Department of Management

MBAC6090E
Selected Topics in Business - Deep Tech Lab

(2025-26 Term 2; version 1)

Period & Location:	Nov 29 – Feb 28 (2 full-days and 7 evenings); CYT and MBA Town Center
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New business ventures are vital to the society and the economy. Almost all the governments and economies have pledged to boost entrepreneurship as a solution to bring more jobs and growth. The US has benefited tremendously from entrepreneurs when they spawn the world with new ideas and innovative, often tech-driven, products and services. China has picked up entrepreneurship and took leads in a few domains of innovation. It is jostling power against the US and other advanced economies in the past few years.

Hong Kong was born entrepreneurial. After many dormant years in the 1990's and 2000's, the entrepreneurial spirit has risen again in the past few years reversing the negative trend caused by short-termism, backward mentality, and obsolete institutions. Hong Kong as home to several world-class universities spells a bright future on innovations. Now with novel discoveries from basic research, accelerator programs, a new breed of talents, a rapidly growing hinterland, and opportunities in the region, investments from the HK Investment Corporation, RAISe+, and InnoHK have commit billions of dollars to the innovation-driven economy. There is no turning-back, but great ideas can get stuck at universities. It takes talents to find ways to translate the discovery and commercialize break-through inventions for deep-tech entrepreneurship.

This course is designed for this mission. Deep-tech refers to innovations based on invention in significant engineering and scientific advancements which inevitably require years of research on substantial amount of funding. This special-topic course on entrepreneurship requires students to work with ventures in the **Deep Tech Lab** (DTL) organized by the CUHK Center for Entrepreneurship and partners in other universities. DTL is modelled on a tremendously successful international incubation program called Creative Destruction Lab. With success in the

first two cohorts since 2023 (see Appendix A), DTL is currently organizing the third cohort in tandem with this course.

Design & Objectives

This course is a practicum in which the students will learn new skills to go with their existing body of knowledge, and then apply it into supporting and consulting a deep-tech business venture. Students will acquaint with scientist-founded ventures in DTL, and will gain the opportunity to provide hands-on support to the these founders with market analysis, customer development, research, financial analysis, and/or other core activities related to building early-stage ventures. They will also be provided with visibility into how mentors - senior business executive, serial entrepreneurs, venture investors, and domain experts - advise the best practices for strategy, business development, and fund raising for start-ups. Upon successful completion of this course, students are expected to:

- Gain a better understanding on how to seize an opportunity entrepreneurially in real-life venturing;
- learn to conduct analysis of critical business issues of a tech-based venture, create a market entry plan strategically, and conduct due diligence for a venture;
- acquire the "language" and evolve on writing and presenting a professional business analysis;
- expand the social network and acquire hands-on knowledge and skills for business enterprising.

This course shall benefit students interested in business venturing, consulting, or a career related to investment, including VC funds, private banks, and family offices. Since students will meet with high-profile mentors, investors, and businessmen, it shall inform them how to pursue opportunities entrepreneurially and boost their CV for applying to consulting firms, corporate and professional service providers which incline to bringing in tech-savvy and entrepreneurial new recruits. According to Creative Destruction Lab in Canada, "10% of MBA students have declined offers from companies like McKinsey & Co. and Amazon to join CDL startups." Joining a prospective deep-tech venture has also become a career option made available to past students of this course.

Learning Approach – What will you need to do for this course?

The course will consist of lectures/ workshops in scheduled evening classes and DTL sessions (at two of the three whole days – one of them online) as well as self-managed meetings with ventures and interviews with founders. Lectures and workshops will teach and guide students on concepts that they will apply in their venture projects. Students will have access to and will be encouraged to attend most if not all the DTL sessions in the form of supportive roles. Guest speakers and DTL founders are to be organized to augment classroom learning and the project. Tutorials will be incorporated into the course sessions to help ensure that the interaction between students and the ventures proceeds smoothly.

Students are expected to complete reading and written assignments by the date noted on the syllabus. They will be assigned review and discussion questions as well as cases, videos, and exercises. Some of these assignments can be completed individually, while some of them may involve teamwork. All students are expected to contribute substantially in the groupwork.

