Cambridge Judge Business School
Entrepreneurship Centre

EnterpriseTECH PG I 2020-21

ENTERPRISE TECH

Entrepreneurship
Centre

UNIVERSITY OF CAMBRIDGE
Judge Business School

Enterprise and entrepreneurship education for University of Cambridge students and researchers

Entrepreneurship education can equip students and researchers with real-world enterprise skills, empowering them to increase their entrepreneurial capacity for generating ideas and help them build the skills needed to make them happen. Building this capacity strengthens competencies that contribute to rewarding, self-determined lives that add social, cultural and economic value to society.

The Entrepreneurship Centre's Education team delivers pioneering educational programmes including **EnterpriseTECH**, **EnterpriseTECH STAR** and **EnterpriseWOMEN**.

We launched EnterpriseTECH in September 2018 as an entry-level entrepreneurship programme. It offers a hands-on experience for those studying for undergraduate degrees or conducting research across the University. Around 400 students have participated to date.

EnterpriseTECH explores the processes involved in transforming early-stage inventions or ideas into commercial business opportunities. It provides a learning experience for students, commercialisation insights and opportunities for academic inventors and draws the business community closer, with all parties engaged in knowledge exchange.

In September 2019, we launched EnterpriseTECH STAR as a follow-on programme. This intensive 10-week programme for 20 students helps them develop their own business ventures. It is open to postgraduates and postdocs who have graduated from EnterpriseTECH.

In summary, the EnterpriseTECH suite of programmes offer a stimulating environment where learning-by-doing develops intuitive decision-making, identifying opportunities, creative problem solving, innovating, strategic and design thinking, communicating, influencing, leading and increased financial/business literacy.

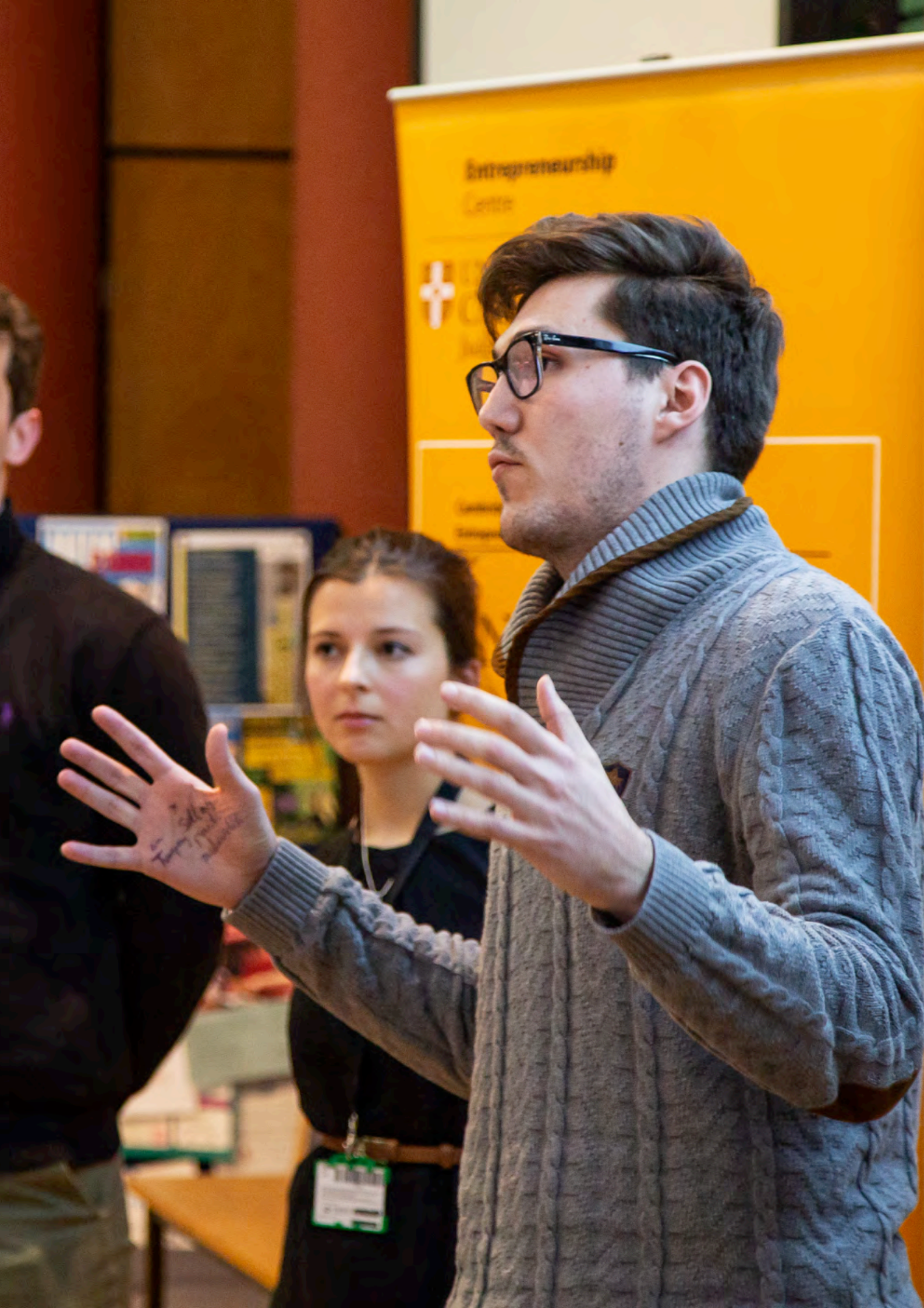
Our goal is to build a generation of science-minded researchers that place entrepreneurial thinking, creativity and confidence central to their being.

