



Program Group: Technology Entrepreneurship and Management (TEM)
Course Syllabus

TEM 400: Technology Entrepreneurship
TEM598: Technological Entrepreneurship

Instructor: Steve T. Cho, Ph.D., MBA, Lecturer

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Office Hours: Subject to change. Wednesdays, 3:00-4:15pm and by appointment (e-mail preferred). Communication vehicle: TBD.

TEM400 (15069)

TEM598 (18101)

Spring 2022 | Class # 15069

Seats Open: 25 of 25 ●

Fees: None

Days	Dates	Start	End	Location	Instructor
M W	01/10 - 04/29	4:30 PM	5:45 PM	Poly - AGBCX101	Cho

Enrollment requirements

Prerequisite(s): Business (Technology) BA major OR ENG 102, 105, or 108 with C or better; ENT 305 or TEM 200 with C or better; Credit is allowed for only TEM 400 or TEM 598 (Technological Entrepreneurship) OR Visiting University Student

Offered by

Ira A. Fulton Schools of Engineering

Additional Class Details

Special notes: Students that took TEM 598 - Technology Entrepreneurship will not get credit for taking TEM 400.

General Studies: No

Units: 3

Repeatable for credit: No

Component: Lecture

Combined with: TEM 598 (18101)

Important Deadlines

Last day to enroll: January 16, 2022

Drop deadline: January 16, 2022

Course withdrawal deadline: April 03, 2022

COURSE DESCRIPTION:

Introduces opportunities and challenges that accompany starting and operating a technology entrepreneurial venture by exploring the fundamentals and principles of entrepreneurship

suitable for undergraduate business and technology students. Provides real-world, hands-on learning on what it's like to successfully transfer knowledge into products and processes that benefit society. Engages students with industry, talking to customers, partners and competitors, as the team encounters the chaos and uncertainty of transferring knowledge into products and processes that benefit society.

EXPECTED LEARNING OUTCOMES:

Skills

1. Understand how technology generates innovation and opportunity.
2. Develop the skills to apply rigorous critique to a business proposal.
3. Identify steps in the entrepreneurial process and understand their meaning.
4. Design, set up, and validate a new venture.
5. Be able to build an effective business pitch to gain support.

All work product for this class is considered to be an academic exercise. All content is regarded as public domain unless agreements are reached with the instructor or university administration.

Education

1. Develop an understanding in the concepts related to entrepreneurial marketing, strategy and product development.
2. Develop the insight to analyze and solve problems related to the entrepreneurial process.
3. Understand how to compete and adjust.

CLASS DELIVERY: ASU SYNC DELIVERY

This course has in class instruction only. However, there's the possibility that the situation can change for some students (travel restrictions, COVID, etc). If the situation warrants, we may have to pivot to a SYNC class. Details will be given at that time.

REQUIRED READING

Textbooks: (Available at ASU bookstore and on-line providers)

- **Disciplined Entrepreneurship: 24 Steps to a Successful Startup** by Bill Aulet.
- **The Startup Owner's Manual: The Step-By-Step Guide for Building a Great Company** by Steve Blank, Bob Dorf [[Amazon](#)]. Kindle version also available.

Slides: A lot of material in this course is original and cannot be found in textbooks. YOU ARE EXPECTED TO READ THE SLIDES BEFORE CLASS; we will go over it quickly.

Magazines:

- **Inc.** www.inc.com You will be required to read one article in Inc weekly. You can get the articles on-line, but if you are serious about becoming an entrepreneur, a subscription is recommended.

Articles:

- **Business Model Generation** by Alexander Osterwalder and Yves Pigneur [[Amazon](#)] - you are only required to read the first chapter (that is available as a free [PDF](#))
- **Isaac Asimov Asks, "How Do People Get New Ideas?"**, MIT Technology Review, [[Link](#)]
- **Pitch Deck, Airbnb.** How a \$10B got started [[Link](#)].
- **Pitch deck tips. Simple overview.** [[Link](#)].
- **Kawasaki on pitching.** [[Link](#)].
- **Financial Basics.** [[Link](#)].
- **Valuation** [[Link](#)].
- **Miscellaneous papers and links on Blackboard. Listed by week.**

Case Studies: Harvard Business Publications:

Evertrue Mobile, Uber - China

You can find this case at: <https://hbsp.harvard.edu/import/614849>

There is a fee attached to the case (\$4.25 ea).

RECOMMENDED READING (NOT MANDATORY TO PURCHASE)

Books: In general, you can find any of these books on Amazon.

