

GNG4100

Selected Topics in Engineering II (specific topic: technology entrepreneurship for engineers and computer scientists)

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Course description

The aim of the course is to provide hands-on introduction to the many dimensions of starting and growing a technology company. Students will develop a clear understanding on how to evaluate market opportunities, design profitable business models, raise capital, develop a product that customers need and build a winning team. Students will gain the skills and tools to turn technical ideas into profitable sustainable businesses. The course provides the student the opportunity to develop his/her own business plan based on the material provided in the course. In addition, a number of entrepreneurs and venture capitalists will be invited to give their first hand experiences. The course is particularly suited for students wanting to become entrepreneurs as well as anyone who expects to manage people in their business careers.

Course outline

- Entrepreneurship & the entrepreneurial mindset (1 lecture)
- Opportunity identification (1 lecture)
 - Describing the value proposition
 - Framework for opportunity assessment
 - Evaluating a business idea
- Product development (1 lecture)
 - Taking the technology from the lab to the market place
 - IP, ethics, etc
 - Product development process
 - Resources issues
- Business models (1 lecture)
 - Case studies (e.g Google, Dell)
- Marketing and Sales (1 lecture)
- Financing (1 lecture)
- Business plan (2 lectures)
 - Value proposition
 - Shaping ideas
 - Going to market strategy
 - Sales and customer engagement
 - Draft business plan presentations
- Getting resources to pursue opportunity (2 lectures)
 - Financing (venture financing, boot strapping etc...)

- Human resources (hiring)
 - Getting the co-founders
 - Hiring the key employees
- Creating and managing a start-up (2 lectures)
 - Corporate culture
 - Team work/dynamics
 - Keeping employees (incentive plans)
 - Leadership and management
- Growing the organization into a sustainable business (1 lecture)

Grading:

Case studies (10%), class participation (10%), midterm (20%), final exam (30%), and a final project (30%). The final project will be a written report on developing a business plan.