

Technological Entrepreneurship ENTR.6510

Syllabus –Spring 2022

Jack M Wilson, PhD, (<http://www.jackmwilson.net/index.html>)

Distinguished Professor of Higher Education, Emerging Technologies and Innovation:

Email: Please use the **Blackboard messaging** system to communicate with the professor.
emergencies only: jack_wilson@uml.edu (assignments are not accepted by email)

Course Chat schedule: 9 pm **Tuesday January 18**, and then each Tuesday after that for 8 weeks

Linked Internet Schedule: <http://www.jackmwilson.net/Entrepreneurship/TE/index.html>

Course Description

Catalog: Technological Innovation has transformed our world by taking the results of research in science and engineering and using it that to create new businesses, new methods of communication, or even curing diseases. This process of commercialization of research can take the form of new businesses, new products in existing businesses, or even new social ventures. This course is designed to help master's level students, including those from fields outside of business, understand how technological and social innovations lead to new businesses and how those are created, funded, governed, and grown. It is taken by

- MBA students with an interest in how technology is creating new ventures and destroying or changing established organizations,
- MSITE or MSE Students (MS in Innovation and Technological Entrepreneurship program).
- PSM (professional science master's) students (PSM), and
- other graduate students who desire to learn more about how technological innovations, scientific research, or inventions can become new companies or new products through the entrepreneurial and intrapreneurial process.

Course Overview: This course is designed for master's level students with backgrounds either in business or in science and engineering who wish to learn more about the process of technology-driven entrepreneurship in new ventures and in established large enterprises. It is available to those with an interest in starting a new venture, social enterprise or those who are involved in innovation or intrapreneurship inside a more established enterprise. In this course, students will explore the entrepreneurship process including how entrepreneurs discover and evaluate the sources and opportunities for new business ventures. The course covers a variety of topics associated with launching and running an entrepreneurial venture, such as opportunity recognition, team building, fundraising, marketing, financing, organizational governance, ethical and regulatory issues, and social and environmental issues. The course is especially relevant to students enrolled, or considering enrolling, in the MSITE or MSE program, the professional science master's (PSM) programs in science, engineering, or health science or those in the MBA program with an interest in innovation and entrepreneurship in technology driven ventures. It is inherently a multidisciplinary program that helps students to learn more about how interdisciplinary teams work in both new venture and established enterprises. Each topic is covered with explanatory materials and actual case studies to illustrate the explanatory materials.

Learning Outcomes: Upon successful completion of the course, you should be able to:

- (1) be aware of the sources of technological innovation and how those innovations flow from the laboratory to the marketplace.
- (2) understand how Schumpeter's process of "**Creative Destruction**" is constantly causing changes in our economy and creating new ways of doing things while the old are replaced -often driven by technology innovation.
- (3) understand how innovations often enter our economy by displacing the least sophisticated portions of the economy, but then growing in sophistication and market penetration until they dominate a particular aspect of the economy. Christensen called this "**Disruptive Innovation.**"
- (4) be knowledgeable of the resources required to start a new venture or introduce an innovation into established markets and be cognizant of how those resources are obtained and used.

- (5) use both traditional business planning techniques and newer approaches like the Lean Launchpad and Business Model Canvas –as adopted by the National Science Foundation, Commerce Department, National Institutes of Health (NIH), National Institute of Standards and Technologies, and other organizations.
- (6) be familiar with the activities and concepts associated with launching and running a new venture, such as marketing issues, financing issues, global and ethical issues, political, legal and regulatory issues, social and environmental issues, and issues involving rapidly changing technology.
- (7) understand and respond to the way that technology is changing existing organizations and enabling new ones.

Prerequisites for the Course

There are no pre-requisites for this course other than graduate standing.

Course Materials:

There is no assigned textbook for this course.

Course materials will be entirely online in the Blackboard Learn system and on various outside websites. As a back-up to Blackboard, most links will be also posted on a website at <http://www.jackmwilson.net/Entrepreneurship/TE/index.html>

Course Materials “Release” Day

Each "week" of this course typically begins on a Monday and ends on a Sunday.

The course calendar at the end of this syllabus provides additional details with regard to the course schedule. Your midterm exam will be held during week 5. Your final exam will be assigned during week 8. You can take your midterm and final exams at any point during that week. More details to follow

Assignment Guidelines

How You Will Be Graded

Your final course grade will be based on the following:

Requirement	% Total Grade		Numeric Grade:	Letter Grade:
Midterm exam	20		94-100	A
Final Exam	20		90-93	A-
Summary Business Plan	30		87-89	B+
Elevator Pitch (60 sec w slides)	10		84-86	B
Class Participation	20		80-83	B-
Total:	100%		77-79	C+
			74-76	C
			70-73	C-
			67-69	D+
			64-66	D
			0-63	F