The Lean StartUp by Eric Ries. This book is the cornerstone of modern entrepreneurship.

Technology Ventures: From Ideas to Enterprise, 4th Edition by T.H. Byers, R.C. Dorf, and A.J. Helson. This book covers every topic in this class. So why didn't I make you buy it? Because it's better suited for an engineering class – not an innovation one. However, I would highly recommend you get one as reference. It is expensive, but you have cheaper options such as used, renting, or the international edition, you can cut the cost.

The Innovator's Dilemma by Clayton Christiansen. A different way of looking at innovation.

Crossing the Chasm by Geoffrey A. Moore.

Periodicals:

MIT Sloan Management Review: Similar to HBR, but more focused on production and technology ventures. Challenges conventional thought with data.

Harvard Business Review (HBR): A good way of keeping your business instincts honed by reading about cases and business development.

IEEE Spectrum: Discusses leading edge technology and provides one of the most accurate and best balanced view of technology development.

GRADE POLICIES

The grade breakdown is as follows:

TEM400			Grade		
Assignments	30	18%	A	93.0	100.0
Cases	50	30%	A-	90.0	<93.0
Journal	10	10%	B+	88.0	<90.0
Final-team	120	12%	B	82.0	<88.0
Final Individual	180	18%	B-	80.0	<82.0
Class participation	100	10%	C+	78.0	<80.0
Entrepreneurial Event	20	2%	C	70.0	<78.0
	1000	100%	D	60.0	<70.0
TEM598			E		<60.0
Research	100				
Total	1100				

This is a class is a mix of activities. The deliverables will be based on team and individual effort (TEAM EXERCISES COUNT ABOUT 30% OF THE GRADE AND 70% OF THE GRADE IS INDIVIDUAL EFFORT).

- **ASSIGNMENTS:** They are exercises geared towards answering a specific topic.
- **CASES:** These are situations where you need to formulate a solution and are geared towards problem solving and analysis.
- **JOURNAL:** A key part of being an entrepreneur is to be aware of events around you and learning from others. You will be required to read an article in Inc magazine each week and comment in a journal about an article that you have read (a total of 10 spread out across the semester). *Your submissions must be spread out over a minimum of 10 weeks; less than that will result in loss of grade: $((\# \text{ weeks} < 10) / 10)$. So if you try and do it all in 5 weeks, it's worth 50%.*

- **FINAL PROJECT - GROUP:** You and your team will pitch a product or service for funding. You will also turn in a peer review form evaluating your teammates.
- **FINAL PROJECT - INDIVIDUAL:** This takes the place of a final exam. You will also evaluate a peer company from the viewpoint of being an investor and make a recommendation on whether to make a deal.
- **CLASS PARTICIPATION:** Your class participation will be graded against: i. your demonstration of understanding the topic, ii. the frequency of participation, iii. the quality of your comments, and iv. your attendance. Quality is based on the thoughtfulness of your comments, your ability to advance the discussion, and the respect you demonstrate for other's views. The participation grade is based on the following equation:

$$\text{Participation Grade} = 100 * (\text{participation}) * (\text{attendance})$$

This class is also geared towards the habits of being professionals. You are allowed to miss 2 classes without penalty and absences of any kind will count towards the 2. Your attendance grade is (maximum 100%):

$$\# \text{ classes attended} / 26$$

Attendance will be taken by participation. At the beginning of every class will be a simple, 1 question quiz, multiple choice based on previous class. The question will only be given *in class*. Through discussion we will derive the correct answer in class, so incorrect answers will connote lack of attendance.

Special cases will be considered for attendance, but you must first consult with the instructor.

- **Event:** Entrepreneurial activity is that you will be required to attend an entrepreneurship function: club meeting, lunchtime talk, etc. Entrepreneurship is about participation; this is your chance to exercise it.
- **Research Paper (TEM598 Only):** Grad students will be required to do a research paper on an entrepreneurial topic.

Missing or Late Assignments

Missing or late assignments receive a grade of zero. Making up these assignments is left up to the discretion of the instructor, including points being reduced or not accepting the submission for a zero grade. Contact the instructor in advance if you believe you will have issues.

Absences

Detailed policy is given in the policy section. *In the event of any kind of absence, the student is solely responsible for determining any information that was delivered in class, the outcome of that information (e.g., date changes or scope) and any material that was assigned.*

TOPICS and SCHEDULE

Bold assignments indicate team deliverables while italic refers to articles found on the web.

