



1238.3010.01 - Entrepreneurship in Health Care
Innovation
Prerequisites: None
Module 2 – 2015/16

Course Section Details

Day	Hour	Classroom	Lecturer	Email	Telephone	Office
Varies	See below	See below	Sammut	smsammut@wharton.upenn.edu	9712-058-483-7055	

Session 1: Monday, December 14, 18:00-20:45, Recanati room 303
Session 2: Tuesday, December 15, 18:45-21:30, Recanati room 302
Session 3: Thursday, December 17, 18:45-21:30, Recanati room 302
Session 4: Monday, December 21, 18:00-20:45, Recanati room 303
Session 5: Tuesday, December 22, 18:45-21:30, Recanati room 302
Session 6: Thursday, December 24, 18:45-21:30, Recanati room 302

Office Hours: By appointment

Course Units

Course Units: 1

4 ECTS (European Credit Transfer and Accumulation System) = 1 course unit

By making higher education comparable across Europe, ECTS makes teaching and learning in higher education more transparent and facilitates the recognition of all studies.

Course Description

Health care services and products are rapidly expanding markets worldwide. The common wisdom is that aging economies, particularly in the developed world, will demand ever-growing need for care. While this is true, the emergence of the middle class in the emerging markets will be the driver of further growth. In either venue, the need for innovation for diagnosis and intervention is disease is growing dramatically; the needs, however, are for more cost-effective products, more efficient care, and demonstrable positive outcomes. In other words, the health care business is not business as usual – care will be redefined in ways that we can only begin to imagine. This course is designed to provide an intellectual and practical framework for those students interested in exercising their entrepreneurial energy to solve problems in healthcare. It is not necessary to have training in healthcare, biotech or pharmacy, information technology or bio-medical engineering. While a background in any one of these fields provides insight into the underlying issues and potential solutions, the state of healthcare is such that creative and determines individuals who come into the field with a fresh perspective can make contributions and profits.

Virtually all health care ventures function in an environment where the buyer-seller relationships and value-chains are formulated differently from most other industries. Moreover, companies in health-related industries often have multi-dimensional technology and market risks. New enterprises in the industry are heir to these same risks, which are often magnified in the early stages. Consequently, a relatively small number of entrepreneurs and venture capitalists that specialize in the industry, or even segments of the industry, start the new companies. Even given the specialized experience, a majority of health care startups either fail or never scale up or realize profitability. Conception and evolution of the business model, building and supporting the elements of the business plan, technology and regulatory planning and management, market and reimbursement analysis, investor due diligence, deal structure, compensation and capitalization of these enterprises require special preparation and experience. This course provides intellectual frameworks for the special issues associated with health care startups. Furthermore the course offers methods for self-assessment and development of business models and plans, techniques for technology assessment and strategy, develops a foundation for capitalization and partnering strategies, and creates a basis for best practices in company launch and plan execution.

The course material and lectures are a panoramic view of the components of the industry. Students will have the opportunity to “personalize” the course to their interests based on supplemental readings and selection of a course project.

Course Objectives

Course objectives vary according to the orientation of the particular student. Upon completion of the course, the student will derive benefits accordingly:

1. **Generalists** who are new to the industry or those with education or experience who seek the big picture of needs and opportunities
2. **Pharmaceutical and biotechnology** aficionados or related fields such as stem cells

3. Diagnostic geniuses with interest in laboratory or chemical systems, imaging, physiologic monitoring, or other emerging diagnostic categories

4. Device mavens focused on therapeutic applications, prosthetics, extracorporeal systems or other emerging devices categories

5. Health service innovators with interest in information technology, health care finance, logistics (such as supply chain management or medicinal management), reimbursement, clinical trial management, human resource development or other areas affecting improved performance and outcomes in health services

6. Health policy “works” seeking knowledge of the interconnection of innovation and national or international health policies

7. Developing world explorers interested in adapting medical technology for use in low resource and underserved settings

Assessment and Grade Distribution

Percentage	Assignment	Date	Group Size/Comments
20%	Class participation, attendance and blog contributions		
80%	Final Project	Thursday, February 4, 2016 by 11:59 PM TLV via e-mail to instructor	Up to four students. See description below.