Dr Rebecca Myers ARCS
Head of Education

Entrepreneurship Centre
Cambridge Judge Business School

EnterpriseTECH PG I 2020 – Team projects

1. Bioceramics – Paper, Ash and Resin
2. An application for hypertextual connections from within printed books and documents
3. Modifying Genomes with integrases
4. Micromining
5. RNA trans-splicing technology for cancer
6. StemBond hydogels for stem cell culture
7. A server-less messenger that compensates effort and removes middlemen
8. Watercress Protein
9. Spinal fusion cage (additive manufacturing with graded properties for functional structure
10. Organic-inorganic hybrid direct conversion X-ray detector
11. Feeding the World with Sustainable, Synthetic Biology Derived Foods – Application of 3D Biological Processors
12. Indentation Plastometry
13. Nanocarrier for non-viral gene therapy for disease treatment


Entrepreneurship

Programme team

Dr Rebecca Myers ARCS

Head of Education

Entrepreneurship Centre
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Rebecca joined CJBS EC in 2018 intending to build educational programmes on entrepreneurship that serve the research community. The first was EnterpriseTECH in 2018, which has had close to 450 students attend. Then came EnterpriseTECH STAR in 2019 to help researchers begin the journey towards forming their own new ventures.

For close to 20 years, Rebecca's home was the Department of Chemistry at the University of Cambridge. She is an organic chemist by training having done her PhD with (the late) Prof Chris Abell FRS. Rebecca then worked with Prof Steven Ley CBE FRS (also) in the Department of Chemistry. She was also the Associate Director of the Cambridge-CRUK PhD Training Programme in Medicinal Chemistry led by Prof Sir Shankar Balasubramanian FRS for ten years. Her research and publications cover many areas of medicinal chemistry, particularly around cancer research.

Rebecca values collaborative efforts and is passionate about cultivating meaningful research impact and creating opportunities for researchers to thrive beyond academia.

Dr Ghina Halabi

Programme Manager

Entrepreneurship Centre
Cambridge Judge Business School
g.halabi@jbs.cam.ac.uk

Ghina is an astrophysicist and social entrepreneur. Previously, she was a research scientist at the Institute of Astronomy and Junior Research Fellow at Wolfson College, University of Cambridge. Ghina is the first person to obtain a PhD in astrophysics from a Lebanese university, the American University of Beirut, where she worked as lecturer before moving to Cambridge.

Ghina is Founder and Executive Director of She Speaks Science, an award-winning global and multilingual enterprise that aims to spark the interest of young people in STEM and promote women and minority scientists. She is also a mentor with the United Nations Office for Outer Space Affairs UNOOSA and sits on the advisory board for Public Engagement at Cambridge University.

