OBA 7223: *Project Management*

Spring Term 2022

Class times: online / Tu 6:30 – 9:00 PM.
Classroom: 305 Gerlach / online.
Office hours: Tu 5:30 – 6:30 PM.
Teaching assistant: Ms. Jane Iversen (.15)

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Course Materials
1. A sense of humor, an interest in learning and a sharp pencil.
2. Textbook: *Project Management: Tools and Tradeoffs*, T. Klastorin, Wiley, 1st edition, 2004, ISBN 0-471-41384-4. Republished by Pearson (2012). The book is no longer available from publishers, but copies are available online. The book is *optional*. The lecture notes are comprehensive and, for many students, sufficient.
3. Copyrighted cases from Ivey Publishing: see access instructions on page 9.
4. Registration for the HBS project management simulation exercises ($15 registration) at: https://hbsp.harvard.edu/import/886692.
5. A variety of required materials posted on the course website: https://carmen.osu.edu

Course Description
Almost one-third of the world's economic activity, with an annual value approaching $27 trillion, is organized as *projects*. In response to an increasingly competitive marketplace, organizations now recognize that introducing new products, processes, or programs in a timely and cost effective manner requires professional *project management*. The efficiency of other applications in IT, research and development, and software development is also greatly improved by efficient project management. Yet project management remains a business process that is not well solved, which makes good project managers highly valuable to their organizations. There are major recent developments in project management methodology, discussed within the course.

This course examines the management of complex projects and the tools that are available to assist managers with such projects. Specific activities and topics within the course include, project selection, project teams and organizational issues, a project data analytics exercise, project scheduling, cost and budget issues, managing task time uncertainty, agile project management, project risk management, two project management simulation exercises, resource management in projects, and monitoring and control of projects. Both traditional applications of project management (such as engineering and construction projects) and modern applications (such as information technology projects and new product development) will be discussed. Case analysis and presentations, short videos, study group exercises, and online simulation challenges, support the course.

Course Format
This is a *hybrid* course. Attendance at special group activities is *required* for up to 2.5 hours on Tuesday 1/11, 3/8, 4/19. You may earn 10 points for *participating throughout* and *signing in*. No substitutions or makeups. Everything else can be completed online.

Course Prerequisites
The only formal prerequisite is good standing in a graduate program. However, the course is designed for students who *enjoy* solving business problems with decision models and spreadsheets. The course makes extensive use of Excel and Project software.

Class Materials
Students should bring the lecture notes in their preferred format to every online study session. Also, the "Commentaries" document may be helpful when watching videos.

Lectures
Lectures are *prerecorded* for asynchronous viewing. These materials are the joint property of the instructor and the university, and it is the university's policy that any dissemination, copying, or other copyright violation will result in legal action.

Case Studies
For each case study, each study group should complete a written report that *thoroughly but concisely* responds to the assignment questions accompanying the case. Advice about case report writing appears on page 6. In addition, each study group will prepare written materials for one presentation. Advice about case analysis presentations also appears on page 7.

Evaluation of Performance (details on pages 3-4**)**

	Points
Case reports (by study groups): 3 @ 40	120
Case written presentation (by study groups): 1 @ 20	20
HBS simulation exercises (individually): 2 @ 20	40
WBS exercise (by study groups): 1 @ 20	20
ADE (by study groups): 1 @ 20	20
PAE (by study groups): 1 @ 50	50
Attendance at in-person classroom events: 3 @ 10	30
Final exam (individually): 1 @ 100	100
Total	**400**

General Procedures
1. The rules of the course do not allow you to share information regarding assignments with other study groups.
2. To be fair to all students, materials should be submitted on time (see page 4).

Academic Misconduct
It is the policy of Fisher College that *all* incidents of apparent academic misconduct will be forwarded to the university's Committee on Academic Misconduct. Specifically, you are warned not to share information with other study groups, share work on graded assignments, or violate the stated exam procedures.

Final Comment
The maximum benefit to everyone will occur if the instructor and students all work *together* to enrich the learning experience.

Detailed Course Outline

Week	Date	Chapter	Topic	Problems	Events
1	**1/11**		Background		CPSSE
2	1/18	1	Introduction		
3	1/25	2	Project selection	2.7, 2.9, 2.10	T1
4	2/1	3	Project organization and teams		T2
5	2/8	3	Project organization and teams	3.1, 3.2	WBS
6	2/15	4	Scheduling		Case 1
7	2/22	5	Cost and budget issues	4.2, 4.3, 4.4, 4.8, 4.9	ADE, S1
8	3/1	5	Cost and budget issues	5.1, 5.3, 5.5, 5.6	
9	**3/8**	6	Uncertainty and agile		PAE
11	3/22	6	Uncertainty and agile	6.4, 6.5, 6.6	Case 2
12	3/29	7	Risk management		T4
13	4/5	8	Resource management	7.1, 7.2, 7.3, 7.4	S2
14	4/12	9	Monitoring and control	8.1, 8.2, 8.3	T5
15	**4/19**	10	Managing multiple projects		Case 3, MPMG
	4/26		6:30 - 9:30 PM		Final Exam

Dates with in-class activities are **highlighted**. See page 4 for more detailed explanations.

