook: Chapter 3
Workbook: Section 3
Video: Daimler Chrysler

Exercises- Prepare for in-class discussion as assigned:
1. Managing in a Matrix Environment. After reading Chapter 3, prepare for group discussion (1) Why are functional managers sometimes reluctant to provide resources for company-wide projects? What conditions would reduce the reluctance of these managers, or make them even eager to
contribute? (2) What can project leaders do to create favorable conditions for obtaining and sustaining (functional) resources?

Minicase: GM’s Advanced Vehicle Development; Textbook, Chapter 3, pp. 40-41 and Workbook, Section 3, pp. 2-3.

4. CONCURRENT ENGINEERING AND INTEGRATED PRODUCT DEVELOPMENT


Textbook: Chapter 4
Workbook: Section 4
Video: Daimler Chrysler (II)

Exercises- Prepare for in-class discussion as assigned:

1. What are the challenges and benefits of concurrent project execution/management? What are the critical success factors of concurrent project execution/management? Think through the issues. Write down your thoughts. Prepare for group discussion.

Minicase: The Pentagon Reconstruction Project, Textbook, Chapter 4, p. 61-62 and Workbook, Section 4, pp. 2-3.

5. MANAGING PEOPLE AND ORGANIZATIONS


Textbook: Chapter 5
Workbook: Section 5
Video: W.B.Doner Advertising Company

Exercises- Prepare for in-class discussion as assigned:

1. Influence Bases. Project team leaders must often manage without much “formal” power. Using the table in your Workbook, Section 5, p. 10, as a framework, define the “elements” that support each of the five influence bases. What can project leaders do to develop these elements of influence? Record your thoughts: Workbook Section 5, p.10. Discuss in your group.


3. Barriers to Commitment. What barriers do you anticipate in getting commitment from your team members. Are these barriers to commitment similar/different to the challenges of earning authority (previous item #3)? Record your thoughts.

4. Commitment. Make suggestions for gaining and maintaining commitment. Think of your work environment or situations published in the media, or cases discussed so far. Record your thoughts.

Minicase: Skills at GE. Textbook, Chapter 5 and Workbook, Section 5, pp. 2-3.

6. LEADING TECHNOLOGY TEAMS


Textbook: Chapter 9
Workbook: Section 6
Video: Daimler-Chrysler (II) or W.B.Doner Advertising Company (II)
Exercises- Prepare for in-class discussion as assigned:

1. **Team Leader/Member Expectations.** What do you expect (role) from an effective team leader? What do you expect from effective team members? Record your thoughts in the Workbook on p.9, Section 5.

2. **Influences of Work Environment.** How does the work environment influence project/team performance? Discuss in your group, your thoughts and suggestions.

3. **Building High-Performing Teams.** Select a case or your work situation. Analyze the type of barriers to effective team performance. Make Suggestions for developing a high-performing team. What kind of leadership and management actions could you suggest?


7. **THE ROLE OF TECHNOLOGICAL INNOVATION**


*Textbook:* Chapter 10  
*Workbook:* Section 7  
*Video:* Discovering the Future (The Business of Paradigms by J. Barker)

Exercises- Prepare for in-class discussion as assigned:

1. **Measures of Innovative Performance.** How would you measure innovative performance, for individuals and/or teams? Document your thoughts and suggestions for in-class group discussion.

2. **Drivers and Barriers to Innovation.** From your work experience (or from a case analysis) list the strongest drivers and barriers to innovative team performance.

3. **Building Innovative Work Teams.** Based on the analysis of item #2, make suggestions for developing innovative work/project teams. What kind of leadership and management actions could you suggest?

4. **Swiss Watch Industry Analysis** (Ref: Paradigms Video). Discuss in small groups (a) what promoted the status quo in the Swiss Watch Industry, (b) if you would have been a manager in a Swiss watch company during the early sixties, what leadership actions could you have taken to prepare your company for the upcoming changes in the business environment.


