Mobility Ventures: Driving Innovation in Transportation Systems

Logistics

- MW (11:30-1:00) E25-117
- Credit: 3-3-6 P/D/F, Graduate and Undergraduate (Years 3 and 4)
- Instructors
  - Jinhua Zhao (link) jinhua@mit.edu
  - John Moavenzadeh (link) moavenza@mit.edu
  - Bill Aulet (link) aulet@mit.edu
  - Annie Hudson awhudson@mit.edu
- TA: Mario Carandente (mariocar@mit.edu)
- Prerequisite: Students submit a one-page CV to Mario Carandente
- This is a project-based class and does not allow listeners
- Websites: MIT catalog; DUSP catalog; Canvas: https://canvas.mit.edu/courses/10087

Introduction

This course is designed for students who aspire to shape the future of mobility. The course explores technological, behavioral, policy and systems-wide frameworks for innovation in transportation systems, complemented with case studies across the mobility spectrum, from autonomous vehicles to urban air mobility to last-mile sidewalk robots. Students will interact with a series of guest lecturers from CEOs and other business and government executives who are actively reshaping the future of mobility. Interdisciplinary teams of students will work to deliver business plans for startups or action plans for solving “real world” challenges in established companies, governments or NGOs.

Schedule

Sept 8 Introduction to MV
Sept 13 Mobility System overview
Sep 15 Disciplined Entrepreneurship Part 1: The Importance of Teams
Sept 20 Mobility and People
Sept 22 Mobility Business Strategy Dialogue
Sept 27 Disciplined Entrepreneurship Part 2
Sept 29 Decarbonizing Transportation
Oct 4 Pitch to Match

Oct 6 Mobility Innovation: A Historical Perspective and Case Study

Oct 13 Mobility and Platforms and Data Part 1

Oct 18 Mobility and Platforms and Data Part 2

Oct 20 Mobility and Cities Part 1

Oct 25 Mobility and Cities Part 2

Oct 27 Team Pitch Workshop

Nov 1 Mobility Tech 1 Lecture

Nov 3 Mobility Tech 1 Entrepreneurship Dialogue

Nov 8 Mobility Tech 2 Lecture (Aerial, Micro, Logistics)

Nov 10 Mobility Tech 2 Entrepreneurship Dialogue

Nov 15 Mobility Finance Lecture, Micro/firm view

Nov 17: Mobility Finance Lecture, Macro/industry view

Nov 22 Mobility Finance Entrepreneurship Dialogue

Nov 24 Teams Workshop

Nov 29 Mobility Policy Lecture

Dec 1 Mobility Policy Dialogue

Dec 6 Innovation Ecosystems

Dec 8 Final Workshop

**Student Expectation and Grading**

1. Class Participation: 50%
   a. Team participation: 20%
   b. Guest speaker reflections: 10%
   c. Module 1: 10%
   d. Class participation: 10%

2. Team Deliverables: 30%

* denotes MIT alums.
a. Module 2: 15%

b. Module 3: 15%

3. Team Project (Final deliverables): 20%

Tentative Speaker List

KT Neumann, Former CEO of Continental and Opel

Chetan Maini, co-founder and CEO, Sun Mobility

* denotes MIT alums.
John Rossant, Chairman New Cities Foundation (use Hop Skip Jump book as required reading)

John Casesa, MD, Guggenheim Partners (accepted timing TBD)

Georges Anoude, CEO, Derq

UAM: Ben Diachun, CTO Hyundai Urban Air Mobility

Andrea Kollmorgen, Head of Connected eMobility, Siemens

Jack Kennedy, CEO Platform Science

Jody Kelman, GM Lyft Autonomous (invited)

Cathy Zoi, CEO EVGo

Laura Schewel, CEO Streetlight Data

Maxim Nohroudi, Co-CEO door2door

Wee Shann Lam, CTO Singapore LTA

Gretchen Effgen, Motional

Andrew Salzburg, Head of Policy at TransitApp

Stephen Zoepf, Chief of Policy Development at Ellis & Associate

**Student Milestones and Deliverables**

- Deliverables are due before class at 1130AM EST on due date listed
- See Canvas for additional information on each specific deliverable
- Completed deliverables should be posted online to Canvas

