



MGT 514: Technological Entrepreneurship ***[3 Credit Hours]***

Instructor Information

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Dropbox

Once we have identified the team members, we will set up a drop box for each team. I will invite the team members to the dropbox and each one will have access to the information submitted and to the feedback. We will use the dropbox as a way to communicate.

Course Information

Course Description:

This course has three learning objectives. First is to integrate the students' knowledge of the many aspects of business that are taught as separate disciplines in universities but are fully integrated in any business. Second is to create an understanding of strategic thinking and decision making as it impacts new firm creation and early stage growth. Third is to lead the student into a broader understanding of the data and information that is necessary to build a business as captured in a business plan for a technology company.

Specifically the student will be asked to develop a deeper understanding of the problems, challenges and issues facing a new firm that is based on an invention or technological advancement. Further the student will be asked to understand the variety of strategic options typically available to technology-based embryonic firms and to understand the contexts within which it is usually appropriate to choose specific strategies. Finally the students will be asked to prepare a business plan.

Course Prerequisites:

To be able to build a business plan for a technology startup, students will integrate information from marketing, management, operations and finance. Students need also to be able to understand the capabilities of the technology so that they can ask intelligent questions about its usage and market penetration. All of this knowledge is acquired by taking courses in these areas or by practical experience. This means that this is NOT a course that should be taken early in one's MBA courses but preferably in the last semester so that one can build on the foundations taken in other courses.

Course Objectives:

- To identify opportunities based on technological innovations.
- To understand the challenges facing a new firm (or a new product in an existing firm) that is based on an invention or technological advancement.
- To experience the excitement and challenge of technology entrepreneurship.
- To develop a knowledge base and elementary skill for the appraisal and development of a significant new technology-based enterprise.

- To know the variety of strategic options typically available to technology-based embryonic firms and to understand the contexts within which it is usually appropriate to choose specific strategies.
- To experience the process of business plan preparation.

Textbooks and Supplementary Materials

Required Textbooks:

Bruce R. Barringer. Preparing Effective Business Plans: An Entrepreneurial Approach. Pearson/Prentice Hall: 2009.

Supplementary Materials:

Steve Blank, **The Four Steps to the Epiphany**, 2nd edition, Steve Blank.

The instructor will have other power point presentations that will help the students with specific areas of the business plan.

Assessment and Grading

Instructor Expectations:

I will give each of you 100% of my commitment to help you successfully complete my class, however, I expect 100% of your commitment to this class, which includes reading the textbook, using the resources available, asking questions during our discussions/classes, completing your assignments, working intelligently and consistently with your team, reviewing the feedback that I give you and continuously improving the business plan on which you are working.

This is not a course where you can leave things to the day before the assignments are due. It is also not a course where you finish one part of the business plan and not reconsider it if you find new information. Business planning is hard work and requires an iterative process of figuring things out but continuously making sure that information that changes one section are reflected in the other sections as well.

This is a course where working with your fellow teammates is essential. This is a good reflection of how things work in real life. If you slack off, you are not hurting yourself only but affecting the team. You should make sure that you have the time to spend on this course and to put in the time that will make your team effort a success.

Business Planning is an integrated activity. What you do in one section/analysis will have an effect on other analyses/sections. For instance, the market analysis section will have an effect on the financials so this is a team effort and not one where each member on the team works on one part of the plan and then you put it together in one document. The plan should be integrated otherwise it will be fatally flawed.

Grade Weighting: List how students will be assessed

1) Deliverable 1	150
2) Deliverable 2	150
3) Deliverable 3	150
4) Final Business plan	150
5) Presentation	150
6) Participation in course:	150
7) team members score	100
Total points	1000

Grading Scale:

Above 950: A
901-949: A-
870-900: B+
840-869: B
801-839: B-
701-800: C

Course Expectations & Ground Rules

Course Expectations:

- *time required (10 hours per week)*
- *students are expected to work and to communicate with one another in this course:*
 - *doing a complete business plan by oneself is very difficult*
 - *choose your team carefully: make sure you have discussed goals, work style, ability to work, ability to discuss, make decisions and living by those decisions. This is a partnership that has to withstand the test of differences of opinion and potential problems that arise in every group. Your grade is based on the group assignments as well as individual participation*
- *Team projects: in business planning, teams that assign different sections to different members will end up with four different sections of a plan that does not read well. one cannot work on a section and then attach things together*
- *students are expected to keep instructor informed of class related problems, or problems that may prevent the student from full participation*

Instructor Drop Policy

The instructor may drop a student, if the student does not complete assignments on time (falling behind in one deliverable will mean that you have to work harder to catch up and with all things for which you signed up, you will not have time).

