

***Required**

Syllabus:

Division*:	Innovation and Economic Development
Course Number:	IED210
Course Title (Limited to 40 characters)*:	New Venture and Product Innovation
Expected Starting Academic Semester*:	Spring 2020
Expected Starting Academic Year*:	2019
Course proposer(s)*:	
Name(s) *:	Bulent Erbilgin, instructor; Lama Hakem, co-instructor; Hattan Ahmed, lecturer
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Instructor(s) information*:	
Name(s) *:	Bulent Erbilgin, instructor; Lama Hakem, co-instructor Hattan Ahmed, lecturer
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Prerequisite Course Number*:	
	None

<p>Comprehensive Course Description*:</p>	<p>This module is a three-credit elective course during the spring internship period for students with strong academic standing. It is designed to give students the opportunity to develop and refine a business model and value proposition for a new venture or a corporation innovation project based around the commercialization of an existing technology. This would be based on an existing piece of intellectual property pre-selected by I&ED which could be from KAUST or a corporate partner. The program will provide students with an overview of key subjects that will aid the new product development process, such as intra/entrepreneurship, innovation management & new product development, positioning and customer analysis - all leading to a strong commercialization planning and Go-to-Market strategy as a deliverable.</p> <p>The program will also allow students to develop a number of 'soft' skills such as leadership, team development, conflict resolution, stakeholder management, project management in an intensive, experiential learning environment that includes regular pitches and feedback from mentors. Mixed interdisciplinary teams will be created and mandated, as the aim is not to work on the 'science' of the technology but on the value proposition and business model. This would include a strong understanding of the resources, milestones and timelines necessary for launching a new product or service through a new or existing venture in the Kingdom of Saudi Arabia. Knowledge is acquired through the process of doing, including understanding a technology's potential competitive advantage, business sustainability, revenue and cost streams deriving from commercialization, and knowledge of the industry value chain.</p> <p>Adopting a technology from the KAUST intellectual property portfolio will be coordinated with KAUST Technology Transfer Office by the Entrepreneurship Center, while there is also the potential to adopt an 'intrapreneurship' project from industry partners would be coordinated with the KAUST Industry Engagement Office (IEO)</p> <p>The art of successfully communicating the idea is critical (initial elevator pitch, business summary for investment, business plan, full pitch) throughout the program and in particular during the final pitches in the final week.</p>
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<p>Course Description for Program Guide*:</p>	<p>Through a mentor-led experiential program, this course will enable students to learn-by-doing leading to the development a fully formed business proposition for a real piece of intellectual property that has been developed in the Kingdom. The objective is to create a plan for commercialization and launch of a new product, and the process will include students learning:</p> <p>The Creative Process: Ideation, management of innovation, design thinking based on a particular technology.</p> <p>Opportunity Identification and Research– opportunity seeking and identification, feasibility analysis, business model development, and understanding the needs of the customer and the market.</p> <p>Strategy, Planning & Team Building – forming a venture or project team, introduction to creating business plans, legal and financial issues of starting and maintaining a new venture, strategic planning for a new product, issues around the commercialization of intellectual property and new technology transfer models.</p> <p>Structuring and Packaging a Commercial idea – The value propositions, sustainable positioning, competitive advantage, presenting the idea in multiple formats, formulating new product development timelines and analyzing strategic options.</p> <p>Integrating Continuous Feedback and Communicating Concepts to Different Audiences – Obtaining and integrating key feedback from multiple mentors, constantly adjusting the relevant information into a variety of communications options and to ability to identify relevant gaps.</p> <p>Skills enhancement: develop a number of ‘soft’ skills such as leadership, team development, conflict resolution, stakeholder management, and project management.</p>
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Goals and Objectives*:	<p>The creation of a working knowledge in students of the process of taking a technology to market including the following areas:</p> <p>New Business Understanding</p> <ul style="list-style-type: none"> - Within the context of new venture development, critically evaluate the role of the entrepreneur and his/her team in new venture creation either as a startup or as a new product development within a corporate setting - Critically examine the components of a new project or venture plan and aspects of the planning process. - Critically examine the role of creativity and innovation in opportunity identification and the challenges of protecting new ideas. <p>Intellectual Qualities</p> <ul style="list-style-type: none"> - Gain significant experiential learning from developing a real world technology from a new venture perspective. - Experiment with creative thinking techniques in seeking market validation outcomes from a particular new technology, including new product/service development and/or the development of new processes/systems. - Acquire an understanding of the importance of acting, thinking and behaving in an entrepreneurial manner through the development of a new venture on a daily basis. <p>Professional/Practical Skills</p> <p>Integrate entrepreneurship theory and practice through the development of an effective, plan either to progress a new venture or to develop an existing organization, through an organizational change opportunity based around the commercialization of a new technology.</p> <ul style="list-style-type: none"> - Demonstrate the ability to communicate effectively through regular class and mentor pitch sessions. - Understand how new ventures fit into the wider value chain of society - Effective verbal leadership skills - Business presentation skills <p>Transferable/Key Skills</p> <ul style="list-style-type: none"> - Critically examine and appreciate the importance of the resources needed to effectively exploit the potential of an entrepreneurial opportunity, including financial, human and physical resources.
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Required Knowledge*:	Students with an interest in the commercialization and technology transfer aspect of the university, a strong work ethic, ability to work in a new team and the ability to leave their comfort zone.
Reference Texts*:	<p>Essential Reading List</p> <ul style="list-style-type: none"> • The course is heavily based on case study analysis, simulations and workshops. The specific case studies will be shared with the students at no additional cost. • Crucial Conversations Tools for Talking When Stakes Are High, by Kerry Patterson , Joseph Grenny , et al • Getting (More of) What You Want: How the Secrets of Economics & Psychology Can Help You Negotiate Anything in Business & Life, Margaret A. Neale, Thomas Z. Lys • The Five Dysfunctions of a Team: A Leadership Fable, by Patrick Lencioni <p>Additional readings will be emailed or posted to the students at no extra cost.</p> <p>Recommended Reading List</p> <ul style="list-style-type: none"> • Osterwalder, A. and Pigneur, Y. Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers • Thiel, P. Zero to One: Notes on Startups, or How to Build the Future • Christenson, Clayton, The Innovator's Dilemma Ries, E. The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create • Radically Successful Businesses • Drucker, P. F. Innovation and Entrepreneurship: Principles and Practice • 7 Steps to a Successful Startup, by Naeem Zafar • Market Research on a Shoestring, by Naeem Zafar
Method of evaluation (Percentages & Graded content such as Assignments, Oral quizzes, Projects, Midterm exam, Final Exam, Attendance and participation, etc.):	<ul style="list-style-type: none"> • 10% Individual Active participation/engagement and attendance • 20% Initial Pitch presentation and Deck (Mid-Program) • 30% Detailed Go-to-Market Business Summary (Final) • 40% Final Pitch presentation and workable slide deck (Final) <p>Attending the mandatory weekly meetings with the mentors will count towards the Participation part of the grade.</p> <p>This program is based on a team – the experiential learning is partly due to the team- development nature of the workload, so the marking will be by team with the exception of the 10% active participation. Grading will be A-F grades as per KAUST system.</p>

