

Technology Management Program

“Entrepreneurial Opportunities in Healthcare and Life Sciences”

ENGR 192 A, Fall 2011



University of California, Santa Barbara
College of Engineering

Course website: <http://www.ucsbengr192.com>

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CLASS: Tuesday, 3:30-4:45 PM

CLASSROOM: GIRV 2129

OFFICE HRS: Tuesday 1:30-3:30 by appointment

Phelps 1408

COURSE DESCRIPTION:

In the U.S., the aging population and innovations in medical products are causing healthcare spending to grow astronomically. In 2007, \$2.4 TRILLION was spent on healthcare, and that figure is expected to grow to over \$4 trillion by 2017. Why is this important to students today? Because more and more of what a company has to do to compensate an employee is in the form of health insurance premiums. The more healthcare increases in cost, the more jobs and salaries are adversely affected, with more people becoming uninsured. Healthcare reform is necessary, and the field is ready for new, innovative medical products and services that will not only result in better healthcare, but lead to career opportunities for those who understand the healthcare universe. This course will review the major industries that make up the health care universe, how they deliver goods and services, and how they profit from the existing healthcare system. Entrepreneurial opportunities will be discussed by exploring innovative new medical products and healthcare delivery methods, and how they might “disrupt” the existing healthcare system, leading to lower cost, more effective healthcare in the future. By understanding the various components of the healthcare industry, students will better understand the large variety of career opportunities that will be open to them. Students will apply the knowledge gained by completing a team assignment.

COURSE OBJECTIVES:

1. Understand the healthcare delivery process and the various industries and business models involved in the delivery of goods and services to patients.
2. Looking at a number of healthcare and non-healthcare industries, understand the concept of “disruptive technology”, how it leads to innovation and entrepreneurial opportunities, and how it might change the healthcare landscape in the future.
3. Understand the impacts of potential healthcare reform on the future of healthcare delivery.

Assessment: Student progress will be assessed as follows:

1. Classroom attendance and participation. Attendance will be monitored and will factor into final attendance grades
2. Take home exams (2) covering the assigned readings and classroom discussions.
3. Team Project. Teams of 5-6 students will develop an idea for a new product or service. Teams will present their idea to a panel of “investors” in an oral presentation of 15 minutes. Each team member is expected to participate in the oral presentation.
4. An optional extra credit assignment will be offered at the end of the term.

GRADING:

30% Attendance and Classroom Participation

35% Take-home Exams

35% Team Project

REQUIRED TEXT:

“The Innovator’s Prescription: A Disruptive Solution for Healthcare”, Clayton M. Christensen, Jerome H. Grossman, M.D., and Jason Hwang, M.D., McGraw-Hill, 2009. A copy will be on reserve in the Library. Individual copies may be ordered through Amazon.com.

Other articles and readings may be assigned during the term.

RECOMMENDED FOR FUTURE ENTREPRENEURS (also good for projects):

Kochinsky. The Entrepreneur's Guide to the Biotech Startup. A free PDF download (once registered on the site, also free) www.evelexa.com. Look under the "Startups" tab. Practical information about all aspects of evaluating, founding, financing, and operating a biotech/life science startup.

Byers, Dorf, and Nelson. Technology Ventures: From Idea to Enterprise. 3rd edition. McGraw-Hill, 2010. A broad look at all forms of technology ventures, from IT to biotech to clean tech. The 3rd edition is available only in hardback on Amazon.com (and is pricey). Paperback versions of the 2nd edition (with less about clean tech) are available at lower cost.

Drucker. Innovation and Entrepreneurship: Practice and Principles. Harper & Row, 1985. Somewhat dated, but still a classic. Clear explanations of what innovation is and how to apply it.