This course falls under all UNM policies for the last day to drop courses, etc. Please see <http://www.unm.edu/studentinfo.html> or the [UNM Course Catalog](#) for information on UNM services and policies. Please see the [UNM academic calendar](#) for course dates, the last day to drop courses without penalty, and for financial disenrollment dates.

Online Library Resources

UNM's libraries can be accessed electronically at: <http://www.unm.edu/libraries/>.

Students With Disabilities

The American with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodations of their disabilities. If you have a disability requiring accommodation, please contact me immediately to make arrangements as well as Accessibility Services Office in 2021 Mesa Vista Hall at 277-3506 or <http://as2.unm.edu/index.html>. Information about your disability is confidential."

Copyright Issues

All materials in this course fall under copyright laws and should not be downloaded, distributed, or used by students for any purpose outside this course.

<http://www.unm.edu/~counsel/general/copyright.htm>

Academic Integrity

Each student is expected to maintain the highest standards of honesty and integrity in academic and professional matters. Dishonesty is defined as a lack of truth, honesty or trustworthiness. Cheating is defined as influencing or leading by deceit. Deceit is defined as intending to mislead and commonly suggests a false appearance.

A student will be considered to be dishonest if he or she:

- Misrepresents data, results or sources for papers or reports
- Copies another person's work - plagiarism

The students should also be familiar with UNM's [Policy on Academic Dishonesty](#) and the [Student Code of Conduct](#) which outline academic misconduct defined as plagiarism, cheating, fabrication, or facilitating any such act.

Anderson School of Management faculty, staff and students commit to values of trust, honesty, integrity, and accountability. We will not tolerate academic dishonesty. **By enrolling in any course at Anderson, the student accepts the Anderson Academic Honesty Code and affirms the following pledge: I will not lie, cheat, fabricate, plagiarize or use any other dishonest means to gain unfair academic advantage.**

Any violation of the code of conduct will be taken very seriously and appropriate sanctions will be applied. For full text of Anderson's Academic Honesty Code, please visit <http://www.mgt.unm.edu/honesty>

Specific Course Requirements

Course introduction

The focus of this semester is the development of a plan for a new technology business. The class will divide into teams of three students (more students per team is possible but you should note that there is a tradeoff between the added knowledge/effort that more people contribute to a business plan and the added burden of coordinating among a larger number of people). You may work with your friends, but the success of your endeavor will depend on the strength of the team across multiple disciplines so a variety of backgrounds will enhance your success.

Through lectures from the book as well as other information from the instructor, the course simulates the entrepreneurial process through the student business plan development. The course should enable the student to evaluate his or her own desires and prospects for a career as an entrepreneur. In doing so, it provides the aspiring entrepreneur with a framework for selecting, funding, and starting a business. In a highly competitive and ever changing environment, this course provides tools and insights, which improve the chances for success as an entrepreneur.

You should choose intellectual property (IP) from the following sources:

- a) If you are a technologist that have worked on a research team and you are in this course, you want to check with the other scientists on the research team

(your professors, your colleagues, other professors) about their interest in commercializing the technology on which you have worked. This gives you the competitive advantage of knowledge about this area and has a built-in mechanism to feed the new venture with new ideas that will improve the current technology for future versions of your product.

- b) If you are not a technologist OR you have decided NOT to use what you have been working on in a research environment (please rethink this!), then you should look for opportunities elsewhere such as linking with students in engineering, medicine and/or the hard sciences. There are many such groups interested in the UNM Business Plan Competition that could be the link to technologies that you can use (It is expected and in your best interest that you become a founding member of the resulting business).
- c) You can look at research organizations such as Sandia National Laboratories, Los Alamos National Laboratory, UNM, NMSU, NMTech or other groups' research. If you can get the technologist interested in being with you on the team, it is a positive sign. You can examine technologies available for licensing at the following sites:

TechWhiteBoard.com

TechWhiteBoard.com is a free source featuring technologies from SIX national laboratories, making information easily available to help entrepreneurs find exciting technology and licensing opportunities, with user-friendly browser capabilities by technology categories.

Sandia National Laboratories (SNL) Technologies: If you are interested in Sandia technologies, please examine their web site <https://ip.sandia.gov/search.do> for a list of technologies in areas such as bioscience, computers and IT, energy and environment, materials and nanoscience, microelectronics and sensors among many others.