Ghina consults and leads training workshops on academic and business storytelling, and is a physical theatre practitioner. She is a public speaker at international conferences and global forums including UN Women, UNOOSA and TEDx and is featured in mainstream m edia including BBC Future and various podcasts.

Dr Helen Taylor
Programme Manager

Entrepreneurship Centre
Cambridge Judge Business School
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Helen has worked for the University of Cambridge for the past ten years. She has been involved in our work at CJBS EC for the last year, and she is now taking much more responsibility for EnterpriseTECH as it grows.

Cambridge is also where Helen earned her PhD. She is developing a new theory *The Evolution of Complementary Cognition* which explains how humans have evolved to specialise in differing but complementary ways of processing information that work together as a system of collective cognition. Helen is investigating how this can be applied at the business leadership level and for entrepreneurs.

Olivia Cutmore
Programme Administrator

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Olivia started her administrative career in 2014 working as a hotel receptionist. After a two-year trip to Australia and returning to her hometown of Cambridge, she moved into office-based roles in the construction industry before joining the CJBS Entrepreneurship Centre's Education Team back in January 2020. Outside of work she has enrolled in an Executive Personal Assistant online course and is interested in sewing and rag-rugging.

The EnterpriseTECH programme

Educating next generation innovators

EnterpriseTECH is a foundation level entrepreneurship programme that offers a real-world experience at the interface between research and the start-up world. The goal for the student team is to determine whether a given new technology or business idea has commercial potential and if so what that may look like.

The programme has been designed with the non-business student and researcher in mind, using published guidelines to inform best practice for enterprise and entrepreneurship education in UK higher education.[1]

EnterpriseTECH teaches entrepreneurship skills through a blend of traditional learning with a lecture series and the practical application of this material to a real-world project under the guidance of a business supervisor.

The programme connects everyone involved into the Cambridge Judge Business School network and the wider entrepreneurial ecosystem in Cambridge.

EnterpriseTECH brings together:

- Students and researchers from all academic backgrounds keen to learn about entrepreneurship.
- Faculty lecturers, guest speakers and contributors keen to share knowledge and experience.
- Experienced business supervisors motivated to guide and mentor student teams.
- Inventors wanting to understand better the commercial potential their technologies.

