ISM 101: Management of Technology Seminar

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**Seminar Times:** Thursday, 4 PM - 5:45 PM

**Class Location:** E2, Room #192

**Instructor Office Hours:** Tuesday 3 - 5 PM

**About the seminar**
This seminar will expose students to the breadth and depth of management of technology through weekly talks by leading industry practitioners and university researchers in the fields of technology and business. Topics covered will include engineering/product design and development, operations, strategy, microeconomics, finance, and marketing. These topics will be addressed within the context of high technologies such as software, information systems, semiconductors, storage and networks, nanotechnology, and biotechnology.

**Operation of the seminar:**
The course will alternate weekly between talks by UCSC faculty and practitioners from industry as follows:
- Week 1: Introduction and overview of MOT
- Weeks 2, 5, 6, 9: UCSC faculty will provide mostly technological perspectives on the development, management, and commercialization of technology, focusing on their domains of expertise such as software, networking, and semiconductors
- Weeks 3, 4, 7, 8: executives from large and small high-technology companies will provide business perspectives on the development, management, and commercialization of technology
- Week 10: Closure: summary and conclusions from the series; lessons learned

**Contents of the seminar**
The actual topics covered during any quarter will depend on the speakers selected for that quarter and will include many of the topics listed below:
- Understanding Technology and Product Life Cycles in High-Tech, e.g., software, semiconductors, networking, telecommunication
- Technology and Product Development in high-tech domains such software, semiconductors, networks and storage, and biotechnology
- Assessing markets for new technologies and products
- Developing strategies for competitive advantage in new technologies and products
Planning technology development using decision making and risk analysis methods
Economics and finance of technology development
Managing and executing the technology development process
Information systems for integrating the management, planning, execution, and monitoring of the technology development process
Innovation and creativity in new technology and product development
Understanding and managing value chain networks for the technology enterprise
Information Systems for effective and efficient value chain network management

Work involved in the seminar
The workload for this seminar will involve 1.5 hours per week of "in-classroom" time and an average of 2 hour per week of "out-of-classroom" time. Students are expected to write a comprehensive two-part term paper as follows:

- Choose one of the “technology” domains presented by a UCSC faculty member. For this domain briefly describe the technology, summarize the state of the art, and discuss opportunities for innovation and the corresponding commercialization challenges. This will form one part of your paper.
- Choose one of the “business” topics covered by a speaker from industry. For this topic define the problem or issue, briefly describe how the problem was addressed/solved, present key results, describe lessons learned, and discuss future opportunities. This will form the other part of your paper.
- You can do these two parts in any order you choose, i.e., first the technology part and then the business part, or vice versa.

Grading
- Attendance: 20%
- Notebook: 20%
- Term Paper, Part A: 30%
- Term Paper, Part B: 30%

Term Paper: Draft for Part A, due on 10/26; Draft for Part B due on 11/16; Final Paper due on Tuesday 12/5. (Instructions for each part will be provided the week before it is due. “Draft” means a well written, near perfect paper. The instructor will provide feedback on each draft which should then be incorporated to produce the final version.)

General comments
- Note that ISM 101 is a seminar, which is intended to get you interested in and excited about the field of Management of Technology (MOT). To learn and master the fundamentals of MOT you must take the MOT sequence of courses ISM 105 (MOT1) and ISM 125 (MOT2) that are offered, respectively, in Fall and Spring.
- Attendance is mandatory. Please contact me ahead of time if you have to miss a seminar for some important reason.
- Keep a notebook (including speaker names, titles, and dates of each talk) in which you take notes for each seminar. These notes will also be very helpful when writing the term paper.
• **Immerse** yourself in this experience. Don’t be too concerned if you’re a little lost during a talk. If you are too lost see me, and we can take care of the issue.

• Help make the talk interactive by **asking questions**, and **answering questions** posed by the speaker.

• A speaker’s presentation will be available on the class website, www.soe.ucsc.edu/classes/ism101/Fall06, if the speaker uses Power Point slides and gives permission to make these slides available to the class. You can view seminar presentations from last quarter at www.soe.ucsc.edu/classes/ism101/Spring06.

• Your constructive feedback on an ongoing basis (what you like, what you don’t like, suggestions for changes and improvements) will help improve the seminar in this and following quarters.

• If you have any problems related to the seminar, please see me immediately so that we can quickly resolve the issue.

**Reading List (optional)**


**Upcoming Talks:**

9/28/06: Professor Kevin Ross, Information Systems Management, on Resource Allocation Management in the Pharmaceutical Industry

10/5/06: Tom Gill, CIO and Vice-President, Plantronics, Plantronics, Santa Cruz, on Product Development and Information Technology at Plantronics. (Plantronics is the world leader in communication headsets.)

10/12/06: Debbie Janes, Sales Manager, Microsoft, on Marketing and Sales at Microsoft

10/19/06: Professor Nirvikar Singh, Head, Business Management Economics Program, on Disruptive Technologies