<p>Nature of the assignments (assigned reading, case study, paper presentation, group project, written assignment, etc.):</p>	<p>This program is a largely experiential activity centered on creating and validating a business model, commercialization plan and new product development process for a technology-based new venture. Due to the experiential nature, there is no examination and marking will occur during a number of times across the 16 weeks of the program.</p> <p>Mixed interdisciplinary teams will be created and mandated, as the aim is not to work on the 'science' but on the value proposition and business model of the technology, including understanding the resources, milestones and timeline necessary for developing a new product, service new venture in the Kingdom of Saudi Arabia.</p> <p>Students will be based in teams at the KAUST Entrepreneurship Center and will be selected (or self-selected with agreement from faculty) in interdisciplinary teams of 2-4. The assignments are all related to creating a full business case for the technology assigned, as a team, and presenting that during various pitches and a final Executive Summary Business plan at the end of the course.</p>
<p>Course Policies (Absences, Assignments, late work policy, etc.):</p>	<p>Standard KAUST policies. The course is eligible for students that are interested in a career that involves technology transfer and in particular commercialization strategies to expand their horizons beyond their technical knowledge, acquire leadership skills and build an entrepreneurial mindset.</p>
<p>Additional Information:</p>	<p>The course requires students to spend time preparing and completing weekly progress assignments including at least once weekly feedback sessions with a mentor. Students will be based in teams at the KAUST Entrepreneurship Center over the sixteen weeks of the program, and will receive mentoring from the EC team as well as visiting mentors (international) and selected visiting faculty.</p>

The course is open to students across all three divisions where applicable. It is open to PhD students only with written confirmation from the student's supervisor.

