EAS028: Management & Technology Summer Institute  
Technology, Innovation and Venture Development  
Syllabus • Summer 2016

I. CONTACT INFORMATION
Professor Jeffrey Babin  
Associate Professor of Practice & Associate Director  
Engineering Entrepreneurship  
308 Towne Building, 220 South 33rd Street  
Philadelphia, PA 19104-6391

Mr. Siddharth Deliwala  
Detkin Laboratory  
101 Moore  
Philadelphia, PA 19104

II. COURSE DESCRIPTION
This course is designed to provide an introduction to technological concepts, business/management principles and 
technological innovation strategies. Students will:

- Learn about the integration of management principles and technological concepts.
- Gain exposure to core engineering, including bioengineering, computer science, chemical and biomolecular, 
electrical, systems, material science and mechanical engineering.
- Gain exposure to core business disciplines, including accounting, finance, management, marketing, statistics, and 
operations and information management.
- Learn and apply principles of product development and marketing
- Develop a “go to market” plan for a high technology product idea and present the concept to a group of 
“customers” and “distributors” at a “product fair”
- Work in teams on group projects and case studies
- Discover Penn, and the city of Philadelphia.
- Find out about academic and career choices in the fields of engineering and business

The course includes co-curricular activities—including company and lab site visits—that will be incorporated into the 
academic work conducted in the classroom. Although the program is designed for high-performing high school students, it 
is taught and governed as a college course, and as such, our expectations for students are high.

III. COURSE PREREQUISITES
The course is designed for high school students of rising senior or junior standing who have demonstrated outstanding 
academic achievement and leadership qualities in their careers to date.

IV. COURSE MATERIALS
Required reading materials, including cases, notes, and articles (or links to documents), can be found on the course 
Canvas site.

V. COURSE LOGISTICS AND ASSIGNMENTS

Canvas
Canvas is the standard learning management system (LMS) used by the University of Pennsylvania. The course Canvas 
site may be accessed from https://canvas.upenn.edu/courses/1280095, using your PennKey to login. Please refer to this 
site frequently for required and supplementary readings, class assignments, announcements, and other important 
information regarding the class.

Grading
This course will be taught in seminar fashion with substantial class discussion. Thorough preparation and active class 
participation and attendance are essential. Assigned and supplementary readings will be augmented by cases and 
occasional guest lectures. Assigned materials for each session may be found on the course web site.
Grades will be determined as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class Attendance and Participation</td>
<td>20%</td>
</tr>
<tr>
<td>Lab Write-ups and data analyses</td>
<td>20%</td>
</tr>
<tr>
<td>Case Studies, Quizzes, and other</td>
<td>25%</td>
</tr>
<tr>
<td>Individual Assignments</td>
<td></td>
</tr>
<tr>
<td>Team Go to Market Plan</td>
<td>10%</td>
</tr>
<tr>
<td>Team Presentation</td>
<td>10%</td>
</tr>
<tr>
<td>Team Prototype Mini-Fair Poster &amp; Prototype</td>
<td>15%</td>
</tr>
<tr>
<td><strong>Total Grade</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Written assignments are to be submitted online (via Canvas) prior to the start of the class on the date they are due. Late papers (anything after the start of class) are not accepted (except in the case of documented incapacity or emergency). In-class quizzes may be handwritten or taken using Respondus Lockdown Browser via Canvas. Instructions for taking online quizzes will be provided. There will be no regrading of papers.

**Class Attendance and Participation**

EAS028 is a class discussion course. Your class participation is essential for your own benefit, as well as that of other students. If you are concerned about participating, you should discuss this with the professor. Unexcused absences will negatively impact your total grade. During this summer session, we meet for only 3 weeks. Therefore, missing even one class is significant.

Class attendance (including arriving on-time to class) is a critical component to the course. You should review known absences at the beginning of the session with your professor; however, excused absences are limited to religious holidays and medical or family emergencies. Professional events, sporting events, extended vacations, or other personal preferences will not count as excused absences. It is fully expected that students also arrive on time to class out of respect for your professor, and classmates. Lateness to class will also negatively impact your total grade.

Participation grades will be earned for each class according to the following 4-point scale:

- **4.3:** Substantive classroom participation, which enhances the intellectual level of discussion.
- **4.0:** Timely arrival and thoughtful classroom participation, not simply “air time.”
- **3.0:** Timely arrival and attentiveness throughout class without participation.
- **2.0:** Late to arrive to class or inattentiveness.
- **0.0:** Unexcused absence.