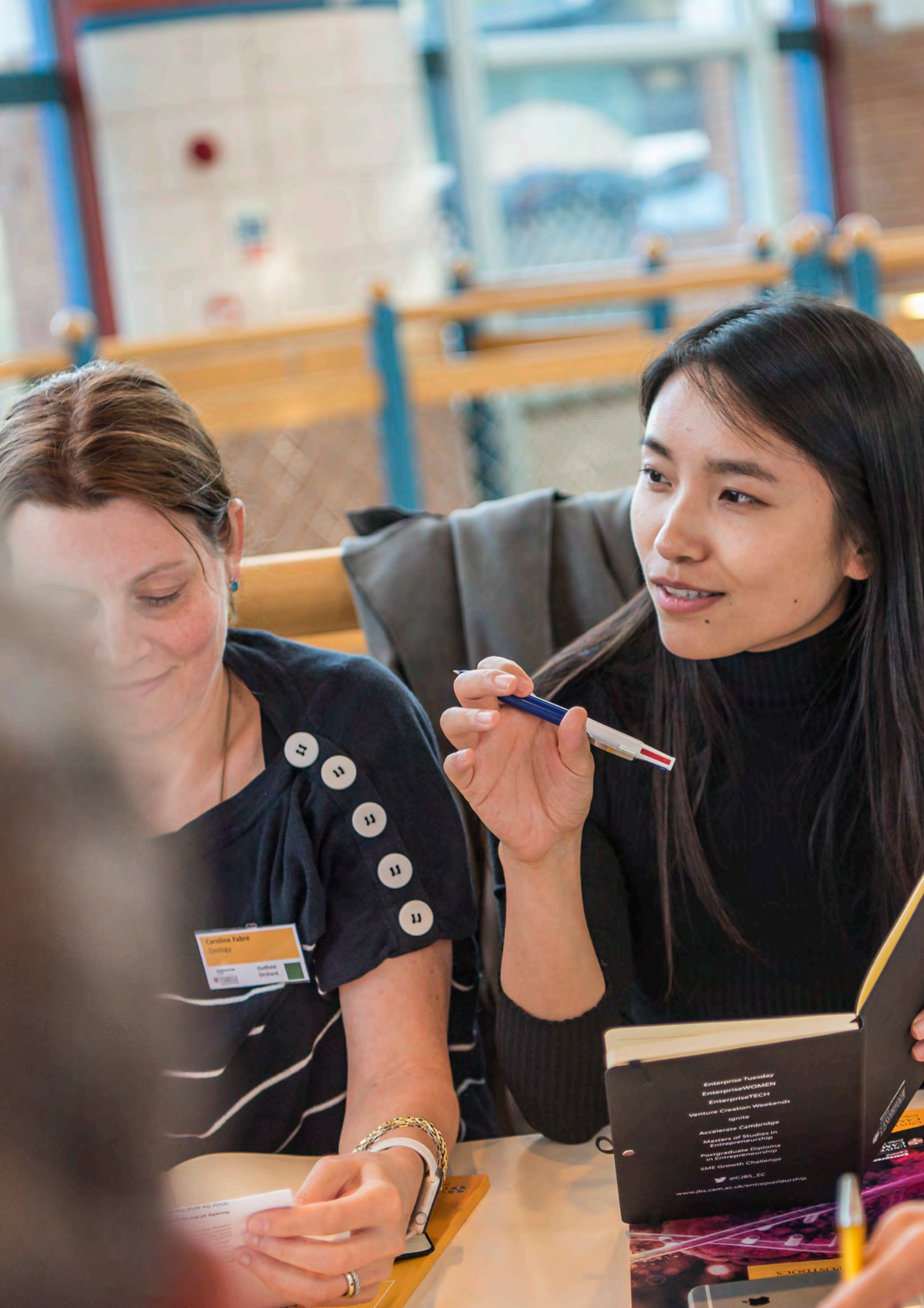
Postgraduate I

- Wednesday 2 December - Launch Night (online)
- Thursday 3 – Saturday 5 December - Lecture and workshop intensive
- Thursday 3 December – Friday 5 March – Teamwork, supervisions, research
- Wednesday 3 March - Pitch Night
- Friday 5 March - Assignment deadline (report, video, pitch deck)

Postgraduate II

- Wednesday 17 February - Launch Night
- Thursday 18 – Saturday 20 February - Lecture and workshop intensive
- Thursday 18 February – Friday 5 May - Teamwork, supervisions, research
- Wednesday 5 May - Pitch Night
- Friday 7 May - Assignment deadline (report, video, pitch deck)

[1] Enterprise and Entrepreneurship Education: Guidance for UK Higher Education Providers.


Caroline Fabre
Zoology
Enterprise Tuesday
EnterpriseWOMEN
EnterpriseTECH
Venture Creation Weekends
Ignite
Accelerate Cambridge
Masters of Studies in Entrepreneurship
Postgraduate Diploma in Entrepreneurship
SME Growth Challenge
@CJBS_EC
www.jbs.cam.ac.uk/entrepreneurship

Learning themes and teaching aims

The EnterpriseTECH learning journey aims to encourage and develop entrepreneurial effectiveness. You can develop this to different degrees, and in differing ways, based on a range of variables like personality, prior learning, motivation, ability and context.

Working in a dynamic and intellectual team creates a challenging but stimulating environment where many of these individual variables come to the fore.