Dr. Erbilgin also has extensive academic experience teaching entrepreneurship courses at Northeastern University and University of California, Berkeley and leadership positions at different corporates and startups successfully releasing products in the market. Most recently Dr. Erbilgin lead the Security Software Development effort at Workday. These security products are used by the Workday ERP suite and span from encryption, Key Management System, Certificate Authority, Authentication, to IAM (Identity and Access Management)

Dr. Bulent Erbilgin has over two decades of industry experience in technology and executive roles ranging from Cyber-security, Network Security, Web applications, SaaS, Complex high-availability software, highly distributed systems, Analytics, Big data, IOT, Machine Learning to Network Intelligence products.

Dr. Erbilgin holds a M.S. in Computer Engineering and a Ph.D. in Electrical Engineering from Stanford University.

- Hattan Ahmed, the Head of the Entrepreneurship Center, is co-instructor and lecturer in the course. He has taught a variety of similar courses over the years in universities and colleges. Hattan runs national entrepreneurship programs in partnership with local and international institutions as well as lecturing in corporate innovation programs.

_ Dr. Lama Hakem, Training Spicialist at the Entreprnurship Center, is co-instructor in the course. She has a PhD in Conflict Analysis and Resolution and served as an assistant professor at different universities in Saudi Arabia. She has taught several classes for undergraduate and graduate students in the field of leadership and entrepreneurship.

This form of experiential learning in entrepreneurship and innovation is very much based on a mentor-led process. Therefore the Entrepreneurship Center will use its existing mentor pool (from inside and outside of KAUST) for this process.

This would also include mentors from across the Innovation & Economic Development, in areas directly related to building this kind of business case including:

- Entrepreneurship Center including the International mentor group where applicable
- Industry Engagement Office (IEO) mentors for understanding the business value chains of different industries and connecting with relevant corporate connections during the 'customer discovery' work.
- Technology Transfer Office mentors on matters related to patents, technology transfer, positioning and defensibility.
- Innovation Fund mentors where applicable including feedback on the investment needs, valuation and financials
- Any academic staff or non-academic staff who would like to participate where their backgrounds are relevant.

*Required

Tentative Course Schedule:
(Week, topic/emphasis &
resources)