8. **MANAGING RISKS IN HIGH-TECHNOLOGY**


*Textbook:* Chapter 12  
*Workbook:* Section 8  
*Video:* Boeing and Airbus

Exercises- Prepare for in-class discussion as assigned:

1. **Measures of Innovative Performance.** How would you measure innovative performance, for individuals and/or teams? Document your thoughts and suggestions for in-class group discussion.

2. **Drivers and Barriers to Innovation.** From your work experience (or from a case analysis) list the strongest drivers and barriers to innovative team performance.
3. *Building Innovative Work Teams.* Based on the analysis of item #2, make suggestions for developing innovative work/project teams. What kind of leadership and management actions could you suggest?

4. *Swiss Watch Industry Analysis* (Ref: Paradigms Video). Discuss in small groups (a) what promoted the status quo in the Swiss Watch Industry, (b) if you would have been a manager in a Swiss watch company during the early sixties, what leadership actions could you have taken to prepare your company for the upcoming changes in the business environment.


9. **NEW DIRECTIONS IN MANAGEMENT OF TECHNOLOGY**


…… *End of Course Topics!*……
CASE ANALYSES AND PRESENTATIONS

<table>
<thead>
<tr>
<th>Case</th>
<th>Source</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reprogramming Amazon.com</td>
<td>Textbook, pp. 30-32</td>
<td>09/07</td>
</tr>
<tr>
<td>Skills at GE</td>
<td>Textbook, pp. 86-87</td>
<td>10/12</td>
</tr>
<tr>
<td>Thermodyne</td>
<td>Workbook, End</td>
<td>11/02</td>
</tr>
<tr>
<td>Daimler-Chrysler</td>
<td>Textbook, pp. 224-225</td>
<td>11/16</td>
</tr>
</tbody>
</table>

Formation of Case Teams and Discussion Teams. Case analyses are team projects. Up to eight students can sign-up for one team. Each student should participate in one case presentation: (1) Scan cases and decide which one to sign-up for; (2) form case group, up to eight students (this will also be your discussion group).

I. GUIDELINES FOR PRESENTATION TEAM

Interactive Case Discussion (25 minutes total time): The objective of these case discussions is to help students in our class to better understand the concepts and processes of technology management discussed during our lectures and in the readings. The presentation team should lead a dialogue (including small group discussions and exercises) with our class, relating MOT concepts, tools and techniques from our course (lectures, text, videos, etc) to the case situation. Apply the concepts. Show how they can help and what the challenges are. Most of the 25 minutes time should be spent in interactive class discussion, involving students in critical thinking and interactive exercises. Non-discussion/interaction time (i.e. summarizing issues) must be limited to 5 minutes (maximum).

Preparation and Delivery:

1. As part of your homework, analyze the case and prepare for interactive class discussion and exercises.
2. During the lead-in part of the presentation, you can briefly summarize the case issues. However, any summary of the case scenario or any case analysis is strongly discouraged. This was already done as part of the homework by all students in class.
3. The case discussion should help students in our class to better understand the technology management concepts and processes discussed during the lectures and in the readings.
4. The case discussion should focus on the course material discussed during the previous class sessions or the one coming up next. You can also integrate other course material.
5. The case discussion should involve the students in the class with group work and exercises. Generate “critical thinking.”

Written Document. The presentation team should hand in to the instructor the viewgraphs used in the presentation. These viewgraphs must be handed in as a hard copy and sent electronically by email which will be posted on our course BlackBoard site, available to all students.

Evaluation. Each team presentation will be evaluated by both the instructor and the students in the class in four primary areas: (1) MOT focus and effectiveness of helping students in class to understand the material discussed in our course (30%); (2) Involvement of students in class discussions and exercises (30%); (3) integration and application of concepts discussed in class (30%); and (4) Overall sophistication and effectiveness of case discussion (10%).

II. GUIDELINES FOR STUDENTS WHO ARE NOT PRESENTING

Each student (not presenting the case) is required to prepare an analysis of the case (typically ½-page, single line-spaced; not to exceed one page), demonstrating the understanding of the issues and ability of applying some of the course material to the case. The case analysis is needed in preparation for in-class discussion and will be collected for grading. Evaluating your one-page case analysis will be in the following categories: (i) summary of case issues & MOT focus, (ii) connection to course material & in-class discussions, and (iii) specific analysis and sophistication.