Los Alamos National Laboratory (LANL) technologies:

LANL welcomes interactions with teams in the development of business plans and marketing strategies for selected technologies available for consideration at [LANL's Technology Transfer Division](http://www.lanl.gov/orgs/tt/license/fact_sheets.shtml): review Fact Sheets at: http://www.lanl.gov/orgs/tt/license/fact_sheets.shtml.

UNM Technologies: Look at <http://stcunm.flintbox.com/> for potential technologies to license.

NMSU Technologies: Look at <http://arrowheadcenter.nmsu.edu/ain> for potential technologies to license.

If your team has an issue and/or questions about technology ideas, innovations and products that can form a basis for their company, please arrange to meet with Dr. Kasscieh to explore ideas.

Licensing and Options to license: many organizations are willing to work with you to

secure an option on the license. Without an option or a license, you are taking a chance that you might not be able to get that at a later stage.

The team will research and select a business to pursue. The team will research and write a business plan which must be of a quality that is acceptable to a venture capitalist or an experienced private investor.

Teams of 3 (or so) students each will complete this group project. Teams will write a business plan that is at most 20 pages long with 10 extra pages for the appendices (if needed). Note that these are the rules for the UNM Business Plan Competition (BPC). One of the goals of this course is to have you write a business plan that should be entered in the BPC/technology ventures. The BPC has its own rules that students should consult at <http://bizplan.unm.edu>

In addition to the final write-up, each team will make oral presentations. Actually, getting meaningful feedback from venture capitalists, investors and entrepreneurs is an important part of the process. Learning how to deal with investors, bankers, lawyers, customers, vendors and/or employees is a great learning experience.

Note most business plans take 300-400 labor-hours (which should be allocated among your team members). The book will explain the different sections of the plan so for instance, the book will recommend that the financial statements should include preformed income statements, balance sheets, and operating cash flow statements.

- For year one, generate *monthly* and year-end income statements and cash flows. Prepare a balance sheet (which balances) for the end of year one.
- For year 2, create *quarterly* income statements and cash flows and end of year balance sheets.
- For years 3-5, prepare *year end* statements of income, cash flow, and balance sheet.
- Evaluation of the project will be comprised of a review of the written and oral presentation and peer appraisals (see below).

Caution about group formation

In forming your groups, please pay attention to the usual warning about making sure you get involved with groups with whom you are compatible in many different ways. This is similar to a partnership/marriage and group members should choose carefully since goals, aspirations, common philosophy and outlook, work habits and many other issues should be considered and agreed upon before committing to a group. Add to that the fact that the business for which you are writing the plan, might be lucrative and you might want to proceed with starting a business, then it is doubly important that you agree on issues such as ownership, duties, general procedures for decision making, etc. You should not take the easy way of accepting any group just because they ask. Making sure that you cover this before you commit, saves you a lot of agony and lost sleep later on.

Part of the course grade will come from the confidential *peer appraisal* which is also part

of this course requirements. The grades in the course will depend on the business plan grade and as such each student will complete a confidential peer appraisal reviewing each team member's contribution to the business plan/investor presentation assignment. The peer appraisal is meant to discourage "free riding" by any member of the group and encourage sharing the significant workload of this assignment fairly. I reserve the right to increase or reduce an individual's grade on the business plan based on the group's feedback. The peer appraisal will concentrate on evaluating whether each team member did his/her share of the work conscientiously on a timely basis and with a positive outlook. The peer appraisal will be submitted by each team member the same day the final presentations are done.

If a group decides during the course that one of its members is not pulling his/her own weight, they may, after consulting with the instructor, recommend firing that member. If the member is fired, he/she will have to complete the business plan on his/her own or with a different team (caution: this is most unpleasant and therefore you should consider group formation seriously and avoid such occurrences).

However, the ability to work with others is important, as we shall see in the readings for this course. Success requires cooperation with others. The inability to work with a team will negatively influence the student's grade.

Business Plan Presentation. Your presentations should last 15 minutes and allow 10-15 minutes for questions. These will take place in the last 2 weeks of class (we ask for volunteers for each day: if everyone is interested only in last week, then a random number generator will establish the groups that will present each of the two weeks.

MGT 514- COURSE AGENDA

Module 1: Weeks 1-4

Class meets on August 18 to discuss Syllabus

Class meets on August 25 to discuss chapters 1-3 and chapter 8

Students work on business plan module 1 (you can also use class time to do so) on September 8 and 15 (note September 1 is Labor day and UNM is closed).