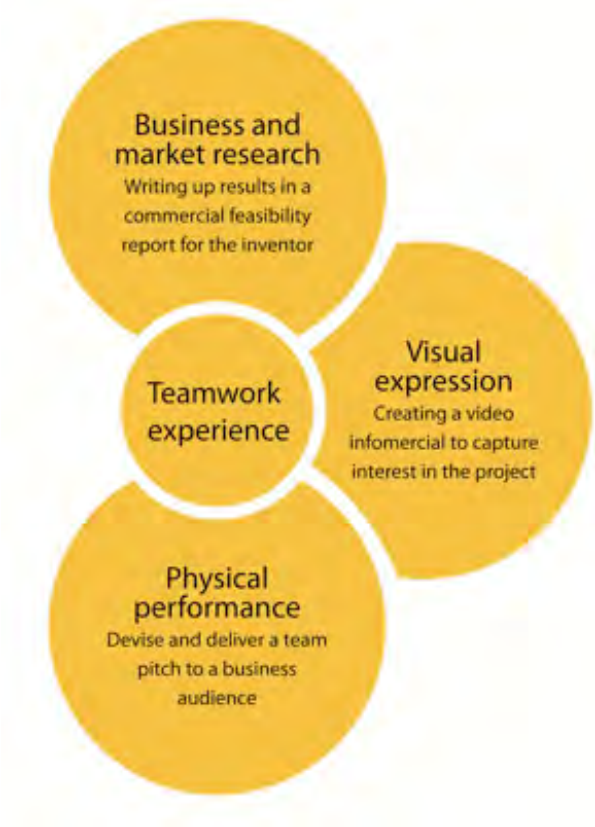
Naturally, at the heart of the EnterpriseTECH experience is the spirit of effective teamwork. This is why students are assigned to projects rather than choosing which project they want to work on. It is the same with choice of teammates. This tough approach prevents like-minded students from similar research background clustering around a project within their collective knowledge comfort zones.

The real learning experiences happen when we are stretched.

With strong frameworks for intellectual and practical learning, EnterpriseTECH is a multi-level team and personal experience.

Three themes underpin our evidence-based learning approach:

- ***Ideas and opportunities*** - learning how to spot opportunities, developing new ways to feed creativity and vision, learning how to value ideas, promoting approaches for ethical and sustainable thinking.
- ***Resources*** - embraces understanding how to mobilise resources and others around you, financial and economic literacy, self-awareness and self-efficacy, motivation and perseverance.
- ***Action*** - learning through experience, working with others, planning and management, taking the initiative, and coping with ambiguity, uncertainty and risk.



[2] M. Bacigalupo, P. Kampylis, Y. Punie, G. Van den Brande. EntreComp: The Entrepreneurship Competence Framework. Publication Office of the European Union, Luxembourg. EUR 27939 EN. Doi:10.2791/593884. **2016**.

Preparation - suggested viewing and reading

- **Where Good Ideas Come From: The Seven Patterns of Innovation**
  a TED talk by Steve Johnson.
- **What Makes a Leader?** Harvard Business Review (requires free registration).
  https://hbr.org/video/5236216251001/what-makes-a-leader
- **Whiteboard Session: How to Think Like an Entrepreneur** Harvard Business Review (requires free registration). https://hbr.org/video/5596812243001/whiteboard-session-how-to-think-like-an-entrepreneur
- **How to Turn a Group of Strangers into a Team** a TED talk by Amy Edmundson.
  https://www.youtube.com/watch?v=3boKz0Exros
- **The St Gallen Business Model Navigator** by Oliver Gassmann, Karolin Frankenberger and Michaela Csik http://www.thegeniusworks.com/wp-content/uploads/2017/06/St-Gallen-Business-Model-Innovation-Paper.pdf
- **Writing a Business Plan** Key elements of a business plan (and can be applied to a pitch deck) Sequoia Capital's Guide which has acted as a go to for over a decade
  https://www.sequoiacap.com/article/writing-a-business-plan/
- **Turning User Insight into Product** by Google for Entrepreneurs
  https://www.youtube.com/watch?v=68OpSJuM3HQ
- **Masters of Scale** podcast with Reid Hoffman. https://mastersofscale.com
- **Look Who's Talking: The Power of Personality in Communication**
  a TEDx talk by Paul Bourne. https://www.youtube.com/watch?v=yloYeiJeyww

Library Registration

You will have a session during the lecture intensive from the *CJBS Information and Library Service*.

The centre has a world-class range of databases for business research. To be able to use these, students must register with the library with a valid University of Cambridge CRSid. The data that can be accessed from the library may be helpful for market research.

