Global Startup Labs 2016

Mongolia

Global Startup Labs is designed to teach students the skills necessary for starting a mobile tech startup. This is not a typical class - it's an intensive bootcamp where students will work in teams to develop and ultimately launch a mobile-app startup business. The course ends with a pitch day - when your team will pitch your startup and prototype to potential investors. The expectation is that you and your team will continue developing your startup idea after this course ends.

Schedule
This is an 8-week program, running from June 13 - August 12. Class will be held Mondays - Fridays from 9am to 5pm. We will not hold class the week of July 11 - 15.

Class Curriculum

Content
The class will include three major topics, which are the key ingredients to launching a successful tech venture:
1. Entrepreneurship & Business Skills
2. Communication Skills
3. Technical Skills

Classes will involve lectures followed by in-class hands-on activities and work sessions.

Startup Teams
Students will be grouped into teams of 4 students, and these teams will work throughout the course to form and launch their tech startup. We will often dedicate time during the class to group work sessions and group meetings with the instructors. During the course, you will work as a team to develop a startup business idea for a mobile application. You will build a prototype of the mobile app. You will pitch this idea during the culminating event of the course - pitch day. Winning teams may receive prizes and/or funding to move forward with their idea.

Additional Activities
In addition, we will be inviting guest lectures to speak during the class to share their experiences with you. We hope to schedule one or two guest lectures per week. We also hope to spend time outside the classroom, perhaps on a tour of a local business place etc. We will let you know as more details develop.

Teaching Style
The MIT style of learning is "learning by doing", and GSL is based on this philosophy. GSL is a hands-on workshop and bootcamp, where we will serve as your mentors (not lecturers!) We will introduce topics with an interactive lecture. No more than 10-15% of the course will consist of instructor lecturing. The remainder of the time is dedicated to hands-on activities,

tutorials, group-work, exercises, etc. You will often learn material on your own of your own initiative, and this is highly encouraged. We may even ask you to present material to the class, as an instructor! We realize you may not be familiar with this teaching style, but we ask you to keep an open mind and participate to the best of your ability.

Materials
Students should come prepared to learn! Bring writing materials, a notebook, and a laptop if you have one. If you have a smartphone or tablet be sure to bring that as well, as we will be learning to develop mobile applications.

Class Participants
You and your classmates have been carefully selected among an applicant pool of several hundreds of candidates. Congratulations! You are a group of students from diverse backgrounds with diverse experiences. Most of you are university students, although some of you are in high school and others are post-university. Some of you come from a "business" background, while others come from a "technical" background. We will be teaching all of you the same content at the same time - when there are technical topics, those students with a business background might have more difficulty getting started. And when there are business topics, those with a technical background might have more difficulty. We think it's important that everyone be aware of these topics and develop skills in all these areas. However, your individual teams will be composed of students from diverse backgrounds - some business students paired with some technical students. You will decide as a team how to divide tasks among team members.

Class Community
Because you are a group of students from diverse backgrounds and experiences, there is much to be learned from each other. This will be the focus of the culture within the course: a community that shares knowledge with each, and takes the initiative to work together. This includes collaboration among teams, as you will be expected to provide constructive criticism of your peers' work to learn from each other's successes and failures. The more we work together the more successful each individual project will be! We expect you to take an active role in supporting and fostering the class community.

Language
The course will be conducted mostly in English. If you do not understand something, please ASK! We have translators available who can explain a concept in Mongolian. You are welcome to speak in Mongolian with your fellow students. We don't want language to be a barrier to you as you launch your startup venture!

Global Startup Labs - Context
GSL is a program founded by MIT that promotes development in emerging regions by cultivating young technology entrepreneurs. We develop curriculum materials, software technologies, platforms, and networks that enable students in emerging regions to innovate in the area of information and communication technologies. The course is offered at no cost to students.

Since 2000, MIT Global Startup Labs has sent over 150 MIT instructors to teach over 2000 students in 14 countries, resulting in the creation of businesses and the addition of course offerings at our partner universities.

GSL Mongolia 2016 - Your Instructors
This is the first time GSL is being offered in Mongolia, and we're excited to be here! We are working in partnership with Mongolian University of Science and Technology and National University of Mongolia to offer this course.