*According to University regulations, a student must be present in every lesson (Article 5).

* The lecturer reserves the right to have a student removed from a course if the student is absent from a class with mandatory participation or did not actively participate in class. (The student will remain financially responsible for the course irrespective of his/her removal from the course)

Course Assignments

There are no exams or quizzes in this course. Participation will be a factor in differentiating student performance but the basis of the grade will be on a course project and the related presentation in the last session.

The time period for project selection, the proposal and development is obviously short. Students are invited to consider ideas and run them by the instructor prior to the course.

Projects can be done on either an individual or a group of up to four students. Obviously, students should align their interests in assembling a team and establish among themselves a

development plan with tasks specifically assigned to each team member. Teams are expected to disclose “free-riders” and there will be a written declaration of equitable performance by team members.

Project categories:

The instructor offers three project types for your consideration. These are of equal learning value in the eyes of the instructor and a type should be selected on the basis of the particular interests of the students.

Option 1: Development of a business plan or a feasibility analysis for bringing a product or service innovation to reality. Unless a student has already spent time in developing a plan, a feasibility analysis will be the most practical project in this option. The instructor will establish contacts with local venture capitalists or university technology transfer offices for those students who do not have a technology of their own. If a student has a technology and is developing a plan, he or she is welcome to recruit classmates to work on the project

Option 2: Development of a case study (for possible use in future courses) on an early stage Israeli company active in the sectors covered by the course. The instructor will solicit the interest of venture capitalists and entrepreneurs in offering a situation worthy of study. The instructor will discuss the case study design based on the particular company or activity

Option 3: “Consultation” to a venture fund in due diligence or financial analysis of an opportunity of interest to them

Option 4: Development of a sector analysis or opportunity map in a particular market category (this will be a focused, “deep-dive” in a specific area)

Option 5: An imaginative project proposed by the student(s).

The schedule for completion of the projects is as follows

1. Submission of a one page proposal identifying the team members, the Option category, the subject and your goals. Due date: start of Session 4. Instructor will return comments by Session 5. The instructor will define the deliverable, establish the basis on which the particular project will be graded, and have a “clinic session” either by telephone or in person on campus
2. Submit two to three page detailed project outline by January 8, 2016 via e-mail to instructor. Instructor will return comments by January 12.
3. Submit final presentation via e-mail by 11:59:00 PM (TLV Time) Thursday, January 28, 2016.

Should a student become unable to complete an assignment or course requirement, s/he must notify the instructor of the course in advance via email
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As of the 2008/9 academic year the Faculty has implemented a grading policy for all graduate level courses. This policy applies to all graduate courses in the Faculty, and will be reflected in the final course grade. Accordingly, the final average of the class for this course (which is a core course) will fall between 82-87%. Additional information regarding this policy can be found on the Faculty website.

Evaluation of the Course by Student

Following completion of the course students will participate in a teaching survey in order to evaluate the instructor and the course for the benefit of the students and the university.

Course Site (Moodle)

The course site will be the primary tool used to communicate messages and material to students. It is, therefore recommended to periodically check the course site in general, periodically, before each lesson, at end of the course as well. (For example: exam details and updates regarding assignments)

Course slides will be available on the course site.

Please note that topics which are not covered in the slides, but are discussed in class are considered an integral part of the course material and may be tested in examinations.