Important Class Events and Due Dates

Notes:
Details of all assignments are posted on the course website. Assignments are due by midnight on the date shown. A late penalty of one-quarter of the available credit applies starting at 00:01. Assignments that are late by 12 hours or more will receive no credit.

Case Reports and Written Presentations
"Matrix Management: Contradictions and Insights" – **February 16**.
"HMS Pinafore" – **March 23**.
"Waterloo Regional Police Services: The CIMS Project (A)" – **April 20**.

HBS Project Management Simulation Exercises (practice sessions end earlier)
S1 – **February 22**
S2 **– April 5.**

Work Breakdown Structure (WBS)
February 8.

Autonomy Design Exercise (ADE)
February 26.

Creative Problem Solving Skills Exercise (CPSSE)
January 11 (in class).

Project Management "Big Data" Performance Analysis Exercise (PAE)
March 8 (in class).

Multiple Projects Management Game (MPMG)
April 19 (in class).

Final Exam
The final exam will be held on **April 26.** See pages 7-8 for details.

Homeworks, Tutorials (T1, T2, T4, T5) and Exercises (X1, X2)
These are not formal graded assignments. They provide essential, exam preparation.
The dates shown in the table indicate when working the homework questions, tutorials, or exercises would be most useful, based on progress with the lecture material Some details follow.
T1: Tutorial on project selection using Excel.
T2: Tutorial on introduction to Microsoft Project.
T4: Tutorial on Monte Carlo simulation for project estimation using Excel.
T5: Tutorial on using Microsoft Project for resource management.
X1: Project crashing competition using Excel.
X2: Practice exercise on earned value management.

Instructor's Background

- Ph.D. in Management Science, University of California, Berkeley.
- The only multiple time winner of the Fisher College's Pacesetters' faculty research award.
- 2018 President of INFORMS, the leading society for operations research, management science and analytics, with 12,500 members.
- Former President of national society of 1,200 operations management academics and professionals.
- Ranked 13th among 1,376 operations management professors in the U.S. (2008 survey).
- Served as one of two consultants on a project selection problem for the National Institutes of Health, and developed a model that saved 43,500 lives.
- Current research includes several topics on project management: robust schedule optimization, optimal project learning, design of incentives, optimal work breakdown structure design, and net present value optimization.
- Currently consulting on projects with companies on project selection, project planning and scheduling, marketing planning, intellectual property, and logistics applications.
- Developed teaching materials for this course that are in use at Columbia University, UCLA, London Business School, University of Michigan, Washington University, University of Virginia, Case Western Reserve University, University of Minnesota, University of Pittsburgh, University of Oregon, National University of Singapore, Hong Kong Polytechnic University and more than 15 other universities worldwide.
- Teaching Executive Education courses on project management at Fisher.
- Not a LinkedIn member.

Case Report Writing

The following format has evolved over time as being most suitable for the integration of technical analysis and business insights in MBA case reports. This format provides a very effective, concise, logical and high impact written presentation. Each student group is assumed to be a team of consultants addressing the consulting task(s) described in the case and assignment. Examples of excellent case reports are posted on the course website.

1. Executive Summary
Purpose: present detailed recommendations without supporting information. Give enough details to permit implementation of your recommendations. Use of tabular format is encouraged. Try to make a strong first impression.

2. Background
One sentence describing the consulting task(s). One sentence describing the consultants.

3. Assumptions
a. Assumptions of the problem itself, extracted from case information.
b. Assumptions of the model used (where applicable), each first briefly explained and then justified by practical comments.
Use of tabular format is encouraged in both items 3a and 3b.

4. Analysis
Purpose: convincingly justify the recommendations in the Executive Summary. Describe the model(s) used. Descriptions need to be detailed enough to permit verification. Lengthy material may be placed in an Appendix, but requires a citation here.

5. Other Recommendations
Include one or more unique extensions or analyses that go beyond answering the case question. Creativity, when combined with relevance, is strongly encouraged.

6. Maximum Length
Items 1 through 5 should not be more than 3 single spaced pages in 12 point font, with conventional margin spacing. A 2 page report that has the same content as a 3 page report is better.