Your instructors

James Addison (jaddison@mit.edu)
I work broadly as a designer (design research, architecture, products, urban design, user experience, etc), and have experience designing and researching in China, India, and Chile. This past summer I researched innovation networks in India in regards to roofing for low-income housing. My interests primarily lie in the intersection between entrepreneurship and human-centered design.
Second year Masters of Architecture, Class of 2018

Beth Hadley (bhadley@mit.edu)
I work at the intersection of technical development and business. My technical experience involves mobile apps, website development, open-source software, robotics, accessible technologies. I have most recently spent 9 months working in France as a digital consultant in the field of innovation.
MIT Computer Science Bachelor's, 2015, Master's 2017

Thanh Le (thanhle@mit.edu)
I worked in project management for Toyota for 3 years, involving in developing future network system for integrated supply chain across Asia. I also co-founded a national leading reunion program aims to help reunite 1000+ people who were separated from their family during Vietnam War. Most recently, I founded a music studio and sold it to go to MIT. Interests: I am most interested in entrepreneurship and the government's policies to help promote innovation-driven enterprise.
First year MBA student, class of 2017

Instructor Contact Information
You may contact the entire instructor team by emailing gsl-mongolia-2016@mit.edu

Course Feedback
This course continues to evolve as it is taught, and we welcome your feedback. We will ask for feedback throughout the course, as we aim to tailor the course to our student's needs. If you have comments and/or ideas about the course, please don't hesitate to let us know.

Participation & Student Expectations

This is an intensive bootcamp. Students must commit to attending every day from morning until evening. If you must miss class, you must speak with the instructors at least two days in advance. Absences are highly discouraged and will be considered on a case-by-case-basis. Being able to attend this program is a privilege, and it is in your best interest to come every day with a positive attitude, readiness to learn, and willingness to engage. There are no grades and no exams. Students are expected to:

- Arrive on-time (or early!)
- Listen attentively
- Ask questions!
- Complete in-class assignments
- Help other students
- Learn on your own
- Study/Work at home and on the weekends

If we feel you are not participating as an active member of the class, we will speak with you. If you do not change your behavior, we will ask you to leave the class. We want each of you to succeed, and we will do our best to ensure the best learning environment possible. Please do your part!

Course Topics

Provided below is a list of the possible topics we will cover during this bootcamp. This is neither an exhaustive list nor do we intend to cover all topics on this list. We hope it provides a sense of the "breadth" of the course. We follow this list with a weekly outline of the course topics, although this will be adapted based on the students.

Business/Entrepreneurship/Design Topics

1. Introduction to Start-up Cycle. SME and IDE types. Introduction to 6 themes and 24 steps.
2. Ideation Techniques
   a. Brainstorming.
      i. At the core, what is a business idea?
      ii. Guidelines for mobile theme ideation
      iii. Problem identification technique
      iv. Solution brainstorming technique
      v. Evaluate your idea: What is your value proposition?
   b. Cubification: a gamified innovation method using a rubik's cube
   c. Innovation through constraints
3. First and foremost, who is your customer?
   a. Market segmentation
   b. Select Beachhead market

       c. Build an End user profile
       d. Calculate the Total Addressable Market
       e. Profile the Persona for Beachhead market
       f. Identify your next 10 customers

4. What can you do for your customer?
   a. Define the full lifecycle use case
   b. High-level product specification
   c. Quantify the Value Proposition
   d. Define your core
   e. Chart your competitive position

5. How can customer acquire your product?
   a. Define customer decision making unit
   b. Map the process to acquire a paying customer
   c. Map the sales process to acquire a customer base

6. How to make money off your product
   a. Design a business model
   b. Set your pricing framework
   c. Calculate the Lifetime Value of of an acquired customer
   d. Calculate the Cost of Customer acquisition

7. How to design and build your product?
   a. Identify key assumptions
   b. Test key assumptions
   c. Define the Minimal Viable Business Product
   d. Show that "The dog will eat the dog food"

8. How to scale your business?
   a. Calculate the Total Addressable Market for follow-on markets
   b. Develop a product plan

9. Useful tools and concepts
   a. Business Model Canvas
   b. Decks and pitching
   c. What are the most common failures?
   d. Lean startup
   e. Design Thinking

10. Examples
    a. Startups
    b. Academic spin-offs
    c. Fortune 500 Companies

Communication Skills

1. Pitching
   a. Tech It ! (serious game)
   b. Pitch decks and stand alone decks
   c. What are common mistakes?
   d. What are investors looking for?
   e. Pitch competitions