Outstanding students will also be recommended to continue working with the graduated ventures and mentors after March.

Application & Schedule

For MBA student – The MBA Office will introduce the course and host a practicum information session for you in August. Interested students will register through the program office. You can find further information of mentors, ventures, and media coverage on DTL website.

For non-MBA student – A limited number of students will be able to join following the Student application procedure on the DTL website. Interested students should be accepted on a first-come-first-served basis. The Center for Entrepreneurship will cover the extra-cost for any graduate students and their affiliated academic unit as long as the unit supports the student to take the course (see Appendix C for criteria and other information).

Essentially, students shall attend the three DTL sessions and the evening classes at MBA Town Center. Course materials are available on Blackboard, and the online Certificate on Entrepreneurship is free for all CUHK students.

Course Schedule	Venue	Class Dates
Incubation Program Day: **9:30 a.m. to 5:15 p.m. (Sat)** Nov 29; **9:30 a.m. to 5:15 p.m. (Fri)** Jan 23; Mar 14 (optional) **Class Day:** **7:00 p.m. to 10:00 p.m. (Fri)** Dec 5, 12; Feb 6, 20 **7:00 p.m. to 10:00 p.m. (Fri)** Jan 7, 14	CUHK CYT (TBA) Online Downtown venue (TBA) Sapphire, MBA Town Center	Sat Nov 29 Fri Jan 23; Mar 14 Fri Dec 5, 12; Feb 6, 27 Wed Jan 9, 16, 30

Course Requirements & Assessment

Class participation and exercises	25%
Individual assignments	50%
Reflection paper	15%
Feedback from business venture and Peer review	10%
Total:	**100%**

Class Participation and Exercises. Students may come from different disciplines but must have basic understanding of entrepreneurship. Students have to make pre-course preparation (5%) and attend the classes (10%). This is an "action-packed" course and students are expected to apply their skills and knowledge through practical problem solving, working with real businesses to help them address and solve critical challenges such as management and funding. There will be group and individual exercises, then students will also be graded on their class participation, individual participation in team-work, and the quality of the deliverables (10%).

Individual assignments: There will be three assignments: #1 is a two-page analysis of a tech venture and its potential market in preparation after the first interview with the venture; #2 is a four-page strategic analysis suggesting a go-to-market strategy for a tech venture after class 2 ; and #3 is based on the needs of the venture as it take part in the session, and the student assigned to support the venture have to assist for the successful completion of the objectives of the venture. The assignments will carry different weights. Details and specific requirement will be discussed later in class.

Venture feedback and peer evaluation: Student will evaluate each other on team work (5%), and the venture will also give feedback on contribution of the student (10%).

Reflection paper or business venturing on your own idea: Students will reflect on their interaction with the venture and mentors, the gap between entrepreneurial theory and real practices, and the similarities and differences between deep-tech entrepreneurship and ordinary entrepreneurship. Alternatively, they can propose a business idea on deep tech venturing based on what they learn or come up.

Textbook and Key Readings & Cases (all available at library/ Blackboard)

[AI] Califano, Cha, Cooney, Deshpande, and Nallur (2022). *Adaptive Innovation: An Entrepreneur's Guide to Technology Innovation.* World Scientific Publishing.

Aulet, B. (2024). *Disciplined entrepreneurship: 24 steps to a successful startup* (2nd ed.). Hoboken, NJ: John Wiley & Sons.

Aulet, B. (2017). *Disciplined entrepreneurship workbook.* NJ: Hoboken.

- "Why great ideas get stuck at universities." *HBS Working Knowledge*, 2024.
- *Market for judgment: The Creative Destruction Lab*. HBS case, 2020.

- *Note on funding deeptech startup*. HBS note.

Useful References and readings

Aghion, Antonin, & Bunel (2021). *The Power of Creative Destruction: Economic Upheaval and the Wealth of Nations.* Boston: Harvard Business School Press.

Byers, Dorf, & Nelson (2015). *Technology Ventures: From Idea to Enterprise.* McGraw Hills.