Guest lectures, company visits, and other interactions with members of the professional and academic communities are an important part of the learning experience. Please respect the contributions of our guests & hosts by researching their backgrounds, products and companies prior to class. Each guest/host will share their experiences and provide time for questions and answers. Please prepare questions in advance according to the guidelines provided. Please arrive promptly for any visits to guest locations.

You may use tablets and laptops for note taking purposes only. As a common courtesy to other students and the professor, any other use of cell phones, tablets, laptops and other distracting devices or activities are not permitted in the classroom. When we have a guest lecturer or are visiting a company, you may NOT use any devices.

**Lab Write Ups**

The main purpose for Lab reports is to communicate the results to others and to enable others to duplicate the work in a straightforward manner. Guidelines will be provided for preparing for labs and developing lab reports.

Additional information on labs and visits can be found on the course Canvas site.

**Case Studies, Quizzes, and Other Individual Assignments**

In-class quizzes are given weekly or as announced in class. Quizzes are designed to reinforce and stimulate discussion on the assigned reading materials. Quizzes will be closed notes, and we will make Respondus LockDown Browser available for students that are interested in taking quizzes on a laptop.
In addition, selected classes will have brief essays, submitted online before class, covering the assigned material. Essays must be no more than 2 pages (unless otherwise assigned) and will address a specific question or set of questions provided and available on the class web site. Focus on making your essays insightful and concise. Refer to the Case Method Overview for more information.

**Team Project**
Team work is an essential part of technological innovation. Teams develop and refine product ideas as well as share in the efforts required to analyze and investigate markets. EAS028 students will work collaboratively as part of a team of 4-5 students on several assignments. Teams will be formed in the first class and will be active throughout the course. The culmination of this team work will be a multi-part final project.

**Go to Market Plan**
The final written assignment of the course is a 3-page executive summary of the final team project. This summary should incorporate the principles learned throughout the course and communicate the product, positioning, and go-to-market plan for the team’s product concept.

**Presentation**
Teams will formally present their product concepts to an audience of faculty, family, and guests. Teams will provide an overview of their product concept and select detail of their positioning and go-to-market plan.

**Product Fair: Prototype and Poster**
The culmination of the course will include a Product Fair, where students and other reviewers will evaluate each group’s project and provide feedback.

Teams will present their product prototypes, demonstrating elements of the design and technology of their concept. The final component of the project and product fair is a poster that outlines the key technological accomplishments of the prototype of the product concept together with an advertisement that reflects the positioning and benefits of the product. Teams will demonstrate their prototypes and present their product concepts during the Product Fair.

For more information on the final team project assignments, see the Team Project Assignment document.

**VI. UNIVERSITY CODE OF ACADEMIC INTEGRITY**
All written assignments must be the product of your own effort, consistent with the University’s Code of Academic Integrity (available at [http://www.upenn.edu/academicintegrity/ai_codeofacademicintegrity.html](http://www.upenn.edu/academicintegrity/ai_codeofacademicintegrity.html) and [http://www.upenn.edu/academicintegrity/index.html](http://www.upenn.edu/academicintegrity/index.html)). You may not refer to other student's (s') work in preparing individual assignments. Violation of University Code of Academic Integrity may result in failure of course.
Cases, articles, and additional readings:

- Case Method Overview (course web site)
- Market Segmentation, Target Market Selection, and Positioning (HBS 9-506-019)
- Hypothesis-Driven Entrepreneurship: The Lean Startup (HBS 9-812-095)
- CASE: MakerBot: Challenges in Building a New Industry (BAB706)
- Design Thinking (HBS R0806E)
- CASE: IDEO Product Development (HBS 9-600-143)
- CASE: Dropbox (HBS 9-811-065)
- CASE: LinkedIn A (HBS 9-707-406)
- CASE: ExAblate Neuro (UV7085)
- Blue Ocean Strategy, Kim & Mauborne (HBR R0410D)
- CASE: Google, Inc. (HBS 9-910-036)
- CASE: TiVo (HB 9-501-038)
- CASE: Research in Motion (Ivey 999A36)
- CASE: Rogers Communications, Inc: The Wave (HBS 9-597-050)

Additional readings may be assigned and will be available on the course web site.

Optional Reading: Business Model Generation, Alexander Osterwalder & Yves Pigneur, John Wiley & Sons, 2010. This book outlines the widely-adopted Business Model Canvas and a body of work that helps explore business models. It cites several works, some of which are incorporated into M&TSI. While we do not require the text, you may find it a useful addition to your collection.