Students who do not have a CRSid will not be able to access these paid subscription databases due to the strict rules regarding library access rights across the University. However, research conducted by team members who are eligible to access them can share material with team mates and use in in reports.

We recommend everyone with a CRSid register in advance of the course starting by going to their website and using the 'Register to use our services' under Quick Links.

Find out more: www.jbs.cam.ac.uk/library

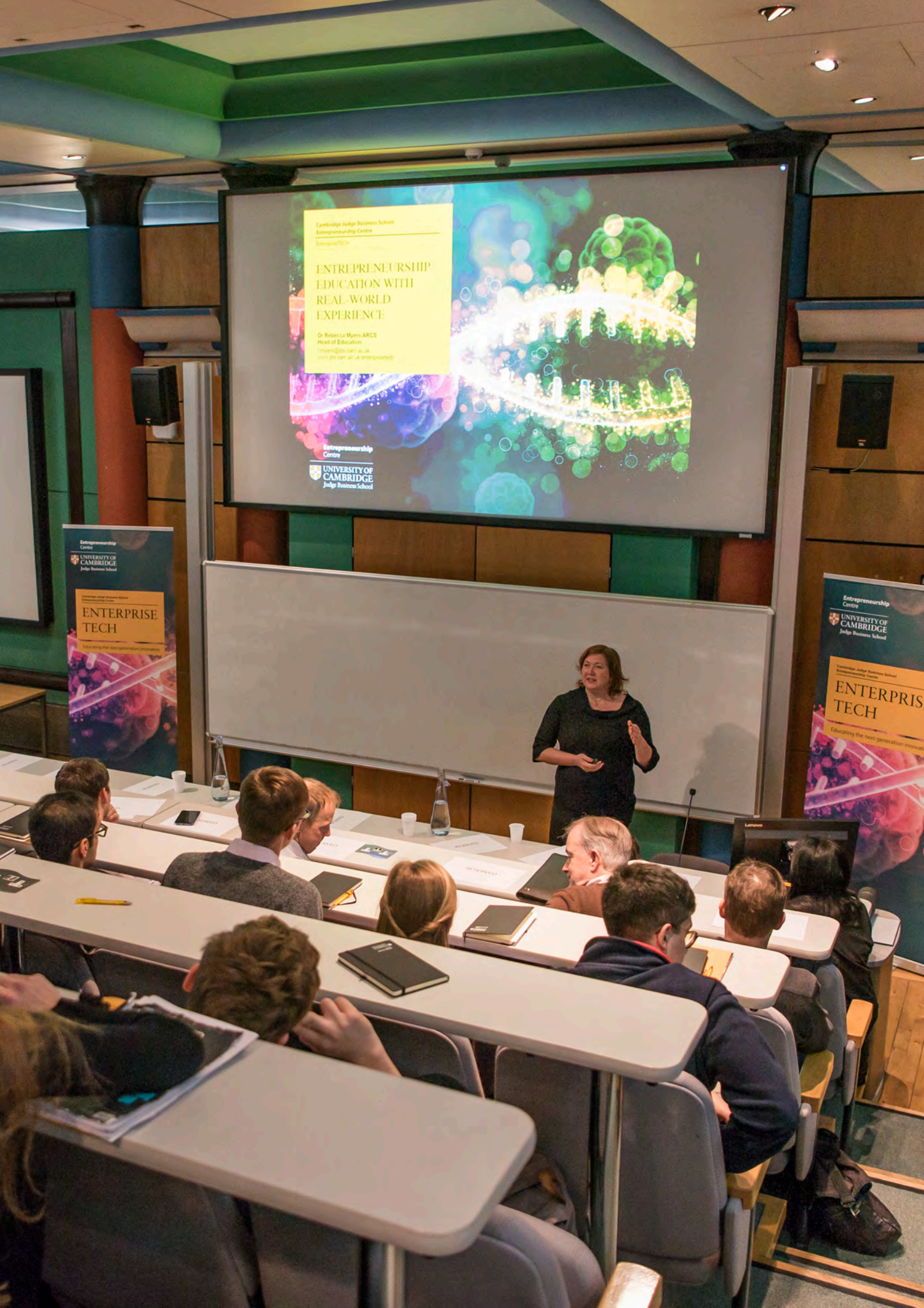
Project Initiation Document

You will complete a project initiation document (PID) shortly after Launch Night, once the project has been discussed with the inventor(s) and business supervisor.

