**MGT 3510 Management of Technology**

**Fall 2012 – MW (1:35 – 2:55 pm) Tech Square 224**

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**Office: Tech Square 494 (***near the Trading Floor***)**

**Office Hours: by Appointment only**

**General Course Overview: Learning Objectives**

This course focuses on analysis of the challenges associated with managing a firm's resources (technology, work force, materials, information, knowledge) for long-term competitive advantage. Particular emphasis is placed on planning under various conditions including rapid technological innovation (in products and processes), international competition, and changing markets. We cover methods to design (plan), measure (assess), and improve (change) technological capabilities for manufacturing and service firms.

Students are exposed to *cases* in actual manufacturing and service industry domains, readings from publications including the Harvard Business Review, and leading research in academic journals such as Administrative Science Quarterly and Management Science. The course requirements include exams, case analyses completed by interdisciplinary teams and article summaries.

**Course Materials**

There is not a textbook for this course. The materials used are readings (you must do library research), cases (via Study.net) and lecture notes (via T-Square) and various additional background readings (via class handouts or T-Square postings). We will use T-Square for posting the class schedule and additional readings and exam results along with schedule updates and other extra material that we cover in class.

**Class Preparation**

*All* reading assignments (including cases) are to be completed prior to the class in which they will be discussed though only some involve written reports to be graded.

**Classroom Environment**

Class attendance DOES REQUIRE A CERTAIN AMOUNT CIVILITY. The following outlines the basic rules of respectful behavior that must be followed to permit the classroom to be a positive learning experience for all who have chosen to attend. Please turn off cell phones, do not talk to your neighbors, and do not read anything other than the class material currently being discussed (this includes Laptop computers). If Georgia Institute of Technology is closed for any reason on a scheduled class day, you should be prepared to adjust the schedule accordingly including taking a quiz or an exam during that next class session. In the next class meeting, the instructor will provide direction as to potential changes in course. (Also check the class web site for changes).

**NOTE**

1. The course syllabus provides a general plan for the course; deviations may be necessary.
2. Students are responsible for the information contained in the Academic Honesty policies found at [**http://www.honor.gatech.edu/**](http://www.honor.gatech.edu/)**.**

**Written Case Analyses: 25%**

This portion of the grade is to be completed in *teams. All groups* must write-up a case analysis for *the first two cases!* For the remaining six cases, groups must pick to either write-up the ODD cases (# 3, 5 & 7) or the EVEN cases (# 4, 6 & 8). **Therefore, a total of FIVE case write-ups are required per group**. Each case should be approximately three typed pages (single-space, 12 point times font, standard margins). Tables, graphs and exhibits may be included in addition to the three pages of text. Case write-ups are due at the beginning of class on the date indicated in the detailed schedule posted on T-Square and are **to be posted to T-Square into your group folder.** Late write-ups will not be accepted!

**DO NOT OBTAIN HELP OR WRITEUPS FROM STUDENTS WHO HAVE COMPLETED THE READINGS OR CASES IN THE PAST. DO NOT ACCESS INTERNET INFORMATION ON THE CASES. IF YOU HAVE READ AN ARTICLE OR CASE IN ANOTHER CLASS, YOU MAY NOT HAND IT IN FOR A GRADE IN THIS CLASS. PLEASE SEE ME IF YOU HAVE ANY QUESTIONS ON THESE POLICIES.**

Formation of Teams: Each team will consist of between 4 to 6 students. Teams will be formed by me to maximize diversity using a survey. **We will wait to do the survey after the drop date** and post them on T-Square. Group work can at times be difficult. Each member of the team will evaluate their own as well as their teammate’s participation in their group’s efforts. All teams are to meet and develop an objective set of behavioral norms for what is expected out of each member of the team. These may include the number of meetings missed, how missed assignments will be considered, lack of cooperative attitude and any others as you see necessary. **This document is to be turned in one week after I post the groups. This contract is to be signed by every member of the group.** The instructor will determine the individual team member’s portion of the group project based on these evaluations. The group evaluation form is attached including an example as to how the scaling system is used to determine the individual grade based on the evaluations received. The blank form that you are to use for the evaluation is attached and will be available on class web page. **Your group evaluation is due on or before the last day of class.**

**Class Participation – Case Debates / Discussions: 15%**

This portion of your grade is individual. Each case will be discussed on the date specified on the detailed schedule posted on T-Square. The instructor and your fellow students will evaluate your participation in the discussion based on a form provided by the instructor. Each student will enter the data from this form into a survey provided by the instructor for each case. Since proper identification is necessary, name tents are recommended!