KEYS TO SUCCESS

- This is a class that focuses on critical thinking. Deliverables require depth in understanding. This is not a course where information is spoon fed to you; this is about applying what you learned. If you get lost, ask questions.
- Your answers are about making an argument. Your answers have to tell why.
- If you get into trouble, come talk to the instructor. Early, we can do some things. Late and there's no leeway.
- Don't leave assignments to the last minute. These are exercises that require thoughtfulness; if you leave it to the last day, you'll find out there's too much to do and too late to get help.
- If there's something troubling you about the class, talk to the instructor. There's a history of changes made in all Dr. Cho's courses based on student suggestions.

M, W	4:30	Bold= Team	<i>Italic = weblinked article</i>			
Week	Lec	Date	Topic	Description	Assigned Reading	Assignment
Getting Started						
1	1.1	1/10/2022	Overview. Who are the entrepreneurs	Class intro, why be an entrepreneur	Blank - Intro, 1, 2	
	1.2	1/12/2022	Paths of Glory; Teams assigned	Aha to exit, 24 steps, Epiphany, Lean Start-Up, The Road	Aha to Exit Map, paper. Aulet: 1-2, 10. <i>Asimov</i> .	Assignment 1: Getting Started
Technology and Ideation						
2		1/17/2022	Off			
	2.1	1/19/2022	Technology Trends, Evolution and Industries	Main tech defines our age, how it grows; Invention and Innovation		Case 1: California Dreaming
3	2.2	1/24/2022	Technology Implications	How to find ideas related to tech; 4 models		
	2.3	1/26/2022	Technology Ideation	Innovate their ideas	Aulet: p. 1-21. Blank 3, 4	Case 2: EverTrue Mobile
4	2.4	1/31/2022	Context, Value Proposition	Value proposition, S curve, orientation		
	2.5	2/2/2022	Team, Resource, Mission, Vision	Team, vision, culture, mission		Assign 2: Proposal
Research: The Opportunity						
The Market						
5	3.1	2/7/2022	Market Analysis: Segment & Discover	Landscape (5C's), segmentation, research	Aulet 6-8, Blank 3	
	3.2	2/9/2022	Competitors and Strategy	Competition, strategy, the chasm	Aulet 1-5, Blank 6	
The Product						
6	3.3	2/14/2022	IP	4 types of IP	Aulet 11	
	3.4	2/16/2022	Patent searching	Patent search strategy		Case 3: Stakeholders
Week	Lec	Date	Topic	Description	Assigned Reading	Assignment
7	3.5	2/21/2022	Tech Prototyping	Elec, mech, software, chem DIY		
	The Business Model					
	3.6	2/23/2022	Cost, Price, Profit	Business model	Aulet 15-17, 19	Case 4: Uber China
8	3.7	3/1/2021	Financials, BMC	BMC, income statement, balance sheet	<i>Osterlander, Financial Basics</i>	
	4.1	3/3/2021	Valuation	Techniques valuation	<i>Aulet 2 for Assign 3</i>	Assign 3: Market Segmentation
3/8/2022 Spring Break						

9	4.2	3/15/2022	Pitch Deck	How to pitch; story-pictures-numbers	Aulet: 14, 15, <i>Airbnb, tips.</i>	
	4.3	3/17/2022	Surveys, Testing	Validation, conjoint, DOE, A/B	Aulet 20-24; Blank 8-12 (skim)	Assign 4: Pro Forma
Taking Off						
10	4.4	3/22/2022	Digital Strategy	Foundation: social, web, mobile		
	4.6	3/24/2022	Fundraising	Pre-seed to Series X		Assign 5: Pitch Deck
11		3/29/2022	Presentations			
		3/31/2022	Presentations			
12	4.5	4/5/2022	Legal Issues	Incorporation, employee, NDA		
		4/7/2022				Case 5: Value Me
13	5.1	4/12/2022	Go to Market	Guerilla, validation	Aulet 9, 19	
	5.2	4/14/2022	Customer Acquisition-Traction	Ways to grow	Aulet 12, 13, 18, 19	Case 6: Validation
Selling						
14	5.3	4/19/2022	Tactical	Review journey, bootstrap, the Fog	Blank 8-12 (skim)	
	5.4	4/21/2022	Scale, Risk	Growth and leadership		Assign 6: Go to Market
15		4/26/2022	Finals Presentations			Final Report & Presentation
		4/28/2022	Finals Presentations, Last Word			Final Report & Presentation

POLICIES

Face Covering Policy

The ASU Face Cover Policy (<https://www.asu.edu/about/fall-2021#face-coverings>) requires the wearing of face covers in the majority of classrooms, teaching laboratories, studios and workshop settings. The space for this class has been designated as a space requiring face covers. Please wear a face covering over your nose and mouth at all times during class for the health and safety of yourself and others.