2. Communication and collaboration technologies
    a. Google: Becoming a google-products ninja
    b. Dropbox
    c. Other tools to consider for your business (CRM - Customer Relationship Management, Website, Social Enterprise Platform, Ideation Platform, etc.)
3. Effective writing skills
4. How to run an effective meeting
    a. With your team
    b. With customers
    c. With investors
5. Teamwork
    a. Personality Classifiers: color test, four basic temperaments, Myers-Briggs
    b. Figure out your "Dream team"
    c. Pitching and hiring the right people for yours team
6. Leadership
    a. What is the CEO's first priority of a startup?
    b. Startups need leaders not bosses

Technical Topics

1. Python fundamentals
    a. Basic syntax and language constructs (for loops, indexing, etc)
    b. Namespaces and modules: importing, creating, etc
    c. String manipulation + regular expressions
    d. Data structures: lists, dictionaries, sets, maps
    e. Scripts and web-scraping
2. Java
    a. Variables & Types
    b. Object-oriented programming
3. Databases
4. Web development
    a. HTML/CSS/Javascript, (Ajax)
    b. HTTP concepts (POST/GET methods, request, response)
    c. Deploying a backend server
    d. Backends
        i. Heroku or Google App Engine
        ii. Django
        iii. Flask
    e. Bootstrap + responsive design
5. Android
    a. Basics of Android app development
    b. Model View Controller
    c. Connecting apps to the web and to a backend server
    d. Android deployment for their service & Google Play
6. General programming tools

      a. Text editors - Sublime

      b. Command line usage (installing Python packages, navigating directories, etc)

      c. Exposure to source control (Git/svn) and github

      d. Exposure to development environments (IDLE, Android Studio)

      e. Basic debugging skills, for example logging

7. Software Engineering Skills
   a. Choosing the right technology for the job
   b. Habits of good programmers
   c. Learning new technologies
      i. Stackoverflow/Google groups/forums
      ii. Reading the docs
   d. Deciding what kind of application to develop (native vs. web app vs. hybrid)
   e. Agile Software Development Methodology
8. Interface Design
   a. Precedent Analysis of User-Interfaces
   b. User-centered design process
   c. Usability Testing
   d. Data Visualization strategies
   e. Logo Design
   f. User Interface & experience

Schedule

Week 1: June 13 - 17
- Introduction to the course & student expectations
- Team-Building
- One-day Design Charette
- Ideation & Brainstorming
- Communication and Collaboration Tools
- How to Run an Effective Meeting
- **Instructor Milestone: Build Idea-Sharing Culture and Community**
- Why Mobile App Development?
- Technical skills assessment
- Introduction to python
- Intro to general programming tools

Week 2: June 20 - 24
- Student team formation
- Brainstorming
- Pitch Competitions
- Guest lectures
- **Entrepreneurship Milestone: Market Analysis Report**
- Intro to Django
- App ideation & paper prototyping
- **Technical Milestone: App Idea defined**

Week 3: June 27 - July 1

- Pitch Competitions
- Guest lectures
- **Entrepreneurship Milestone: Market Research and Interview Report**
- Intro to Java + Android Development
- **Technical Milestone: Paper Prototype Designed & Tested**

Week 4: July 4 - 8
- Guest lectures
- Pitch Competitions
- **Entrepreneurship Milestone: End User Profile, Total Addressable Market, and BHM Persona**
- Android Development cont'd
- **Technical Milestone: Digital functional prototype**

July 11 - 15: Holidays, no class
(continue working on prototype)

Week 5: July 18 - 22
- Guest lectures
- **Entrepreneurship Milestone: Life Cycle Case, Marketing Brochure, Startup Landing Page**
- Good development skills part I
- **Technical Milestone: MVP**

Week 6: July 25-29
- **Entrepreneurship Milestone: Value Proposition, Next 10 Customers, Define Core**
- Guest lectures
- Good development skills part II
- **Technical Milestone: Tested MVP**

Week 7: August 1 - 5
- App and business development (office hours style class time)
- Guest lectures
- Pitch Day Practice
- **Entrepreneurship Milestone: Financial Plan, Business Plan**

Week 8: August 8 - 12
- Team work time
- **Technical Milestone: V2 online**
- **Entrepreneurship Milestone: Final decks to delivery to Investors**
- Pitch Day: Present your business and demo your product to industry and community leaders