Week/ Lectur	Topic
1A	<p>Classes: Introduction to Technology New Ventures; Leadership.</p> <p>Experiential Actions: Set Expectations, overview of class learning objectives and methodologies. The students get to know each other through a series of team building exercises that lead to the team creation. Leadership and team decision making exercise (survival at sea).</p> <p>Instructors: Bulent, and Lama</p>
1B	<p>Classes: Conflict resolution, and Negotiations.</p> <p>Experiential Actions: Case study analysis on leadership and conflict resolutions. Discuss insights from “how to get more of what you want” book to master negotiations skills. Negotiations role play.</p> <p>Instructors: Bulent, and Lama</p>
2A	<p>Classes: What is business; Anatomy of a startup</p> <p>Experiential Actions:</p> <p>Instructors: Bulent, and Lama.</p>
2B	<p>Classes: IP presentation; Opportunity identification</p> <p>Experiential Actions: KAUST Technology Portfolio Managers will present a list of KAUST IPs available for the students to be used in the class to develop their business ideas.</p> <p>Instructors: Bulent, Hattan and Lama ; TTO representative</p>
3A	<p>Classes: Teaming; Ideation; Opportunity identification</p> <p>Experiential Actions: Entrepreneurial mindset iDNA: explore the 5 skills that differentiate any disruptive innovator (Associating, Questioning, Observing, Experimenting and Networking) to identify opportunities; Case study on teaming; Team formation exercise. Team formations starting; Product idea selection starts together with team formations.</p> <p>Instructors: Bulent, and Lama.</p>
3B	<p>Classes: Concept of entrepreneurship; How companies enter markets;</p> <p>Experiential Actions: Case study analysis of a company entering a new market; Teams identified. TechNav lecture by Hattan</p> <p>Instructors: Bulent, and Lama</p>
4A	<p>Classes: Design Thinking; Customer Discovery;</p> <p>Experiential Actions: Introducing Design Thinking Process: how to find the sweet spot between what's feasible, desirable and viable using the golden circles model (Why, How and What) by Simon Sinek. Learning to reiterate the process (Empathize, Define, Ideate, Prototype and Test). Learning the human centered approach to discover customers and identify the problem. Guidelines on how to conduct customers interview and testing the initial hypothesis. Actual demonstration of good and bad examples of customers interview are simulated in the class. Practical example delivered by KAUST EC startups, on their experience with customer interviews.</p> <p>Teams brainstorm on identifying their product idea. Teams and product ideas: present first draft of their product idea</p> <p>Instructors: Bulent, and Lama.</p>
4B	<p>Classes: Business idea/your solution; Problem statement/Unmet need; Customer persona;</p> <p>Experiential Actions: Case study analysis on problem statement & customer persona; Teams present second draft of their product idea. Teams start customer discovery.</p> <p>Instructors: Bulent, and Lama.</p>
5A	<p>Classes: Market research to validate need, price, position; how businesses find ways to grow.</p> <p>Experiential Actions: Case study to validate need, price, position and company growth. Teams present their problem statement and Customer Persona.</p> <p>Instructors: Bulent, Lama, Hattan</p>

5B	<p>Classes: Value proposition and product market fit</p> <p>Experiential Actions: Case study analysis on product market fit; Teams will learn about the Product Market Fit as essential concept to the success of their technology development. Teams will identify the customer segment and its fit with their value proposition, proven by actual data gathered from their customer interviews. Teams present their market research validating need, price and position.</p> <p>Instructors: Bulent, Lama, Hattan</p>
6A	<p>Classes: Solution description; Competitive analysis; Barrier to entry</p> <p>Experiential Actions: Teams learn how to effectively describe their solution. Teams start doing competitive analysis; Teams define the barrier to entry for their product. Students will be introduced to fundamental concepts on how companies protect themselves from competition as long-term survival mechanism. The students will learn about Michael Porter's five forces and Clay Christinson Disruptive Innovation.</p> <p>Instructors: Bulent, Lama, Hattan</p>
6B	<p>Classes: The art of story telling and slide design</p> <p>Experiential Actions: Gate 1: teams present their problem statement/unmet need; customer persona; market research; solution description; value propoosition; competitive analysis; barrier to entry. Teams will learn how to build effective stories to better deliver their message. Students will be given the tips and tools to build their pitches in an appealing and professional way. The student will learn how to design their messages throughout their presentations based on the targeted audience. Practical example delivered by a KAUST EC startup, on their experience with presenting.</p> <p>Instructors: Bulent, Lama, Hattan; Roberto Ciamaria from EC team</p>
7A	<p>Classes: G2M (Go To Market) and channels; How companies launch products & establish a presence</p> <p>Experiential Actions: Case study analysis for go to market startegies and channels</p> <p>Instructors: Bulent, Lama, Hattan</p>
7B	<p>Classes: Revenue and Business Models</p> <p>Experiential Actions: Teams will learn about the building blocks of the Business Model. Those building blocks build on the value proposition created in the previous workshop.</p> <p>Instructors: Bulent and Hattan; visiting industry practitioners from the Industry Partnership Program</p>
8A	<p>Classes: Review all subjects included for the midterm</p> <p>Experiential Actions: Dry run midterm presentations. Review draft executive summaries for the midterm.</p> <p>Instructors: Bulent, Lama, Hattan and mentors</p>
8B	<p>Midterm pitching value prop and submitting executive summary</p> <p>Instructors: Bulent, Lama, Hattan and mentors</p>
9A	<p>Classes: Product Development methods: Agile vs. Traditional</p> <p>Experiential Actions: Case study on product development methodologies</p> <p>Instructors: Bulent, Lama, Hattan</p>
9B	<p>Classes: Project management techniques</p> <p>Experiential Actions: construct an actual project schedule based on a business case study.</p> <p>Instructors: Bulent, Lama, Hattan</p>
10A	<p>Classes: Pricing & Financials; Financial planning & projections</p> <p>Experiential Actions: Build your financials; Teams will learn the fundamentals of financial feasibility understanding the basic concepts to measure the viability of the business. Those concepts include revenue models, cost structure, customer acquisition cost, customer lifetime value and pricing.</p>
10B	<p>Classes: Markets & Segmentation; Sales vs. Marketing; Partnerships; Jumpstart Sales strategy</p> <p>Experiential Actions:</p> <p>Assess your market potential, Teams will be introduced to the concept of identifying different markets and the importance of slicing down the markets to subsectors in order to validate the value proposition. Market segmentation concept is essential in the validation process to collect sample interviews for different segments and customize the value proposition to the need of the targeted segment. The students learn as well about the different data sources available at KAUST library to collect market data.</p> <p>Instructors: Bulent, Hattan, Lama, Visiting member from the library</p>