PROGRESS REPORTS

This is a brief Progress Report, required at the specified dates (see Summary Schedule, p. 2). Content and Format: Typically ½-page, not to exceed 1 page, single-line spacing, covering the following points:

1. State what you have learned from the course so far and why this new knowledge is important to you, your career or to business in general. As part of your essay you might want to highlight certain readings, cases and videos, and discuss the tools, techniques, methods, models or concepts which were particularly significant to your learning or are especially applicable in your professional field of activities.
2. Evaluate your progress in this course against your learning objectives on a scale from 1–5 (5=best), coupled with a brief explanation.
3. State any problems that you experience in this course. If there are none, simply indicate "NONE” in this section.
4. Rate your overall satisfaction with this course so far: Outstanding; Very Good; Satisfactory; Disappointing. Provide brief explanation.
5. Questions, comments, suggestions to instructor. If you have none, simply write "NONE” in this category.

This assignment is not being graded. However, I’ll take notice of the overall quality (perspective and feedback) of your report as a basis for “extra credit.”
MIDTERM EXAM
This essay-based take-home assignment requires students to investigate a topic by studying the textbook and surveying the literature. The specific assignment is attached to this syllabus.

GRADABLE TEAMWORK
This course will include specific in-class teamwork which will be given in class with the request for specific deliverables, based on the assigned readings and homework. These team assignments are open book/open notes. They are either a quiz or a reflection on the readings and concepts or an application of the tools and concepts studied. The resulting team notes (or paper) will be graded and returned the following week. The same grade is being issued to all participating members of the team. The time allowed for these team assignments will vary depending on scope, but might typically be in the range of 10-25 minutes.

CLASS PREPARATION AND PARTICIPATION
Early in the semester, the class will be divided into small groups of approximately 8 students apiece. The primary purposes of the groups are to prepare for class discussion of cases and to answer specific questions addressed to the groups during class. Individual members of each group may be called upon to answer questions.

Class Preparation and Participation Grade will be determined in two components.

Component A: Instructor Judgment - Instructor will evaluate students on the basis of quality and frequency of in-class contributions to the discussions. Extra weight will be given to students who can share a particular example of management practice from work experience or the media, and relate it to the concepts discussed in class.

Component B: Team Judgment - At the end of the semester, I’ll ask each student to write a self-evaluation and an evaluation of each member of his/her group. The written evaluations of other students are considered confidential and will not be released by me to other students. I will carefully consider these student evaluations before making a final determination of a student’s participation/involvement grade. Specifically, students will be asked to evaluate class participation of members of their “discussion team” regarding the quality and sophistication of contributions made to the discussion group and the class. These student evaluations will serve as an important part for determining the class participation grade. Specifically, at the end of the semester, you will be asked to grade yourself and your group members on this dimension: (1) a self-evaluation and (2) an evaluation of each team member in your “discussion group.” These evaluations are considered confidential and will not be released by me to others. I will carefully consider these student evaluations of group discussions before making a final determination of a student’s “class participation grade.”

Format for Component B Evaluations. The evaluations can be in any format as well as qualitative or quantitative. However, for your guidance, a typical evaluation consists of a narrative of about 60 words (5 lines) for each student on your team, addressing the following dimensions of group/class participation, involvement and contribution:

- Contribution/benefit to the group discussion, critical thinking and learning
- Contribution/benefit to the class discussion, critical thinking and learning
- Preparation on assignments (HW, cases, readings, etc.)
- Attitude, enthusiasm and help toward the group; promptness at scheduled meetings
- Attendance, both at class and scheduled group meetings.

Class Participation Evaluations are due to me together with the term paper. Please attach the Evaluation to your term paper, or send by email (hthamhain@bentley.edu), or regular mail (Thamhain, Department of Management AAC 313, Bentley University, Waltham, MA 02452-4705).