Course Outline*

Sess	Date	Topic and activity	Required Reading and Deliverables	Content and Learning Objectives
1	Monday, Dec 14, 18:00- 20:45	The Healthcare value chain: Implications for business models and strategies The impact of national policies, international trade and treaties, and economic growth on health care innovation and entrepreneurship	Textbooks: Mehta: Chapters 1 and 2, pages 1 to 60; chapter 3, pp. 63 to 103 Burns: Chapters 1 and 5 Instructor slide set Complete your biog on Moodle	Introduction to course. The healthcare sector has a peculiar set of economics and a commercial dynamic unlike any other sector. This session will describe the nature of the industry and what it means to entrepreneurs.
2	Tuesday, Dec 15, 18:45- 21:30	Opportunity Analysis: the interplay of healthcare sectors and an introduction to intellectual property	Textbooks: Mehta, Chapter 4, New Product Development,	This session will demonstrate how opportunities emerge, how they can be analyzed, and assessing the requirements

			<p>pages 104 to 171</p> <p>Burns, Chapter 2</p> <p>Instructor slide set</p> <p>Deliverables:</p>	<p>for making opportunities real. Review of paradigms, inventories and strategies for rigorous assessment of technology and associated due diligence.</p>
3	<p>Thurs, Dec 17, 18:45- 21:30</p>	<p>Building the Health Care Venture Business Plan and Navigating Regulated Markets</p>	<p>Required Reading:</p> <p>Textbooks:</p> <p>Mehta, Ch 8, Manufacturing, pp 226 – 258.</p> <p>Burns, Chapter 3</p> <p>Case Study: “A Father’s Love” There is no discussion guide for this case. The issues are described in the final section of the case study – read these carefully and think about the implications.</p> <p>ANSWER BLOG QUESTION</p>	<p>This session will describe the disciplines, style, research and presentations necessary to make a compelling case for a health-related venture. It will build upon general approaches to business plan construction.</p> <p>Second half of class: Planning systems and strategies for managing regulatory and approval matters and the market and pricing implications. Planning systems and strategies for managing regulatory and approval matters, all illustrated by Case Study Discussion</p>
4	<p>Mon, Dec 21, 18:00- 20:45</p>	<p>Fundamentals of Marketing in Bio-Medical Companies</p> <p>and</p> <p>Case Discussion “Deep Breeze Brings an Innovative Medical Device to Market” A case produced by the INSEAD Israel Research Centre</p>	<p>Submit project proposal (see description)</p> <p>Thoroughly Prepare Deep Breeze Case; see Moodle for discussion guide and Answer Blog Question</p> <p>Textbooks: Mehta, Chapter 7, New Product</p>	<p>This session will apply the fundamental principles of marketing to health related enterprises.</p> <p>The points will be illustrated through a discussion of the Deep Breeze Case.</p>

			Development, pages 264-313. Burns, Chapter 4	
5	Tues, Dec 22, 18:45- 21:30	Strategic Alliances and Partnering and Case Discussion: Biocon Oral Insulin and Health Care Innovation in the Emerging Markets: The Cases of India, China and Brazil	Biocon Case Study on Moodle; see also sheet on issues. Answer blog question. Textbook: Burns, Chapter 6 Any one of the papers from <i>Nature Biotechnology</i> on Brazil, China, India or South Africa (see Virtual TAU – Library – “Cool Stuff on Emerging Markets” file)	In health related ventures, strategic alliances and partnering are essential to the development and growth for most enterprises. This session will describe the strategies, structures, pros and cons of alliances. A Case Study, Biocon, will be used to illustrate some of the principles. The session will end with a survey of activity in the emerging markets.
6	Weds, Dec 24, 18:45- 21:30	Financing the health related venture	Textbooks: Mehta, Chapter 7, pp 264 – 313 Burns, Chapter 8 Instructor slides	Health ventures have unique capitalization issues. Milestone preparation, capital needs analysis, the application of valuation methodologies, and the long-range capitalization strategies require special insights, planning and negotiation. Investors in health care ventures must examine issues unique to the domain, such as managed care insurance, physician influences, and FDA regulation. Session will demonstrate tools for assessing needs vis-à-vis strategy.

