Course Syllabus Spring 2019
Manufacturing Strategies ENG ME584 A1 Bielmeier

Course Information

Time & Location:	4:30-6:15 pm Monday & Wednesday, EPC 208
Professor:	Christie Bielmeier, PhD
Office hours:	730 Comm Ave (EMA) RM 207. M-R W 2:30-3:30 pm (By appointment)
Contact:	E-mail: cmb77@bu.edu
Book (Required):	Jacobs and Chase, Operations and Supply Chain Management, 14th Edition, ISBN978-0-07-802402-3, 2014. Any addition 10th higher is acceptable. We will not use the "Connect Plus"
HBS Cases (Required):	https://hbsp.harvard.edu/import/591172
Electronics:	Must have a laptop or tablet for daily class attendance and quizzes. Must bring to class every day.

Course Description

Strategic decision-making for technical people in manufacturing companies. Provides practice in applying financial, organizational, and operational concepts through analysis and discussion of case situations. Topics include process alternatives and their implications; interactions among product design, process design, worker skill and worker motivation; supplier relationships; interfaces with marketing and finance; introduction of new technology; capacity planning; and competitive analysis. Taught principally by in-class discussion and guest lectures.

Prerequisites by topic: Graduate standing or consent of the instructor

Goal:

Develop approaches for analyzing manufacturing problems in a real-world business environment. Provide practice in formulating and presenting convincing arguments for a course of action when information is incomplete or ambiguous and reasonable people may arrive at different recommendations. Explore how manufacturing strategy plays out in a variety of product, organizational, and national settings. Explore the interaction of technical, financial, and organizational constraints on manufacturing strategy.

Course Learning Outcomes:

Upon completing this course, students will be able to:

1. Gain an increased understanding of how financial, technical, and competitive concerns interact in a variety of industries and organizational settings.
2. Gain an increased understanding of the importance of perspectives other than the purely technical in manufacturing organizations
3. Gain experience and confidence in oral defense of technical and business proposals
4. Gain facility in producing concise, fact-filled, and clear reports

Course Assessment

- Grading (Total 100%):

Pre-Class Homework 10%	Projects 40%	Final Exam 15%
Post-Class Homework 10%	Exams 15%	Class Participation 10%

Homework: Pre-Class and Post-Class

- All homework will be administered via blackboard. No late home work is accepted.
- Homework problems are to by an individual, but study groups are strongly encouraged.
- Student solutions should be original. Plagiarism will not be tolerated.
- Pre-Class Homework.
    - Due Mondays prior to the start of class. You will be allowed 3 attempts to complete the assignment. Questions will be based on week reading from the textbook.
- Post-Class Homework.
    - Due Fridays at 5 pm. You will be allowed 1 attempt to complete the assignment. Questions will be based on in class discussion, case study reading, and textbook.

Exams & Final Exams

- All exams dates are indicated on the course syllabus and are mandatory.
- No exams will be administered after the exam date. As a courtesy, verifiable extenuating circumstances will be considered.
- All exams will be administered via blackboard and therefore you MUST bring a device that can connect with blackboard to class. Laptops or tablets are strongly encouraged. You will be allowed 1 attempt to complete the exam.

Projects

- Group projects will be completed to complement theory and application presented in the course.
- Projects must be completed in groups of 4-5 people. Projects from individuals will not be accepted. No late projects are accepted.
- All project requirements will be detailed in a project assignment sheet and most follow the layout described within the project assignment sheet. All projects must have cited references.

Case Analysis Assignments

Cases are articles, research papers, website or magazine articles deemed relevant to the course. The majority of the cases are from the Harvard Business School (HBS), which is a leader in business and is a reputable source for current business practices. The selected cases will assist class discussion of (1) practical application, (2) identify disruptive innovation, (3) exposure to new technologies.

For each assigned case, you will be expected to read, understand, and be ready to discuss material. The majority of these cases will require more than one reading and additional research to provide you with clear understanding of the subject matter. Furthermore, you should identify extraneous or irrelevant information that maybe included. For some cases, I will provide study questions prior to due date.