7. Appendix (not included in page limit)
Where applicable**:** printouts, charts and figures. All items must have a citation in the body (items 1 through 5) of the report.

Overall Advice
Consider how a senior manager in the client organization would react to your report. Is it well organized? Is it convincing, in that all the recommendations are well supported? Are all the necessary definitions given? Is the report interesting to read? Is it impressive and "high impact"? Considering asking a friend who is in business (but not in the class) for comments.

Presentations of Case Analysis

1. The most important thing is to give the necessary information in an audience-accessible and interesting way.

2. Your presentation is evaluated on its "client-impact", which is a combination of content and style. Obviously, you would like a second consulting contract. Consider whether your presentation is convincing and impressive enough to earn it.

3. Submit a hard copy of your PowerPoints.

4. Starting with your Executive Summary often works best.

Final Exam

1. Format and Administration
The exam will be administered online. It will be posted by e-mail by the start time. Students will need to return their solutions by e-mail by the finishing time. The exam needs to be completed individually, without any discussion with others.

2. Exam Philosophy
In an MBA program, an exam should measure how much a student has learned about solving business decision problems which is exportable to the workplace. It follows that the exam needs to simulate the workplace as closely as possible. In a project management course, this means that the exam should (a) allow open access to all materials, and (b) be computer based.

3. Materials Included
All PowerPoint materials (lecture notes, project crashing example, EVM example); lecture videos; tutorials T1, T2, T4 and T5 and supporting spreadsheets; videos V1 through V10; insights from class assignments (CPSSE, WBS, ADE, PAE, MPMG), Cases 1 - 3, and online simulations S1 and S2.

4. Testable Content (possibly subject to minor change, as notified)
Chapter 2: Selection
-- Use of binary optimization and linear programming models to make project selection decisions, under resource and other constraints.
Chapter 3: Project organization and teams
-- All concepts studied in class, for example autonomy and communication.
Chapter 4: Project Scheduling
-- Use of MS Project to draw AON networks and find critical paths, critical activities, and related information including slack.
Chapter 5: Cost and Budget Issues
-- Use of linear programming models to evaluate time / cost tradeoffs in setting delivery times and making optimal decisions about crashing, crashing competition.
Chapter 6: Uncertainty in Task Times
-- Use of Monte Carlo simulation models to estimate expected critical path lengths and related information, and comparison with classical PERT estimates.

Chapter 7: Risk Management
-- Use of spreadsheet models to evaluate direct and indirect costs under various outcomes involving risk.
Chapter 8: Resource Management
-- Use of MS Project, including setting priorities, to perform both automatic and manual resource leveling.
Chapter 9: Monitoring and Control
-- Use of spreadsheet models to compute a variety of cost and time performance measures.

5. Exam Advice and Procedures
a. Bring to the exam all materials related to the course.
b. Ideally, bring to the exam a notebook computer loaded with MS Excel with the relevant Add-Ins, and (if you like) @Risk.
c. Your solutions should be in the form of a brief Executive Summary which contains the key decisions and numbers in your solution, typed in Word. You can attach standard reports from the software. Please label the printouts clearly and refer to them in the text.
d. If necessary, adjust the default settings on your software to provide the best possible results. An example is the "Tolerance" setting in Excel, which should be set to 0%.
e. Give as much information as possible about how your solutions were developed. For example, if using linear programming, provide the full details of your formulation.
f. For the period of the exam, you should not communicate with others or use Internet search.

6. Clarification
Both Microsoft Project questions and crashing competition questions are exam content. Please ignore the comment in one video about "choice of questions". This was a one-time procedure related to the public health emergency. The exam does not allow a choice of questions.

For Your First Self-Study / Group Meeting / Office Hours

1. It is strongly recommended that you read the frequently asked questions document for the course.
2. You may want to purchase and bring the textbook.
3. You need to purchase and bring the coursepack containing case materials.
4. You need to read thoroughly and bring this syllabus. We will not spend time going over the syllabus, but there will be a chance to ask questions about it.
5. You need to access the course website, briefly survey all the materials posted, and bring any questions about them to office hours.
6. You need to bring the lecture notes in whatever format you prefer for convenient note taking.
7. You need to access the "Commentaries" document for the videos.
8. You need to organize or join a study group. Study groups need to be finalized by the second week of the term.

Accessing Ivey Publishing Materials

1. Go to the Ivey Publishing website
2. Login to your existing account or register for a student account.
3. Click on this link or copy into your browser:
https://www.iveypublishing.ca/s/ivey-coursepack/a1R5c00000F1vFBEAZ/busoba-7223-030-project-management
4. Click Add All to Cart.
5. Go to your Shopping Cart and proceed through the Checkout.
6. When payment has been processed, an Order Confirmation will be emailed to you.
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