Attendance and Absence Policy

a. Only excused absences carry no penalty and a student is permitted only **one excused absence** above the two passes for the semester. Unexcused absence or absences may result, at the sole discretion of the instructor, into point reduction, grade reduction, or failing grade in one or all parts of the course. Only registered and formally enrolled students, formally enrolled guest students, and instructor invited guests may attend class sessions, online sessions, and have access to the course materials.

b. Students are expected to attend all class sessions, or for an online course, participate in online discussions, examinations, and submit all required work as specified in the class schedule. **IF A STUDENT'S UNEXCUSED ATTENDANCE FALLS BELOW 80%, THE LECTURER RESERVES THE RIGHT TO IMPLEMENT A FAILING GRADE.** Advising will be notified if this situation occurs, BUT IT'S THE STUDENT'S RESPONSIBILITY TO BE AWARE OF THEIR ATTENDANCE RECORD.

c. Excused absences and participation are specified in the Academic Affairs Manual (ACD) in sections

ACD 304-04 <http://asu.edu/aad/manuals/acd/acd304-04.html> and

ACD 304-02 <http://asu.edu/aad/manuals/acd/acd304-02.html>

It is expected that every student familiarizes him- or herself with the above sections of the ACD manual.

Classroom- and online behavior

It is expected that students behave in a professional and respectful manner both in classroom- and online settings. Notebook, laptop, and tablet computer use, as well as smartphone use, are allowed during class sessions for class related activities only. No personal communication (for example phone calls, texting, etc.) with any electronic device is permitted during class sessions.

No recording devices are permitted and can result in the expulsion of the student for that class.

It is expected that students follow all University policies relating to student conduct. It is expected that you read and familiarize yourself with:

<http://www.asu.edu/aad/manuals/acd/studentacint.html>

<http://www.asu.edu/aad/manuals/ssm/ssm104-02.html>.

Students are required to adhere to the behavior standards listed in Arizona Board of Regents Policy

Manual Chapter V – Campus and Student Affairs:

Code of Conduct (<http://students.asu.edu/files/StudentCodeofConduct.pdf>)

ACD 125: Computer, Internet, and Electronic Communications

(<http://www.asu.edu/aad/manuals/acd/acd125.html>)

ASU Student Academic Integrity and Copyright Policy

(<http://www.asu.edu/studentaffairs/studentlife/srr/index.htm>).

Academic integrity

Students are expected to execute all course assignments and course related activities in accordance with the Arizona State University Academic Integrity Standard.

Students in this class must adhere to ASU's academic integrity policy, which can be found at <https://provost.asu.edu/academic-integrity/policy>). Students are responsible for reviewing this policy and understanding each of the areas in which academic dishonesty can occur. In addition, all engineering students are expected to adhere to both the ASU Academic Integrity [Honor Code](#) and the Fulton Schools of Engineering [Honor Code](#). All academic integrity violations will be reported to the Fulton Schools of Engineering Academic Integrity Office (AIO). The AIO maintains record of all violations and has access to academic integrity violations committed in all other ASU college/schools.

Copyright

Course content, including lectures, and Zoom content are copyrighted materials and students may not share outside the class, upload to online websites not approved by the instructor, sell, or distribute course content or notes taken during the conduct of the course (see [ACD 304-06](#), "Commercial Note Taking Services" and ABOR Policy [5-308 F.14](#) for more information).

You must refrain from uploading to any course shell, discussion board, or website used by the course instructor or other course forum, material that is not the student's original work, unless the students first comply with all applicable copyright laws; faculty members reserve the right to delete materials on the grounds of suspected copyright infringement.

Students are entitled to receive instruction free from interference by other members of the class. If a student is disruptive, an instructor may ask the student to stop the disruptive behavior and warn the student that such disruptive behavior can result in withdrawal from the course. An instructor may withdraw a student from a course when the student's behavior disrupts the educational process under USI 201-10 <http://www.asu.edu/aad/manuals/ssm/ssm201-10.html>.