Course Grading: The grading in this course will consist of

1. class participation on the discussion board (20%) discussing the weekly assignments.
2. a mid-term and a final exam (20% each for a total of 40%),
3. an elevator pitch (one-minute video, audio, or text pitch with slides) based upon the business plan term project (10%),
4. a business plan term paper that represents a summary business plan and business model canvas for a potential example of technological entrepreneurship (30%) that is due two weeks before the class ends,

Failure to take the exams or turn in the final project Business Plan during the assigned week will result in a lowered grade or even failure in the course. More complete descriptions of each of these follow here:

1. **Class Participation on the Discussion Board 20%** Each week we will study a set of topics in business principles relating to Technological Entrepreneurship and a case study of an actual organization that is intended to illustrate some of these business principles. A set of questions will be given at the beginning of each week and the students are expected to use the discussion board to answer and debate these questions. To get full credit you will need to post your answers each week and ALSO comment on the other answers. From time to time there will be short multiple-choice questions to be answered as part of the assignment. Failure to post anything will be a zero for that week. Posting the answers but no further comments will receive a maximum grade of 80%.
2. **Midterm and Final Exams 20%** each for a total of 40%. These will be multiple choice exams that are taken through Blackboard on the dates shown in the schedule. Each exam will consist of 50 questions that consist of multiple choice, matching, or true false questions. You will have two hours to complete the test.
3. **Elevator Pitch 10%**. (Due **Sunday at end of week 7 -March 6**) The online "elevator pitch" includes about ten slides and a one minute video, audio, or text pitch with slides. All students should submit the slides they use for this presentation, but they can chose to accompany the slide with either a 60 second video, a 60 second audio, or a text narrative that would take about 60 seconds to deliver if delivered live. The best format for posting the slides is in a pdf format that is created by PowerPoint or some other presentation software.
4. **Business Plan Term Paper 30%** (Semester term project is due on **Sunday at end of week 7 -March 6**). During the semester you will be asked to pick an example business idea and develop a summary business plan for that idea. The plan must include a business model canvas. The idea could be an actual project that you want to undertake, a project that you have seen others undertake, or simply an idea that you will explore for the purposes of this class. In the past, I have received business plans for topics as diverse as an advanced precision machine shop, a social media start-up, a health care IT venture, a social entrepreneurship project focusing on regional hunger, a prosthetic arm that can grow with the user, a bus stop that uses wind turbines to charge cell phones, and almost anything else you can imagine. The Business Plan submission must also include a Business Model Canvas.

You need to pick your project within the first two weeks of the course and begin writing immediately. Since each week we will take up topics related to the business plan, this would allow you to write this on a section by section basis and have it largely complete by the due date.

The Business plan is to be submitted by **Sunday at end of week 7 -March 6**. The structure is as follows:

Business Plan Structure (<http://www.jackmwilson.net/Entrepreneurship/TE/TE-9-BusinessPlan.pdf>):

1. Cover Page: company name, address, phone number, date, contact person, web site, Facebook, Twitter, etc.
Confidentiality statement
2. Table of Contents
3. Executive Summary of 1-2 pages (critically important)
4. Business Model Canvas.
5. Value proposition: What problem(s) are we solving for our customers? What customer needs are we satisfying? What value do we deliver to the customer? What bundles of products and services are we offering to each customer segment?
6. Key activities of the venture:
7. The team: This is not an explicit part of the business model canvas, but it is one of the most important items to investors as we will see in the next chapter.
8. Form of Business: Sole Proprietorship, Partnership, LLP, Corporation, LLC, S-Corp
9. Financing Plan: Self, Friends and Family, Bootstrap, Angels, VCs, Debt (Bank/other)
10. Key Partners and how they will contribute.
11. Customer segments:
12. Customer Relationships:
13. Channels to reach the customer:

14. Revenue streams: What value are our customers ready to pay for? For what do they currently pay? How are they currently paying? How would they prefer to pay? How much does each revenue stream contribute to the overall revenue? How do your project revenue growth for the first few years?
15. Cost Structure and financial projections for the first few years:
16. Key Resources: What key resources do we need for: our value propositions, our distribution channels, our customer relationships, our revenue streams?
17. Porter 5 Force analysis of your proposed venture
18. The Ask. What do you need from the reader?

Make Up Policy

Late postings on the discussion board will receive half the credit that they would otherwise receive if posted within the following week. They receive zero credit after that time.

Because the mid-term and final exams are able to be taken on your own schedule, there are no make-up exams available unless a prior arrangement has been made with the instructor.

If the term project, consisting of a summary business plan and script for an elevator speech, is submitted late there will be a ten-point reduction in the grade if submitted in the following week and a zero assigned thereafter.

Interaction Guidelines – Communication and Participation

Instructions:

Successful participation in this course will require that you regularly interact with the materials, the instructor and the other students in the class using the tools that are provided by the Blackboard learn environment. Please use the tools in the environment for all of these interactions. These tools include Mail-messaging (not your regular external email), the discussion board, blogs, and live chat. The only materials that will be graded will be those that come through this system. Papers or emails through outside systems will not be graded.