Deliverable 1a due end of week 2: should include

- a) The names of team members (e-mail sul@unm.edu the names and e-mail addresses so that we can set up the shared dropbox)

Deliverable 1b due at end of week 4: should include

- a) The management section of the business plan.
- b) The technology you are going to work on and your plan for licensing or getting an option on the license from the technology source,

- c) the technical and economic feasibility of the technology: this should be brief but should show that you have done some preliminary work to insure that you have a viable business idea to pursue as a business (see above for questions that need to be answered for the feasibility study),

EVALUATION

The deliverables 1b will be evaluated as follows:

Ability to identify strengths and weaknesses and to find solutions	25%
Completeness of information	25%
Accuracy in Analysis of information	25%
Convincing conclusions	25%

Module 2: Week 5-8

Technology/product description

Market and competitors information

Class meets on September 22 to cover chapters 4-7 of Barringer’s book

Students work on business plan module 2 (you can also use class time to do so) on September 29, October 6 and October 13.

Deliverables:

By end of week 8, you should be able to deliver the next deliverable.

Deliverable 2: due at end of week 8 should include

- a) the technology description of your product that includes its value proposition to the customers and its differentiation from your competitors
- b) the market analysis section of the business plan as described below:

EVALUATION

The deliverable 2 will be evaluated as follows:

Ability to describe product and how it satisfies market needs	20%
Ability to contrast with competitors	20%
Market analysis	20%
Accuracy in Analysis of information	20%
Convincing conclusions	20%

Module 3 – Weeks 9-12

Operations of business section

Financial projections

Class session on October 20 will cover chapters 9-10 of Barringer book.

Students work on business plan module 2 (you can also use class time to do so) on October 27, November 3 and November 10.

Deliverable 3: due at end of week 12 should include:

- a) The operations section of the business plan: as described below
- b) The financial projections section of the business plan: as described below.

EVALUATION

Ability to define an operational plan	20%
Ability to link financials to other parts of plan	20%
Financial projections	20%
Ability to justify financial requirements	20%
Convincing conclusion on exits	20%

Module 4: Weeks 12-16

Class on November 17 will cover Barringer chapter 11.

Class on November 24: students should work on presentations

Classes of December 8 (if we have more than 3 teams) and December 15: presentations of business plan

EVALUATION OF BUSINESS PLAN

Business Name: _____ Date _____

Owner/Founder's Name: _____

Content	Excellent	Good	Fair	Poor	Bad
Strength of the product idea	5	4	3	2	1
Value proposition of the business	5	4	3	2	1
Thoroughness, accuracy, and depth of environmental and competitor analysis	5	4	3	2	1
Market analysis and marketing plan	5	4	3	2	1
Internal structure – team, organization, board of directors	5	4	3	2	1
Potential for cash flow and accuracy of financial projections	5	4	3	2	1
Opportunities for growth and/or an exit or harvest strategy	5	4	3	2	1
Delivery	Excellent	Good	Fair	Poor	Bad
Organization of presentation	5	4	3	2	1
Strong conclusion	5	4	3	2	1
Professionalism of presentation	5	4	3	2	1
Use of visual aids, slides, webpage, product prototype or handouts—well designed and integrated	5	4	3	2	1
Use of time/length of presentation (15 minutes maximum)	5	4	3	2	1
Handling of potential investor's questions	5	4	3	2	1
Overall Evaluation	5	4	3	2	1

Comments and Justification for Ratings: _____

Team Based Learning: Peer Feedback

Your Name _____ Team # _____ Company
Name _____

Please assign scores that reflect how you really feel about the extent to which the other members of your team contributed to your learning and/or your team's performance. This will be your only opportunity to reward the members of your team who worked hard on your behalf. (Note: By giving everyone pretty much the same score you will be unfair to those who did the most and helping those who did the least.)

Instructions: In the space below please rate each of the other members of your team. Each member's peer evaluation score will be the average of the points they receive from the other members of the team. To complete the evaluation you should:

- 1) List the name of each member of your team in the alphabetical order of their last names (do not include yourself);
- 2) Assign an average of ten points to the other members of your team (Thus, for example, you should assign a total of 50 points in a six-member team; 60 points in a seven-member team; etc.) and note, you are not rating yourself; and
- 3) Differentiate some in your ratings; for example, you must give at least one score of 11 or higher (maximum = 15) and one score of 9 or lower.
- 4) Additional Feedback - In the last column of the table, briefly describe your reasons for your scores and in particular the reasons for your highest and lowest ratings. These comments -- but not information about who provided them -- will be used to provide feedback to team members.

Team Members	Scores (0-15)	Comments and Justification for Score Assigned:
1.		
2.		
3.		
4.		
5.		