Any student who feels uncomfortable with this team self-evaluation should see me to request an exemption from this assignment.
TERM PAPER IN MANAGEMENT OF TECHNOLOGY (TWO OPTIONS)

Option A: Term Project with Emphasis on Investigating Managerial Practices

I encourage you to investigate an area of interest to you with the objective to identify potential improvements or to provide an insight into the business environment or operations that you are investigating. The resulting term paper could follow the format of (a) an exploratory field investigation or (b) a case study. This investigation should be especially attractive to students who either work (or did work) in a project-oriented business environment, or are willing to investigate a project-related situation reported in the media (e.g., Big Dig, Boeing, Mars exploration, presidential election, product development, a company merger, etc.).

PLEASE NOTE, YOU DON’T HAVE TO BE EMPLOYED OR HAVE WORKED FOR AN ORGANIZATION TO USE THIS OPTION.

Option B: Survey Paper

If you prefer to investigate a specific topic and to write the results as a survey paper. You can select one of the following topics:

- Leading technology-based teams in the multinational enterprise
- Stimulating innovation in the workplace
- Building innovative work teams
- Measuring R&D performance
- Working effectively in a matrix organization
- Contemporary new product design processes (also for services)
- Obtaining and sustaining commitment in technology-intensive work environments
- Managing risks in technology-intensive projects: going beyond the analytical methods
- Leading without formal authority.

Survey Process. Select the topic that interests you. Investigate the topic by sampling the literature and analyzing selected papers. Then, write a survey paper on your topic. Integrate your own thoughts, and concepts, tools and perspectives learned in our course. You must attach copies of the key articles which you used in your survey. The structure of your survey term paper would be similar to that suggested for Option A, except it would focus on analyzing the literature in more depth to substitute for the missing interview data/information.

Examples of MOT Term Paper Topics from previous courses (Option A):

- An investigation of the technology planning process at the xyz company
- Barriers to teamwork in technology-based work environments
- Building multinational project teams
- Examining technology tools for implementing new financial services
- Gaining and sustaining commitment in new product developments
- Implementing a project management maturity model at xyz
- Investigating enterprise-wide systems for linking management data
- Lessons learned for managing conflict effectively in high-technology situations
- Maintaining commitment high-tech project team members
- The role of technology in managing an organizational merger
- Organizing a hi-tech project office
- Management of the Alpha product development
- Techniques to control R&D projects
- Using MOT concepts for improving an accounting system
- Risk management practices at the abc corporation
- Managing innovation and creativity.

Structure of Your Term Paper (Option A & B). Your paper could follow any format, but the text should be subdivided into sections for ease of readability. A typical format for an exploratory study, such as Option A or B, is suggested below (however, this is just a suggestion, and your topical breakdown might be more suitable for your type of an investigation/reporting):

- Introduction. Broad description of topic. Objective, significance and scope of your investigation. What is known about the challenges and problems.
- Situation & Method. Briefly describe/document the situation that you are investigating. State how you investigated the situation or subject area, and how you evaluated the data.
- Subject Knowledge. What do you know about the subject area of your investigation? Relate to course material. Integrate some additional material from the literature, including internet and media. ≈ Depending on the investigation, you might integrate this section with the Introduction and/or Analysis Section.
- Analysis (Option A) or Summary of Findings (Option B). State your findings and discuss their significance and application to MOT.
- Recommendations / Conclusion / References / Appendix (e.g. support material, reference articles, etc.).

Reference Articles. If your investigation is a survey paper or is based on media reporting (i.e. Mars exploration), please attach copies of key articles used as information sources in your investigation.

Evaluation. The term paper will be evaluated in the following three categories: Subject knowledge, relevancy to course material and literature references (30%), sophistication, significance, depth and logic of analysis, results, findings, recommendations & conclusions (30%), application of course material, concepts, tools & techniques…showing what you have learned (30%), overall style and structure of paper, including clearly stated, objectives, scope, method, citations, bibliography, section headings, page numbers (10%).