Mail or My Messages (Mail on the Blackboard Course Menu):

Electronic mail is designed for private or personal issues. I will try to read and respond to Mail within one business day. I have a number of business trips this spring that could make my response time longer. In any case, I will respond within the week. Blackboard provides its own internal Mail system. All messages are sent, stored and read within the course. Please use the internal "Mail" system to communicate to me. Please avoid use of your own external email.

To access Mail, log on and go to your course, and click on the mail tool on the course menu on the left side your screen. It is recommended that you check Mail at least once a day, so that you don't miss important course information.

When you are logged onto Blackboard you will see a "My Messages" area in the upper left corner of the home page. Use this indicator to access your email by simply clicking on the indicator. This area will also tell you if you have email waiting.

Chat: Chat is voluntary for this and all UMassOnline courses at UMass Lowell. I would encourage you to try to participate in these chats as much as you possibly can. It allows everyone to participate in a real time exchange and get questions asked and answered quickly with easy follow-up. I will use this time period to summarize the main points and answer question for students.

The live chat will occur **at 9-10 pm** (Eastern standard or daylight as appropriate) on every **Tuesday** night. The Blackboard Collaborate Web Conferencing system allows us to chat with audio, video, and a text-based chat tool. I will be using all three to present material, but the video is optional. Many students may not have or use a web cam, but at least you will be able to view the video and listen to the audio. You will need to attach a microphone if you wish to ask your questions over the audio link. Otherwise, you can use the text chat tool to write your comments or questions.

To access the chat room, click on the Chat tool in your Course Menu, and then the link to the chat room itself. Tutorials for using the Chat tool can be found by clicking on the Blackboard Learn Tutorials for Students link in the upper right corner of your UML Online Learning page.

Our first chat will take place on **Tuesday, January 18st at 9 pm** and then each week thereafter throughout the class. We will record each chat session so that you may review it later. If you cannot attend the session, you can at least review what was discussed during the session by watching the video later.

Discussion Board: Each week we will consider a series of topics that are shown on the syllabus and also discuss an actual case that can illustrate the entrepreneurial principles under consideration in that week. These are enumerated on the syllabus. You are required to participate in the discussion and post comments every week. These will form the basis of the class participation portion of your grade. I monitor the discussion but only participate when I need to guide the discussion in a productive direction. To get full credit you will need to post your answers each week and ALSO comment on the other answers. Failure to post anything will be a zero for that week. Posting the answers but no further comments will receive a maximum grade of 80%. Your answers and comments will be graded and represent 20% of your grade.

Online Tests: You will be expected to take an online midterm and final as laid out in the schedule and syllabus for the course. As noted earlier: each exam will consist of 50 questions that consist of multiple choice, matching, or true false questions. You will have two hours to complete the tests.

Netiquette: Defined by the UMassOnline guidelines.

Netiquette stands for Network Etiquette. It refers to proper behavior while interacting online. The golden rule of netiquette is essentially to treat people as you would want to be treated. Please be polite and considerate. Think about whether your comment could cause hurt feelings. Be careful about how your words can come across because misunderstandings can be common online. Feel free to use emoticons to show your tone.

Academic Integrity Policy: UMass Lowell Online students are expected to be honest and to respect ethical standards in meeting academic assignments and requirements. A student who cheats on an examination or assignment is subject to administrative dismissal. Please visit the [Academic Integrity](#) Web site for specific details regarding this policy.

Student Disability Services: UMass Lowell Online students requiring academic accommodations should contact [Student Disability Services](#) for assistance.

Course Calendar (Chat **Tuesday Jan 18 at 9-10 pm** and then each Tuesday for the ten weeks)

[[Live Updated Calendar](#)] List of All Cases: <http://www.jackmwilson.net/Entrepreneurship/Cases/index.htm>

Wk	Date	Case Study	Assignment Topic
1	18-23 Jan	Linc : From research to company	Introduction : Meet some entrepreneurs Linc-An Example of a Technology based Venture (live chat starts Jan 18 -Tuesday night at 9 pm)
2	24-30 Jan -	Selco Harish Hande- UML	Characteristics of entrepreneurs? How Opportunities are Generated and Recognized
3	31 Jan-6 Feb	Segway Theranos	Analysis of initial feasibility (The causal & effectual models) Ethics and Determining Legal Structures for a Business
4	7-13 -Feb	CRISPR Uber	Protecting Intellectual Property and Developing the Business Model
5	14-20 -Feb	Privo	Business Canvas & Lean Launchpad Business Plans - More formal planning the midterm exam covering weeks 1-5 [STUDY SHEET]
6	21-27 Feb	Invisawear Tesla	Raising the funding Industry and competitor analysis
7	28 Feb -6 Mar	ZipCar Google	Fundamentals of marketing Building a Leadership Team (Business Plan & Elevator Pitch due March 6)
8	7-13-Mar		Projecting and reporting Financial Results Final Exam