*Subject to change

Required Reading

Course Pack Containing:

1. CASE: "Deep Breeze Brings an Innovative Medical Device to Market," A case produced by the INSEAD Israel Research Centre
2. CASE: "A Father's Love"
3. CASE: "Biocon: Oral Insulin"

Textbooks:

Textbook 1: Shreefal S. Mehta, *Commercializing Successful Biomedical Technologies*. Cambridge University Press, 2008. Kindle Edition available on Amazon.com for approximately USD 32.00

Textbook 2: Burns, Lawton R, editor, *The Business of Health Care Innovation*, Cambridge University Press, Second Edition, 2012. Kindle Edition available on Amazon.com for approximately USD 27.00

Moodle Downloads:

Case: Biocon: Oral Insulin

"India's Health Biotech Sector at a Crossroads," Frew, Rezaie, Sammut, et al. *Nature Biotechnology*, 25:4, April 2007

"Chinese Health Biotech and the Billion Person Market," Frew, Sammut et al. *Nature Biotechnology*, 26:1, January 2008

"Brazilian Health Biotech: Fostering Crosstalk between Public and Private Sectors," Rezaie, Frew, Sammut et al. *Nature Biotechnology*, 26:6, June 2008.

Scientific American Lives: New Answers for Global Health, Fall 2010, Richard Gallagher and Stephen Sammut, eds.

Other Course website postings

Recommended Reading

To be provided in class.

Instructor Biography

Stephen M. Sammut

Senior Fellow, Health Care Management and Lecturer, Entrepreneurship, Wharton School
Co-Founder and Vice President, Academic Programs and University Partnerships, One
University Network

Mr. Sammut currently holds an appointment as Senior Fellow, Health Care Management and Lecturer, Entrepreneurship at the Wharton School of the University of Pennsylvania. During his 24 years teaching at Wharton, he has created numerous courses, including Private Equity in Emerging Markets and Health Care Entrepreneurship. He has taught over 9000 students. During his career, he has founded, managed or financed over 40 companies in health care, life sciences, education, and information technology globally. His primary areas of research and publication coincide with his venture and private activity: private equity and venture capital approaches to economic development; health systems and biotech capacity building in the emerging markets; the role of the private sector in addressing needs in global health; and, evidence driven decision making in health care organizations.

Mr. Sammut also Co-Founded and is Vice President, Academic Programs and University Partnerships of One University Network, an international on-line, higher education learning platform affiliated with universities internationally.

He is visiting faculty and coordinator of the Indian School of Business healthcare management program in which he teaches a course on the Indian health care system. He is also visiting faculty at the Strathmore University Business School in Nairobi, Kenya where he founded the first Health Care Management MBA program on the African continent, as well as founding the African Institute for Health Care Management. At Strathmore he teaches a course on the Kenyan Health Care System, and Decision Making in Health Care Organizations. He is a member of the Advisory Panel at the Abraaj Capital Africa Health Fund and a Senior Advisor to the Excelsior Group in Nairobi.

Mr. Sammut's community development time ties his research with practice. He founded and chairs the International Institute for Biotechnology Entrepreneurship which has conducted 45 intensive courses or "boot camps" in 12 countries over the last 10 years. His other community-oriented activity includes board membership on HealthRight International, Center for Medicine in the Public Interest, BioEthics International and the Agora Partnership.

Outside of Wharton, Mr. Sammut was previously a Venture Partner at Burrill & Company, a merchant bank and venture capital fund focused on the life sciences and health care. His role there was capital formation and general management of overseas venture capital funds, particularly in Latin America and the Asia-Pacific region. He has also consulted with the IFC and World Bank on private equity, technology transfer, and venture capital program assessment. Earlier in his career he was Vice President, SR One, the venture capital arm of GSK, and Vice President for Corporate Development at Teleflex Incorporated where he led

the corporate private equity fund and was responsible for M&A activity. He began his career as co-founder and CEO of the transplant organ bank in Philadelphia, the first of its kind in the United States.

He holds graduate and undergraduate degrees from Villanova University in biological sciences and philosophy, holds an MBA from the Wharton School and is a DBA Candidate at the Fox School of Business at Temple University.