**Reading Summaries: 10%**

An objective measure of the class participation grade includes written summaries from selected readings. While students are expected to complete *all* readings, typed summaries of key points can be submitted for only for a subset of the readings. A summary is only to be one page (12 point “Times New Roman” font, single spaced, standard margins). Those articles that are candidates for summaries are designated by point values (1.25, 1.00, or 0.75) in the left margin of the “Readings Schedule” spreadsheet found on T-Square. The point value in the left margin assigned to each reading reflects its relative difficulty or length for that reading. There are **15.75** points available. Students must receive credit for 10 points over the entire semester to receive a passing grade (e.g. – 60%) for this aspect of the course. Doing more summaries will increase your grade proportionally (e.g. - all 15.75 points in summaries would receive 100%). Summaries are due on the date indicated on the schedule and are **to be posted to T-Square in the Assignments section**. Late write-ups will not be accepted. The **ONLY** acceptable write-ups are those posted on T-Square prior to the due date and time (the time will be **1:30 pm** on the date due!)

**Mid-Term Exam: 15%**

The Mid-Term exam is comprehensive up through the class just prior to the exam (approximately the first half of the semester). The format will be either essay, short answer or multiple choice OR a combination of methods. A study guide will be provided on T-Square at least two weeks prior to the exam.

**Final Exam: 35%**

The final exam is comprehensive (covers the entire semester). The format will be either essay, short answer or multiple choice OR a combination of methods. A study guide will be provided on T-Square at least two weeks prior to the exam

**The target assignment for letter grades will be as follows:**

**A** 89.5 - 100 points;

NOTE FOR PASS/FAIL STUDENTS: Students taking this course on a pass/fail basis will be assigned an "S" for their performance **only** if they would have received a letter grade of "C" or better if they had enrolled in the course on a regular letter-grade basis.

**B** 79.5 - 89.4 points;

**C** 69.5 - 79.4 points

**D** 59.5 - 69.4 points;

**F** Below 59.4 points

**QUESTIONS TO GUIDE CASE ANALYSIS**

**1- Campbell Soup Case**

1. How do you explain the current status of Plastigon after four years of effort?
2. What should Elsner do about Plastigon?
3. What can the firm learn from its experience with Plastigon?

**2- Eli Lilly and Company- The Flexible Facility Decision: (**mathematical analysis is required)

1. How has the competitive environment in pharmaceuticals been changing over the past few years? What are the implications for the role of manufacturing within Eli Lilly?
2. How does each facility option affect Lilly's cost structure, capacity management, and product development capabilities? For what type of products does the proposed flexible facility provide an efficient (i.e., low cost) manufacturing capability?
3. What type of flexibility does the "flexibility facility" provide? What is the value of this flexibility to Eli Lilly? How much is Lilly paying for this flexibility?
4. Given Lilly's strategic goals in the 1990s, which option should Steve Mueller recommend? Are there other options that Lilly should be contemplating? If so, what are they?

**3- Bank of America Case**

1. How would you characterize B of A’s system for developing new services? Focus on (a) process, (b) organization, (c) management, and (d) culture.
2. How is product development different for services relative to manufacturing?
3. What is the role of experimentation? How can a firm maximize its learning from experimentation?
4. Should Butler and Brady accept the ten additional bank branches into its experimentation portfolio? Explain.

**4- HP Kitty Hawk Case**

1. What would you rate as the strengths and weaknesses of the way HP structured and supported the Kittyhawk development team?
2. What do you think of the way the team set out to find a market for the Kittyhawk? What correct turns and what wrong turns did they make?
3. What do you think are the root causes of the failure of the Kittyhawk program? Is there any way HP could have avoided its fate by addressing those root causes?