Blank, S. & Dorf, B. (2020). *The startup owner's manual.* Hoboten, NJ: John Wiley and Sons.

Marcolongo, M. (2017). *Academic Entrepreneurship: How to bring your scientific discovery to a successful commercial product.* Hoboten, NJ: John Wiley and Sons.

Osterwalder, A., & Pigneur, Y. (2013). *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers.*

Shimasaki, C. (2020). *Biotechnology entrepreneurship: Leading, managing, and commercializing innovative technologies.* London: Academic Press.

"Do lean startup methods work for deep tech?" HBS Working Knowledge.

"What evolution can teach us about innovation?" HBR.

Course Schedule (tentative)

Class	Date	Key Topics	Teaching Content
Pre-class		Basic concepts of entrepreneurship Background of DTL and ventures accepted to the program	Completion of Certificate on Entrepreneurship (online program, 2 hours) or equivalent Read materials on DTL on Blackboard Reading: *Why great ideas get stuck at universities* HBR
DTL	Nov 29 (Sat)	Meeting 1 of DTL	Observe DTL and meet your venture – socialize with mentors and founders AI – Ch.1 & Ch. 2 (10 pages)
1a	Dec 5 (Fri)	Review of entrepreneurial ecosystem & why DTL as an incubation program	Reflection on DTL experiences; Match a venture with student AI – Ch. 3, 4 & 7 Case: *Market for judgment* #1 Assignment due
1b	Dec 12 (Fri)	Deep tech, Disruptive technology & Academic entrepreneurship	Guest speaker: founders of a DTL graduate TBC AI – Ch. 5, 6, 7

			Shadowing the meetings between the venture and the mentors and helping out Interview with the assigned venture
2a, b	Jan 9, 16 (Wed)	Stream review: Fin tech, Blockchain, Biotech, Robotics, Clean tech, etc., depending on the ventures of DTL	Guest speakers: DTL mentors or guests (TBA) AI – Ch. 8 - 13 #2 Assignment due Support the venture to fulfil the objectives of the venture and mentor requirements through on-line platform
DTL	Jan 23 (Fri)	Session 2 of DTL (on-line)	
3a, b	Jan 30, Feb 6 (Fri)	Venture capital/ Entrepreneurial financing/ Team building & Negotiation /	Case: Slicing pie with a razor: Ockham Technologies' founding agreement AI – Ch. 14 -17 Reading: *Notes for funding deeptech* startup HBR Support the venture to fulfil the objectives of the venture and mentor requirements through TEAM platform #3 Assignment due
	Feb 27 (Fri)	Presentation of individual project on your ideas on building tech ventures in real life or Reflection Paper	Readings: *Do lean startup methods work for deep tech?*
DTL	Mar 13 (Fri)	Session 3 of DTL (optional)	

Grade Descriptors

A : Outstanding performance on all learning outcomes.
A-: Generally outstanding performance on all (or almost all) learning outcomes.
B: Substantial performance on all learning outcomes, OR high performance on some learning outcomes which compensates for less satisfactory performance on others, resulting in overall substantial performance.
C: Satisfactory performance on the majority of learning outcomes, possibly with a few weaknesses.
D: Barely satisfactory performance on a number of learning outcomes
F: Unsatisfactory performance on a number of learning outcomes, OR failure to meet specified assessment requirements.

Students must take note and observe the honesty and plagiarism policy of CUHK (Appendix B).

Appendix A – Impact of DTL and CDL

The Center for Entrepreneurship organized the first cohort of Deep Tech Lab last year. You can find the testimony of ventures and mentors in the DTL website. We reached out to a few hundred of ventures and received over 80 responses; 15 of them were finally admitted into the program. We also recruited and organized over 30 mentors, and offered the first run of this course. The areas of the DTL ventures range from Advanced Manufacturing, Biotechnology, Smart Cities, to Food Science and Climate & Sustainability. They originated from universities (not just CUHK), incubators, and private endeavors. Two of them were from Japan and the US respectively.

