The course bridges the rapidly changing technology and Global business in the world today. The strategy and operations of globalized enterprises that either manufacture products or provide services are explored. The Dean of a major U.S. Engineering School asked the CEO of a Global Corporation, “If we teach our students the latest technologies in computer applications for design, manufacture, robotics, supply chain control, flexible and lean manufacturing methods, is that what you want?” The CEO answered, “No, we know that or will learn about it shortly; produce students who understand the spirit and process of a Global manufacturing business.” Today, the "bottom line" is not only ECONOMIC, i.e. PROFIT. The bottom line consists of three core measurements: ECONOMIC, ENVIRONMENTAL AND SOCIAL. This course teaches the spirit and process of a manufacturing enterprise in the globalized world. Off-shoring, re-shoring and outsourcing are options available to a company for the development, manufacture or selling of its products. Global business is examined from the standpoint of product development, supply chains, manufacturing methodologies, financial measurements, ethical considerations and the use/impact of the Internet to facilitate efficient business operations.

Dr. Sheldon Weinig has come full circle from a Professor to entrepreneur to CEO running a globalized public corporation for 25 years. The company was acquired by SONY where he was Vice Chairman of Engineering and Manufacturing for SONY’S 26 factories in the U.S. After 7 years in that position he retired and returned to his first love - teaching. He has served on the boards of many public and private companies as well as several Foundations. A brief bio can be found on his website. (http://www.ams.sunysb.edu/~weinig) E-Mail: SW263@columbia.edu

Midterm Exam: Closed book - 1 page of notes are permitted in exam room.
Final Exam: -same conditions as above/.
Homework: consists of assigned reading and independent research summarized in executive summaries. HANDWRITTEN ASSIGNMENTS ARE NOT ACCEPTABLE. Homework assignments # 1 & 2 are in this Syllabus at the ends of Lectures 1 & 2. They are due at beginning of Lecture 2 & 3.

Texts:
The Goal by Eliyahu M. Goldratt, North River Press
Strategy A View From the Top “(3rd or 4th Edition) by Cornelius De Kluyver & John Pearce II

Grading: Homework & participation 30%, Midterm 30%, Final 40%. (It is not a mathematical formula and professorial judgment is always involved.) Missing two OR MORE homework assignments will lower the final grade.

Office Hours: Students may arrange meeting before class or on SKYPE. The class TA also has office hour on Campus.
SESSION 1, INTRODUCTION.
A. Enterprise is derived from the French word, *entreprendre* – it implies a readiness to take risks for profit. All business is at **Risk.** (Would you have imagined GM declaring bankruptcy?) Business enterprises must respond rapidly to **Change.** **Action** is required to cope with **CHANGE** to remain competitive in the global marketplace. “You can’t manage what you can’t **Measure.**” (William Hewlett, HP)

Four key words: **RISK, CHANGE, ACTION, MEASURE.**

B. Manufacturing Methods (Part 1)
   1. Craft Paradigm followed by Industrial Revolution - late 18 century
   2. Bringing Science to the Shop floor Frederick Winslow Taylor
   3. Mass Production - Henry Ford
   4. Product invasion of Western Countries by Japan and China.

**Assignment #1:** Read article, **Taylor-Made** by Robert Kanigel on Website. Write a 2 page **Executive Summary** of the article (see introduction to “Writing an Executive Summary” on website.) and explain Taylor’s principals and how they have impacted our current globalized society. **Give specific examples.** Due beginning of 2nd session.

SESSION 2, PERFORMANCE MEASUREMENTS.
“**You can’t manage what you can’t measure.**”* (No single or set of measurements can COMPLETELY define a Global Enterprise.)

   - Balance sheet, Consolidated Profit & Loss, Cash flow mandated by SEC.
B. Productivity Measurement: (Bureau of labor statistics)
C. Gross National Product (GNP) dynamic measure of change.
D. Quality & Performance Measurements: 6 sigma, Yield, Productivity, Efficiency, etc.