*Module 1: Idea Development*
Assignment: Goals
Due on September 13th

Assignment: Start-up Pitch
Due on October 4th

Assignment: Idea & Team
Due on October 6th

* denotes MIT alums.
Module 2: Pitch Development
Assignment: Market Segmentation
Due on October 13th

Assignment: Primary Market Research
Due on October 18th

Assignment: Beachhead Market and Persona
Due on October 20th

Assignment: High-Level Specs & Quantified Value Prop
Due on October 25th

Assignment: Team Pitch
Due on October 27th

Module 3: Pitch Refinement
Assignment: Team Feedback
Due on November 1st

Assignment: Total Addressable Market
Due on November 8th

Assignment: Core and Competitive Position
Due on November 15th

Assignment: Revisit Prior Assignment
Due on November 17th

Assignment: Team Pitch
Due on November 24th

Assignment: Team Feedback
Due on November 29th

Final Pitch
Assignment: Final Pitch
Due on December 8th

For each guest speaker, students are to submit:
A one-page document that

* denotes MIT alums.
(1) offers an (approximately) 2-paragraph reflection on the insights gleaned from the guest speaker(s). You have freedom on what your reflection focuses on. It is intended to be useful to you to capture some of the insights that might prove valuable to you on your entrepreneurial journey. Please note that we will be sharing some of these with the guest speakers.

(2) 3-5 ideas inspired by the talk
   Some guidance:
   ● Crazy ideas are good
   ● Think about how you can “hack” the current systems
   ● The more the better
   ● They don’t have to and should not be complete – just the start
   ● If all are good, seem reasonable or work, you are not thinking creatively enough
   ● Some can even just be problems where you think there must be a better solution.

Individual Deliverables and Peer Review

Students are to submit the individual and team deliverables noted on the course overview.

Additionally, there will be a peer evaluation at the end of the team project. These will be graded both on each student’s ability to provide constructive feedback to team members, as well as the evaluation received by peers. If your teammates make it clear that you did not actively contribute to the team, this will adversely impact your participation Grade.

In-Class Presentations and Team Deliverables

Much of the learning in the course comes from the shared experience of all groups. All teams will regularly prepare slide decks, according to the rubrics posted on Canvas. The deliverables will typically be graded (√-, √, √+) and in-class feedback will be provided.

Presenting teams should not try to answer the feedback questions from peers real-time, to allow for as much feedback to be provided.

Teams should incorporate feedback into their final pitch decks.

Recommended Readings


* denotes MIT alums.


Citations and Plagiarism Admonition

You must identify the nature and extent of your intellectual indebtedness to the authors whom you have read or to anyone else from whom you have gotten ideas (e.g., classmates, invited lecturers, etc.). For the purposes of this class, you can do so through footnotes, parenthetical citations plus a bibliography, or some other device. For citations to lectures, please just put “(Instructor Last Name, in lecture, DATE)” in your papers; there is no need to refer to the time during the lecture when a point was mentioned.

MIT students accustomed to working collaboratively may be less familiar with policies about plagiarism and – more generally – with formats for citations to work covered in the class. But getting it right is your responsibility. If you have any questions about how you should document the sources of your ideas, please ask the TAs or one of the instructors before you submit your work. You can also consult MIT’s Academic Integrity Handbook for Students for guidance. The most important guiding principal is that you should not explicitly or implicitly pass off other people’s work or novel ideas as your own. Failure to disclose your reliance on the research or thinking of others is PLAGIARISM, which is considered to be the most serious academic offense and will be treated as such. So, when in doubt, ask.

Student Support Services

If you are dealing with a personal or medical issue that impacts your ability to attend class, complete work, or participate in your team presentation, please discuss this with your advisor or Student Support Services (S3). Your advisor or the S3 deans will verify your situation, and then discuss with you how to address the missed work. In general, students will not be excused from coursework without verification from their advisor or Student Support Services.

MIT Code of Conduct

As always, our ability to have a successful term depends on everyone’s willingness to abide by MIT’s norms and code of conduct. We will all need to respect one another in this regard if we are to enjoy a functional learning environment during this challenging period.

* denotes MIT alums.