Suggested Article Assignment Process

- READ 1 (Quick)
  - Complete a quick first reading of the case to get the overall article outline. For scholarly articles (such as HBS), read the abstract and results sections first and then read the rest.
  - Do not try to completely understand the case and its details at this point.
  - Write down key issues of the case.
  - Identify the key problems to be addressed
- READ 2 (Detail)
  - Reread the case in detail.
  - Selectively highlight information in the case that relates to the key issues/ problem that you have identified.
  - Identify the key information needed to resolve/ answer the key problem/ issues.
  - Determine whether this key information is available in the case.
  - Write an outline of the key tools, techniques, and/or frameworks that you would like to use to "solve" the problem(s). MOST IMPORTANT!
- READ 3 (SCAN)
  - Scan the case again and apply the appropriate tools/ frameworks to address the issues and problem(s).
  - For missing information in the case, attempt to (1) indirectly derive it from the case, or (2) make some assumptions.
  - Verify that you have resolved the problem(s) and issues that you identified.
  - Clearly identify the key assumptions.

Attendance & Class Participation

- Attendance is mandatory. If you are late, you are absent.
- Attendance will be taken via blackboard at the beginning of each class, and thus, you may want to download the Blackboard app to your smart phone.
- Class participation is based on your professional, active and constructive participation in the solution of the example problems in class, responses to general questions and your regular attendance of the class lectures.
- Absences for extenuating circumstances will be considered on a case-by-case basis and email notification prior to the absence is requested.
- You MUST act in a professional manner to all students while in the classroom and for all group projects. Class discussions can be passionate and opinionated, but should never make other students feel poorly. Bullying or belittling will not be tolerated. Attack the idea, not the person. Being able to take and give criticism is a skill and it will be developed in this class.
- BU's academic Conduct Code: http://www.bu.edu/academics/policies/academic-conduct-code

Course Outline and Important Dates

Week No.	Date 2019 (M)	Topic	Chap.	Case Study In-Class Discussions
1	01/23 (W only)	Course Intro	1	*Post-Class HMWK will focus on CH 1 & Syllabus (No Pre-Class HMWK)
2	01/28	Process Analysis &Metrics Manfg Finance & Control	11 & App. C	"A Short History of the Future of Manufacturing", Sci. American, 2013. "Kristen's Cookie Co. (A)", HBS 686093-PDF-ENG, 2006.
		Discuss Project 1		
3	02/04	Business and Operations Strategy	2	"Fresh Connections", HBS 600022-PDF-ENG, 2003. "Can Tesla Build Enough Electric Cars?" Scientific American, 2016.
4	02/11	DfX /Learning Curves	3 & 6	"Think Inside the Box: Design for Manufacturing and Assembly", Appliance, 2014.
5	02/19 (T)	Types of Processes	7	"Intel: Strategic Decisions in Locating a New Assembly and Test Plant (A)", 713406-PDF-ENG, 2013.
6	02/25	Facility Layout	8	"The Seven Deadly Supply Chain Wastes", Sutherland & Bennett, Supply Chain Management Review, 2008. "AIC Netbooks: Optimizing Product Assem", HBS 4245-PDF-ENG, 2011.
		Exam 1 Week 1-5 (02/25)		
7	03/04	Sales & Operations Planning	19	
		In class presentations Due 03/04		
		Project Written Due 03/04		
Spring Break				
8	03/18	Forecasting	18	"Wilkins: A Zurn Company: Demand Forecasting", HBS 906D06-PDF-ENG, 2006. "FoldRite Furniture Company: Planning to Meet a Surge in Demand", HBS 4555-PDF-ENG, 2010.
9	03/25	Capacity Management Inventory Management	5 &20	"Scientific Glass Incorporated: Inventory Management". HBS 4208-PDF-ENG, 2011. "RL Wolfe: Implem. Self-Directed Teams", HBS 4063-PDF-ENG, 2009.
10	04/01	Six Sigma Quality Motivating a Workforce Lean Supply Chains	12, 13 & 14	"Evolution of the Xbox Supply Chain", HBS GS49-PDF-ENG, 2006. "Value Stream Mapping", Womack, Manufacturing Eng., May 2006. "Mapping the Value Stream", Lovelle, IEE Solutions, 2001.
		Check in Presentations Due 04/03 (no in class presentation)		
11	04/08	Logistics Global Sourcing & Procure	15	"The Bullwhip Effect in Supply Chains", Lee, Padmanabhan and Whang, Sloan Management Review, 1997.
		Exam 2 Week 6-10 (04/08)		
12	04/15	ERP and MRP	16 & 17	"Toyota Motor Manufacturing, U.S.A., Inc." HBS 693019-PDF-ENG, 1995.
13	04/22	Reverse Logistics	21	"Why Things Fail: From Tires to Helicopter Blades, Everything Breaks Eventually", Wired, 2011.
14	04/29	In Class Final Presentations Due 04/29		
		Written Project 2 Due (05/01)		
15	05/09	Final (Cumulative) 6-8 pm		