Paper Length (No page limitation, max or min): The length of your paper may vary depending on the topic and support material included. However, as a guideline, the average length of a typical term paper has been around 8 pages in the past (single line-spaced.). The Term Paper must be typewritten.

Term Paper Synopsis, Storyboards, and Instructor Feedback.

A one-page synopsis of your term paper is required from all students who plan to do the Field Investigation or Survey Paper (Option A or B). Synopsis Format:

Title of Term Paper, Student Name

Synopsis: Describe in less than 70 words, what (scope) and how (method) you want to investigate and what you intend to learn from your term paper study.

Significance: Describe in less than 25 words why your proposed study is significant (of value/importance) to you, mg practitioners and researchers.

Results: Describe in less than 25 words what type of results and/or conclusions you try to aim for in your term paper project.

References: List your information sources, such as literature, work experience or media, which will form the basis for your term paper investigation.

All student synopses will be displayed in our classroom, providing a “storyboard” for students, to share and enhance ideas for their term paper development. Instructor will provide feedback. Help sessions will be scheduled if needed.
EXTRA CREDIT

Extra Credit for Extra Effort on Homework. Students can hand in any work relevant to the course as “extra credit.” Examples are assigned homework not required for grading or any work that a student has completed in preparation for a class.

Extra Credit for New Teaching Material. I am looking for new teaching material for the classroom. Examples are videos, news casts, broadcasted essays (i.e. PBS/History Channel Big Dig, Mars Exploratory Rover, Chrysler), published cases, newspaper/magazine/journal articles. Students who can provide me with a reference to or copy of the source material will receive extra credit. The information found may also be useful to the student for the Term Paper.

Extra Credit for Sharing a MOT Critical Incident. Students who can make a presentation of a situation that illustrates challenges, management actions, tool/technique applications, etc related to our course material (helping us to understand the concepts studied in this course) will receive extra credit. The proposed presentations must be discussed/scheduled with me and should not exceed 3 minutes.

Extra credit work will be graded “o.k. – good, or – excellent.” Extra credit work cannot lower the student’s course grade. However, to raise the grade level, it should be better than the average grade earned by the student for his/her regular assigned work. Extra credit work will be considered for final grading on a judgment basis.

STUDENT CONTRIBUTIONS FOR GRADING

1. Take-home exam .................................................. 20%
2. Case Discussion, Short Program (team project) .............. 20%
3. One-page case analysis (all cases together) ...................... 10%
4. In-class team assignments, class preparation and participation* .......... 20%
5. Term project .......................................................... 30%

Total Points Available .................................................. 100%

# The team score is weighted 67% and class preparation & participation is weighted 33% toward the “in class grade of 20%.”

Grade Designation as defined by Harvard DCE:
[A=4.0=95%; Aˉ=3.7=90%; B+=3.3=87%; B=3.0=83%; etc.]

Bentley MOT Course Website

How to access MOT course website at Bentley University:
To find the site the first time you search--

1. www.bentley.edu
2. Left panel: Click on “Faculty/Staff”
3. Right panel: Click on “Quick Links >> Blackboard.” Go to Bb @ Bentley Site.
4. Right side: Log in under “Guest Access” (just click “guest”)
5. Top index tab: Click “courses”
6. Under “course search,” type “thamhain,” click “go”
7. You found the window “Browse Course Catalog”
8. Click on “Research MG646.Thamhain”
9. You reached our course site MGMT E-117. Earmark the course site’s URL and save this URL (e.g. on clipboard). URL = ...
   http://blackboard.bentley.edu/webapps/portal/frameset.jsp?tab=courses&url=%2Fbin%2Fcommon%2Fcourse.pl%3Fcourse_id%3D_4175_1

To access the site after you earmarked it--

1. Use saved URL (see item #9 above) to sign on www
2. Go to right side of Blackboard: Log in under “Guest Access”
3. Use saved URL again in www line (item #9 above) to reach our course website MGMT 5020 (= Research MG646.Thamhain)