Appropriate classroom behavior is defined by the instructor. This includes the number and length of individual discussions, whether on-line or in person. Course discussion should remain focused on the

assigned discussion topics. Students must maintain a cordial atmosphere and use tact in expressing differences of opinion. Inappropriate discussion board messages may be deleted if an instructor feels it is necessary. Students will be notified privately that their posting was inappropriate.

Student access to the course Email feature may be limited or removed if an instructor feels that students are sending inappropriate electronic messages to other students in the course.

Accessibility Statement

In compliance with the Rehabilitation Act of 1973, Section 504, and the Americans with Disabilities Act of 1990, professional disability specialists and support staff at the Disability Resource Centers (DRC) facilitate a comprehensive range of academic support services and accommodations for qualified students with disabilities. DRC staff coordinate transition from high schools and community colleges, in-service training for faculty and staff, resolution of accessibility issues, community outreach, and collaboration between all ASU campuses regarding disability policies, procedures, and accommodations. Students who wish to request an accommodation for a disability should contact the Disability Resource Center (DRC) for their campus.

Policy against threatening behavior, per the Student Services Manual, SSM 104–02

Students, faculty, staff, and other individuals do not have an unqualified right of access to university grounds, property, or services. Interfering with the peaceful conduct of university-related business or activities or remaining on campus grounds after a request to leave may be considered a crime. All incidents and allegations of violent or threatening conduct by an ASU student (whether on- or off-campus) must be reported to the ASU Police Department (ASU PD) and the Office of the Dean of Students.

Warning of Offensive Class Materials

An effort will be made to warn students of material that may be construed as objectionable. If students find content in the class offensive, the first course of action is to discuss it with the instructor. A concerted effort will be made to accommodate student sensibilities and students are assured that bringing up such issues will not result in reprisal. In the event the student does not feel comfortable consulting the instructor, they may consult private and confidentially student counseling.
<https://eoss.asu.edu/counseling>

Disability Accommodations.

Suitable accommodations will be made for students having disabilities. Students needing accommodations must register with the ASU disabilities resource Center and provide documentation of that registration to the Center.

Tempe Campus http://www.asu.edu/studentaffairs/ed/drc/	Polytechnic Campus http://www.asu.edu/studentaffairs/ed/drc/
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480-965-1234 (Voice) 480-965-9000 (TTY)	480.727.1165 (Voice) 480.727.1009 (TTY)
West Campus http://www.west.asu.edu/drc/ University Center Building (UCB), Room 130 602-543-8145 (Voice)	Downtown Phoenix Campus http://campus.asu.edu/downtown/DRC University Center Building, Suite 160 602-496-4321 (Voice) 602-496-0378 (TTY)

Hybrid/Internet Course Delivery

The course is delivered in a hybrid format utilizing face-to-face classroom instruction and on-line delivery of course materials via BlackBoard. Students at ASU may use the MyASU link to access course- and lecture materials at <http://my.asu.edu/>

<https://www.youtube.com/watch?v=KvYwKM5bY0s>

Title IX is a federal law that provides that no person be excluded on the basis of sex from participation in, be denied benefits of, or be subjected to discrimination under any education program or activity. Both Title IX and university policy make clear that sexual violence and harassment based on sex is prohibited. An individual who believes they have been subjected to sexual violence or harassed on the basis of sex can seek support, including counseling and academic support, from the university. If you or someone you know has been harassed on the basis of sex or sexually assaulted, you can find information and resources at <https://sexualviolenceprevention.asu.edu/faqs>.

As a mandated reporter, I am obligated to report any information I become aware of regarding alleged acts of sexual discrimination, including sexual violence and dating violence. ASU Counseling Services, <https://eoss.asu.edu/counseling> is available if you wish to discuss any concerns confidentially and privately. ASU online students may access 360 Life Services, <https://goto.asuonline.asu.edu/success/online-resources.html>.

How Long Students Should Wait for an Absent Instructor

In the event the instructor fails to indicate a time obligation, the time obligation will be 15 minutes for class sessions lasting 90 minutes or less, and 30 minutes for class sessions lasting more than 90 minutes. Students may be directed to wait longer by someone from the academic unit if they know the instructor will arrive shortly.

Syllabus Disclaimer

The instructor views the course syllabus as an educational contract between the instructor and students. Every effort will be made to avoid changing the course schedule but the possibility exists that unforeseen events will make syllabus changes necessary. The instructor reserves the right to make changes to the syllabus as deemed necessary. Students will be notified in a timely manner of any syllabus changes through the course site announcements. Please remember to check your ASU email and the course site announcements often.

