426 Project Management I

Northwestern University

Winter, 2016   Ford Building ITW Classroom

COURSE SYLLABUS

Textbooks:

Project Management, The Managerial Process. Clifford F. Gray, Erik W. Larson, McGraw Hill, Latest version (5th or 6th
edition)

Casebook/Course Readings can be obtained electronically direct from HBSP:

https://cb.hbsp.harvard.edu/cbmp/access/43452892

NOTICE OF VIDEO AND AUDIO RECORDING

Students in this course may be subject to periodic audio and video recording. Such recordings will potentially be used by Northwestern University in the future and made available through various means, including web pages, to both students and advisors in the program. By registering for the course, you are consenting to such recording and consenting to having the materials made available for academic and marketing purposes

Software:

All students will need access to a scheduling tool such as Microsoft Project (a demo copy is sufficient and can be obtained from Microsoft's website or the included CD with the textbook). The MS project and Full Monte packages are available for use by students in the IEMS lab, opposite Professor Werwath's office (C118) in Tech.

Purpose:

The purpose of this course is to provide an overview of the field of Project Management as applied to technology intensive, product development projects using a systems orientation. The course will emphasize the basics of Project Management success, the basic process model, applications of project management and certain techniques and key factors for project success in a high risk, high technology environment.

Philosophy:

The course philosophy is that the students bring a wealth of information and knowledge to the classroom experience. It is the job of the instructor to liberate the wisdom of the classroom while modeling behavior for future PMs to "liberate" the wisdom of their teams in the workplace. We will balance theory with practical observations. We are not teaching the use of MS-Project or any other software package. PM is far more than a software package. Project scheduling is expected as part of the overall Final Exam, however any scheduling tool is acceptable that is compatible with MS Project

Objectives:

Upon completion of the class, the student will be able to:

1. Recognize primitive project management cultures. Understand the basics of project and portfolio management as a discipline.

2. Recognize a project in the organization, and be able to match the PM techniques needed to the needs of the organization. Be able to implement project controls within an organization

3. Apply basic project management techniques, or be able to manage those who do in an effective manner

4. Establish basic policies in the organization that will foster and enable effective project management techniques

5. Develop a portfolio based on portfolio management principles

Syllabus

Week 1: Project Management overview: The systems approach, the early warning system

The following subtopics will be covered on an overview basis: The Project Management introduction, Project Management context, Project Integration Management, Project scope management, Project time and cost management, Project quality management, Project human resource management, Project communications management, Project risk management, Project procurement management. Systems approach and systems engineering basics will be overviewed

In class video: The early warning system (Tora Tora Tora) versus Midway

Homework: Read Text Chapter 1-2. Case study: Campbells soup

Week 2: Project management context: The link to strategy and PM basics

We will explore the link between project strategy and project management. The context of the project is the most important element of the project plan. Understanding the context from all

perspectives product, organizational, competitive, and strategic will form the basis of the project objectives and the degrees of freedom afforded the PM. New product roadmaps, portfolio planning and portfolio strategies will be explored

 Homework: Read Chapter 3-4 of text

In class case study: Motorola bandit Pager case versus Shanzai bandit case

Week 3: Establishing the project plan and project policies. Defining the work breakdown and defining the project

This will be a high level and brief discussion of key factors that affect project success, most of which are imbedded in the organization and the culture of the firm. The corrective actions and role of the project manager in process re-engineering will be discussed as well as ways to influence and affect the culture in the firm. Characteristics of highly effective project managers as well as typical organizational contexts which the PM may be utilized and how to insure effectiveness.

 Homework: Read Chapter 5-6 of text

In class video: Patton-leadership style and environmental creation

Article: Smith Kline Beacham and strategic leadership of portfolio management

Week 4: Project planning methodology model. Project life cycle. Project engineering and estimation

We will discuss the basic and typical project life cycle and how project management can be applied to various phases of the product development process and the advantages therein. Multiple case studies will be used to exemplify the past triumphs and failures of project management and how PM was used appropriately or inappropriately by various technology companies. Project estimation methodology-parametric cost estimating

Homework: Read Chapter 8 of text

Case study: R and R and the project management of startups

Week 5: Project scheduling and planning and the use of Monte Carlo analysis

This will be a high level overview of how to develop a detailed project schedule. Students will be shown different scheduling techniques and their ramifications will be described. The distinction between a forward and backward pass will be described. A mock project schedule will be developed and progress tracked to exemplify some of the scheduling techniques described in the textbook. A work breakdown structure will be developed and linked to future project controls techniques including earned value and quality gates

Homework: Read Chapter 9 of text

MID TERM EXAM   Chapters 1 through 8 of text

All cases assigned to date assigned to date

Week 6: Risk management, decision management and subcontract management

The active management of risks and the creation of risk mitigation strategies will be explored. The use of rigorous decision making and decision analysis techniques will be explored as well as the basics of subcontract management will be explored

 Homework: Read Chapter 7 of text,

In class case study: Boeing 767: From Concept to production, versus 787

Week 7: Project controls and earned value analysis, Project audit and closure

Some of the classic project management controls such as earned value will be discussed in detail as well as some of the newer techniques such as stage gate analysis which links the project life cycle work discussed in week 2 with the scheduling techniques from week 4.