11A	<p>Classes: Corporate Org structure; “ninja” financial model generation</p> <p>Experiential Actions: Case study on corporate structure and how it could help/hurt productivity. Students learn a quick way to develop crude financial models as a starting point. These crude models are a starting point and will later be refined as they complete their market analysis.</p> <p>Instructors: Bulent, Hattan, Lama</p>
11B	<p>Classes: Ethics</p> <p>Experiential Actions: Case study analyzing ethical situations.</p> <p>Instructors: Bulent, Hattan, Lama</p>
12A	<p>Classes: Digital marketing</p> <p>Experiential Actions: Students will do hands-on digital marketing using Google Analytics, Facebook and other digital media.</p> <p>Instructors: Bulent, Hattan, Lama, Haitham</p>
12B	<p>Classes: Branding, building startup identity</p> <p>Experiential Actions: Students will work on their own products branding and identity.</p> <p>Instructors: Bulent, Hattan, Lama, Haitham</p>
13A	<p>Classes: Raising money, types of capital and negotiating the deal;</p> <p>Experiential Actions: build your investment pitch; The students will learn about what investors look for to make the decision and raise the capital required to achieve their next milestone. Innovation Fund team member will explain to the students the different type of investments, the most important metrics for investors and KAUST Innovation Fund invest in technology-based startups. Practical example delivered by a KAUST EC startup, on their experience in dealing with investors.</p> <p>Instructors: Bulent, Hattan, Lama, Visiting Practitioner: KAUST Innovation Fund team member</p>
13B	<p>Classes: Automation; Future of Work</p> <p>Experiential Actions: Case study analyzing how automation will impact future of work</p> <p>Instructors: Bulent, Hattan, Lama</p>
14A	<p>Classes: Legal Aspects of New Ventures</p> <p>Experiential Actions: Students will learn the fundamental of the different legal structures for building a new venture and understanding its pros and cons. Students will learn about what it takes to incorporate a company in Saudi. Hourani legal firm delivered the workshop in collaboration with KAUST Legal.</p> <p>Instructors: Bulent, Hattan, Lama; visiting practitioner from external legal firm, Hourani & Associates in collaboration with KAUST legal office</p>
14B	<p>Classes: Organizational Dysfunctions</p> <p>Experiential Actions: Analyze insights from the “five Dysfunctions...” book</p> <p>Instructors: Bulent, Hattan, Lama</p>
15A	<p>Experiential Actions: Dry runs for the final pitch</p> <p>Instructors: Bulent, Hattan, Lama, mentors</p>
15B	<p>May 6th</p> <p>Classes: Final Pitch and preparation;</p> <p>Instructors: Bulent, Hattan, Lama</p>

Classes will be held Mondays and Wednesdays 5:30 – 7:00 pm. This is subject to change to different slots in the second week provided all students can make the new slots. First class is January 27 starting 5:30 pm at the EC (Innovation Cluster II, building 23, Second floor)

NOTE: The instructor reserves the right to make changes to this syllabus as necessary.