**5- AMD Case**

1. How do you explain Intel’s market dominance?
2. What were the implications to AMD of Intel’s introduction of the Itanium? What was AMD’s response?
3. Traditionally firms move upstream in the marketplace (start with low-end product, make incremental improvements and move to the high-end). Why did AMD choose the radical approach of grabbing at the top market segment (server)? What made Opteron Attractive to the server market?
4. What actions can AMD take to make inroads into the corporate PC segment?
5. Describe and compare AMD’s “customer centricity program” and Intel’s “roadmap to recovery.”

**6- R&D Management at Universal Luxury Group: (**mathematical analysis is required)

1. What is the technology strategy of the R&D center? What is the business strategy of the perfumes and cosmetics divisions?

2. Does the necessary capacity exist in the R&D center to accept all projects proposed by marketing for the three brands? To answer this question, you will need to create a spreadsheet to compute the demand from marketing for each R&D resource versus the available capacity of each R&D resource.

**HINT**: Assume 216 days/year; 19 chemists in texture; each ancillary chemist can do 3 trials/day. Demand for each R&D resource is based on data in Exhibit 13. Start in the category of SKINCARE. (i) Separately consider demand (#trials/year) for Rio, Queen, and Andanzy for each of innovation, core and variation. This will allow you to develop a *composite value for demand of the R&D resource* in skincare (#trials/year). (ii) Compute R&D resource capacity (# trials/year) available for skincare. (iii) Compute *resource utilization*. *REPEAT (i)-(iii)* for ancillaries; texture; and color.

3. In Question 2, you will find that insufficient R&D capacity exists to meet marketing demand for resources. Moreover, in the following year, marketing has submitted requests that will increase the demand for each R&D resource by 15.4%. How would you respond to the shortage of capacity in the R&D center? What other recommendations do you have to improve firm performance?

**7- Vandelay Case**

1. What is driving Vandelay to consider acquiring R/3? (You will need to assess Vandelay's competitive priorities and current threats to evaluate this question.)

2. (a) What concerns should the CEO of Vandelay regarding the R/3 acquisition? What should he do about these concerns?

(b) What concerns should Kramer have with the project? What should she do about these concerns and how should she proceed?

3. What are the advantages of (i) technology enabled versus (ii) clean-sheet re-engineering approaches?

**8- Solagen Case**

1. How is Kodak currently achieving quality output? Compare the position of the general manager who refers to gelatin making as 'witchcraft' with the position implied by Exhibit 1 and the 'Research Proposal'. Is the movement from art to science inevitable? Is this movement innately desirable?

2 Analyze the advantages and disadvantages of proceeding with Solagen from the perspectives of: Blanchard, Carson, and Bolton.

3. What is your recommendation regarding Solagen. Justify your answer.

**Managing Resources of the Technological Firm**

##### Group Evaluation Form

Please provide an assessment of your performance and that of your group in completing the project. Remember that you are assessing how involved you and your teammates were in completing the assignments over the course of the semester. Please use the following scale:

1. **--> Exceptional effort, above and beyond the call of duty.**
2. **--> Above average effort.**
3. **--> Normal effort (Note: This is the expected score!)**
4. **--> Below average effort.**
5. **--> Unacceptable effort.**

# GROUP NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# YOUR NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Score:\_\_\_\_\_\_

# **Team Member #2**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Score:\_\_\_\_\_\_

# **Team Member #3**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Score:\_\_\_\_\_\_

# **Team Member #4**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Score:\_\_\_\_\_\_

# **Team Member #5**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Score:\_\_\_\_\_\_

**NOTE: Please include a brief reason for any group member scoring either a "1" or "5".**

Example: The expected score means you will share equally in the grade the group project received if your normalized evaluation score (NES) is greater the 2 and less than 4. If your NES is less than 2 but greater than 1, your personal score is 7 points less than the group grade. If your NES is 1 or less, then your personal score is 12 points less than the group grade. If your NES is greater than 4 but less than 5, your personal score is 4 points greater than the group grade. An NES of 5 receives 8 points higher than the group grade. For example, a group receives a project score of 89%. The following scores result: Billy’s NES is a 3.1-score is 89%; Sally’s NES is a 4.1-score is 93%; Jimmy’s NES is 2-score is 82%; Fred’s NES is 1-score is 77%; Frank’s NES is 5-score is 97%. Remember, the expectation is for all to receive the project score. However, individuals make choices about group involvement during the term and those choices have consequences.