**Assignment #2:** Read: “BEGINNERS GUIDE TO FINANCIAL STATEMENTS” HTTP://WWW.SEC.GOV” - EDUCATION – PUBLICATIONS Write an Executive summary – maximum 2 pages and include definitions WITHIN of Debt-to Equity Ratio, Working Capital, Current vs. Long Term Debt, Enterprise value.

SESSION #3 BENCHMARKING & MANUFACTURING METHODS
The search for BEST practices that will lead to superior performance for the company.”
1. Benchmarking the competition
2. Benchmarking outside the industry.

Manufacturing Methods (part 2)
(A.) JIT System /Toyota Production Method. (Taiichi Ohno)
   1. Zero inventory myth.
2. Kanban - push vs. pull
3. Kaizening - an evolutionary improvement program.
4. Ideal lot-size of one.
(B.) From Fat to Lean to no Manufacturing: The Porsche Auto Company.

SESSION #4 – CONTINUATION OF MANUFACTURING METHODS INCLUDING 3-D MANUFACTURING.

SESSION #5 - THE GLOBAL ENTERPRISE.
A. What is a Global Corporation?
B. Why do Corporations go Global? Do they have a choice?
C. How to become a Global Corporation.
D. National Culture - A major obstacle to successful globalization.
E. Problems of Global Corporations. Ethics, Professional Practice, Human Resources.


SESSION #7 MIDTERM EXAMINATION

SESSION #8 – PRODUCT DEVELOPMENT AND MIDTERM REVIEW.
A. Develop new products or die!
B. Product development - a potential corporate killer.
C. Time vs. Cost: Money can be replaced - not time.
D. Generation analysis of product development.
E. Parallel teams expedite global product development.
F. Taguchi Method for improved product development.
G. The impact of the Green Revolution on Product Design.
H. DESIGN METHODS & SUPPLY CHAINS FOR GLOBAL CORPORATIONS
   A. Mathematical approach to TARGET COSTING.

SESSION #9. REENGINEERING - NEVER ENDING PROCESS
A. Kaizening is evolutionary whereas re-engineering is revolutionary.
B. The five steps of re-engineering.
D. Remanufacturing methods - an integral part of green globalized design.

SESSION #10. Manufacturing and Marketing Strategies
A. Learning Curve Theory – pricing & strategies based upon it. Texas Instruments
B. Cream & Abandon strategy - Intel.
C. Strategy of Speed: (FIDO) First In Defeats Others.
D. Strategies of Scope & Scale.
E. The Hawthorne effect

SESSION #11 – DEVELOPING CORPORATE & PERSONAL STRATEGIES
A. Strategy is a skill used in managing and planning for success.
   1. The Mission Statement.
   2. The Financial Objectives.
   3. The Action plan.
   4. Evaluate, mid-course corrections and start over.
B. Classical Strategy Development.
   1. SWOT Analysis. (Strengths, Weaknesses, Opportunities, Threats)
      A. Collect data.
      B. Analyze data.
      C. Formulate action plan.
      D. Make **Dam** sure it happens.
      E. Evaluate and amend. (Mid course correction)
C. Some Strategy Techniques
   1. American Management Association (AMA)
   2. Boston Consulting Group (BCG Analysis.)
   4. Weinig’s Manifesto

SESSION #12 CONTEMPORARY STRATEGIC THINKING.
Is there time for classical strategy development in the warp speed globalized business environment that exists today?
That which works is best. There is no single best method! Building a legacy that will outlive one’s career. Will competition in the future be different? How?
Competing for industry foresight. Core competence. What is it? Can it be developed or changed?

SESSION #13 WHAT COUNTS IS A WINNING STRATEGY
Strategies used by the Japanese in “The Economic miracle.”
1. Low labor cost. 2. Scale based. 3. Focused factory. 4. Flexible factory.
5. Strategy of TIME. (Doing activities in less time than competition is a strategic advantage.) Example: Kyocera.

Final Examination Sayonara!