Impact for deep-tech ventures is about getting funding and, if not more, venture development (e.g., technology validation, product-market fit, intellectual property management, & access to complementary assets). Two ventures of the first cohort receive a seed round of funding to scale and continue their runway. More importantly, DTL ventures made stride in their development from its invention. For instance, one of the ventures had landed an office in Calgary to explore the North America market; it will develop a born-global venture selling solutions on data storage and security across the Pacific. Another biotech venture, with mentors holding their hands, located an equipment manufacturer as a its R&D partner in GBA to replace a supplier in Germany, thus accelerating its pace and reducing costs. Other examples could be found in the report of DTL.

Creative Destruction Lab (CDL) targets on building massively scalable, science- and technology-based startups at their seed stage. In its 10 years of development, its venture graduates have created a total market value of over Can $24 Billion. A common profile of a CDL founder was some who had just graduated with a STEM doctorate or had worked in a university lab, looking to commercialize cutting-edge science from his or her research work. Most company admitted into the CDL had a working prototype or proof of concept and went on track to raise their seed round of funding. CDL interviewed founders and selected ventures that they believed had the most to gain from the program and the greatest potential to scale. It has more interest on the intellectual property than business model, so its vetting involves meeting founders and conducting technical evaluations and also considers intricacies and learning attractive to mentors. Devoted, social-minded, and versatile mentors will work with CDL in a group and devote 2 days every month for a few months to pace objective-oriented progress for the ventures. Apart from mentors, scientists, investors, and partners, CDL also affiliates with MBA and other senior students, as the participating schools offer a CDL course. I model such course in designing ours and will receive support from CDL to offer a course.

Appendix B - POLICY ON ACADEMIC HONESTY AND PLAGIARISM

The Chinese University of Hong Kong places very high importance on honesty in academic work submitted by students, and adopts a policy of ***zero tolerance*** on cheating and plagiarism. Any related offence will lead to disciplinary action including termination of studies at the University. Attention is drawn to University policy and regulations on honesty in academic work, and to the disciplinary guidelines and procedures applicable to breaches of such policy and regulations. Details may be found at http://www.cuhk.edu.hk/policy/academichonesty/.

With each assignment, students will be required to submit a signed declaration that they are aware of these policies, regulations, guidelines and procedures. In the case of group projects, all students of the same group should be asked to sign the declaration, each of whom is responsible should there be any plagiarized contents in the group project, irrespective of whether he/she has signed the declaration and whether he/she has contributed directly or indirectly to the plagiarized contents.

For assignments in the form of a computer-generated document that is principally text-based and submitted via VeriGuide, the statement, in the form of a receipt, will be issued by the system upon students' uploading of the soft copy of the assignment. Assignments without the properly signed declaration will not be graded by teachers. Only the final version of the assignment should be submitted via VeriGuide.

The submission of a piece of work, or a part of a piece of work, for more than one purpose (e.g. to satisfy the requirements in two different courses) without declaration to this effect shall be regarded as having committed undeclared multiple submission. It is common and acceptable to reuse a turn of phrase or a sentence or two from one's own work; but wholesale reuse is problematic. In any case, agreement from the course teacher(s) concerned should be obtained prior to the submission of the piece of work.

Appendix C - Student Application Process (for non-MBA students)

For non-MBA students, please go to the DTL website, fill out the application form and upload your CV and submitting a 2-3 minute video that addresses the following questions:

- Why are you passionate about participating in Deep-Tech Lab and this Applied Method course?
- How do your skills and experience position you to uniquely contribute to the ventures?
- What do you hope to learn from the course and the Lab?

Students will be selected on the basis of their passion for the program, relevance of their experience, and reflection on what they hope to learn and bring to the program.

DTL will inform applicants the results in due course, and the MBA Office will enroll the accepted applicants in September. Note that students must spare credits in their study plan for the course and seek consent from their affiliated program after they receive approval from DTL.

Again, the MBA Office will take care of the registration of MBA students.

If you have further questions, please contact the work group on Deep-Tech Lab at hkdtl.admin@cuhk.edu.hk.