Corrective action techniques and the link to process engineering will be discussed

 Homework: Read chapters 13-14 of text

In class case study: Agile software development versus CMM

Week 8: Systems engineering and systems requirements planning and management

We will discuss and cover the basic project management control model and the overall theory of how project management intends to guide projects to successful conclusions through a series of early warning mechanisms that track progress against a plan. Projects rest on a foundation of well understood and architected requirements that link the initial customer expectations to the exit criteria for the project. These linkages require constant management and control in order for the project to succeed. A description of project mission and minimum viable product will be provided as well as the use of the flex matrix which will become more useful later in the class

 Homework: Read articles on systems engineering

In class video: Accountability and plausible deniability (Clear and Present Danger)

Case study: Trustweb case study

Text: Read chapter 12

Week 9: Project leadership, leading teams and effective partnering, Current trends in Project management and integration management. Best current practices in PM. Considerations in international project management

 The role and qualities of the project manager will be examined in this topic. Differentiation between leader and manager as well the dynamics of groups and the role of project manager as facilitator, manager, visionary and coach will be described. Historical analysis of the behavioral attributes of a good project manager as well as the impact of particular project managers on their projects will be discussed. Conflict resolution and influence management skills will be highlighted in this topic

 Homework: Read Chapter 10, 11, 15, 16 of text.

In class case study: Managing oneself, Overloaded circuits

                        What makes a leader-Goleman

Time permitting:

In class negotiation of AMANDA case, which is a dispute resolution case in software development

 Week 10:Managing decision making

Case study: Decision making as strategic leadership

Course grading

Midterm examination   25% (closed book, closed notes, Feb 4)

Estimation exercise   10%

Scheduling exercise   10%

In class participation   10% based on student participation in class

Case studies   15%

Final examination   30%

Program Management Bibliography

 Assessment and Control of Software Risks, Capers Jones, Prentice Hall, 1994. (A classic SW project management text focused on risk management)

 Augustine's Laws, Top Executive Looks at the Complexities of Today's Business Management and Offers Solutions, Norman R. Augustine, AIAA, 1997. (A sarcastic yet insightful look at modern corporations)

 Beyond re-engineering, How the process centered organization is changing our work and our lives, Michael Hammer, Harper Collins Business, 1996. (Among one of the classic Hammer texts on business process re-engineering-BPR)

 Breakthrough Technology project management. Kathryn P. Rea, Academic Press, 1998

 Comprehensive Project Management: Integrating optimizing models, management principles and computers, Adedeji Badiru, P. Simon Pulat, Prentice Hall, 1994. Somewhat obscure text looking at PM from the enterprise perspective

 Creating an Environment for Successful Projects, Robert Graham, Jossey-Bass, 1997 (One of the newer texts on the systemic issues that often block PM implementation-**recommended**)

 Critical Chain, Eli Goldratt, North River Press, 1997 (An alternate and radical approach to PM

Essentials of Project and Systems Engineering Management, Howard Eisner, Wiley, 1997 (Systems engineering focused-Text option 1)

Finding Time, How Corporations, Individuals and Families can Benefit from New Work Practices, Leslie A. Perlow, Cornell University Press, 1997. (A quick read on time management in the 90s)

Fusion Leadership: unlocking subtle forces that change people and organizations, Richard A. Daft,

A Guide to the Project Management Body of Knowledge-PMI Standards committee, 1996 (a bit dry but a useful and well organized reference, the PM standard!)

Handbook of Leadership Development, Center for Creative Leadership, Jossey Bass, 1998

Hope is not a Method, Gordon R. Sullivan, Broadway Books, 1996. (Military approach, written by an ex-general. Great stuff on learning organization and after action reviews- **recommended**)

Leadership is an Art, Max DePree, Dell Publishing. (Quick but insightful read on leadership-inspirational- **recommended**)

Managing High technology programs and projects, Russell D. Archibald. 3rd edition, Wiley and Sons, 2003. very practical text from an IT perspective

Managing New Product and Process Development: Text and Cases,

Kim B. Clark and Steve C. Wheelwright, Free Press, 1993. (Somewhat dated casebook from Harvard Business School-A classic in its day)

Mastering Virtual Teams, Deborah Duarte, Jossey Bass, 1999

Organizational Culture and Leadership, Edgar Schein, Jossey Bass, 1992

Presentation of self in everyday life, Erving Goffman, Anchor, 1959

Principle Centered Leadership, Stephen R. Covey, Simon and Schuster, 1991. (Spiritual oriented approach to leadership)

Productive Workplaces, Organizing and Managing for Dignity, Meaning and Community, Marvin Weisbord, Josey-Bass, 1987. (More of an OD text, traces the history of management science very nicely)

Project Manager's Desk Reference, James P. Lewis, McGraw Hill, 1995. (Alternate text 2, not as robust, more of a soft view of PM)

Project Management, Paul Tinnirello, Auerbach, 2000 (Best practices text)

Project Management Handbook, Jeffrey K. Pinto, Jossey Bass, 1998

Project Management for Business and Technology, John M. Nicholas, Prentice Hall, 2001

Project Management, The Managerial Process. Clifford F. Gray, Erik W. Larson, McGraw Hill, 2003

Project Manager's Portable Handbook, David Cleland, Mcgraw Hill, 2000

Project Management-Strategic design and Implementation, David Cleland, McGraw-Hill, 1999 (Alternate text 4, somewhat obscure but a refreshing look at PM)

Radical Project Management, Rob Thomsett, Prentice Hall, 2002. This is an unconventional view of project management….one that is needed to balance the more conventional views

Rapid Development, Taming Wild Software Schedules, Steve McConnell, Microsoft Press, 1996 (Very software oriented and a little wild. The author has wonderful, and sometimes fun, insights and it's a great read but a long read)

Reinventing Work-The Project 50, Tom Peters, Knopf, 1999 (A quick fifty things to do….an unusual book for those who like lists)

End