The purpose of the PID is to focus attention on the task at hand, divide work, set goals and deadlines. It helps define the scope of the project. Share a draft with your supervisor for comments and revisions as well as the inventor(s) in advance of your first supervision.

The deadline to submit this to enterprisetech@jbs.cam.ac.uk is **12 pm Monday 14 December**

Project brief	What your team intends to research and deliver for the inventor and assessment purposes. This may well change during the course of the programme.
Project scope	Succinctly explain what you consider to be in scope and out of scope for the project for the given research spell i.e. between the lectures and Pitch Night. For instance, deciding on a specific application (or a couple) for a new technology etc.
Project deliverables	Outline the team understanding of the deliverables and what you aim to achieve. These include the assessments.
Time allocation	Agree what personal time each of you can spend on the project research. This ensures everyone is clear on what other demands there are on team members. Add each name and a line of explanation. We recommend around 50 hours of research time per person to contribute to the research spell effectively.
Project methodology	Explain how the team intends to go about the project including work streams and deadlines. You may provide a Gantt chart or similar.
Team lead	The task for the team lead is to press through the project methodology and keep everyone to schedule. The lead is not there to influence or control the direction of the project. They are providing a service for the team.
Team communicator	Describe how you plan to communicate within your team. We recommend the team communicator is the sole person who manages the flow of questions to the supervisor/inventor outside of supervisions.
Dissemination	Send your completed PID to your inventor(s) and supervisor shortly after the first meetings for comment and refinement.


Cambridge Judge Business School
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ENTREPRENEURSHIP EDUCATION WITH REAL-WORLD EXPERIENCE
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ENTERPRISE TECH
Educating the next generation innovators

Assessment

Assessment allows us to see how the teaching material (lecturers, supervisions and teamwork) has been absorbed in the context of a real-world project experience.

There are three equally-weighted assessments.

1. **Commercial feasibility report** (3000-words)
2. **Video** infomercial (2-minutes)
3. **Team Pitch** on Pitch Night (5-minutes plus questions)

Each team gets written feedback from their inventors and supervisors as well as one or tw other contributors at the end of the programme, usually within a few weeks. Teams are given a score between 1 and 5 based on the cumulative mean for each assessment. We use this to determine whether your team can be awarded a distinction (or a pass) for your certificates.

Commercial Feasibility Report

There is no one size fits all when it comes to the report. You should apply the lecture material to your project with the commercial feasibility report in mind. The narrative flow could read like this:

- Executive summary.
- Technology introduction, the attributes and the advantages.
- Gaps between the current position and minimum viable product.
- Application, industry and market place.
- Competitor landscape.
- Commercial advantages.
- Primary market research analysis; pricing.
- Intellectual property position.
- Potential business models.
- Summarise the commercial potential of the technology.
- Recommendations for the inventor(s). It may be that the market for the technology is limited; this is also a valid conclusion to draw.

he report should be 3,000-words in length excluding references and any appendix (neither of which are assessed). Assume the reader has limited knowledge about the technology and that their interests lie in its commercial potential. Third person works well. Include pictures, graphics and artwork where appropriate. Reference all sources of data as endnotes (not footnotes).

We provide a CJBS template for the report. You are free to change the cover art to something appropriate for your project.

Justify conclusions or assumptions by providing evidence where possible and state so where not. It may be that the market for this technology in its application is limited; this is also a valid conclusion to draw.

Video Infomercial

Your team will produce a 2-minute video infomercial. The content should detail the commercial advantages that the technology might have, potential scope and size of market, and benefits of the technology etc.

Explore your team's creativity and produce something you would personally engage with on LinkedIn and be motivated to follow-up. Use real or stock footage or animation or both. Aim for simple, informative and engaging. Do not infringe copyright in how you source your material. There is a Video Workshop scheduled to go through how to put this together.

The Pitch

On Pitch Night, everyone shows up. It is the endpoint *bookend* to the EnterpriseTECH.

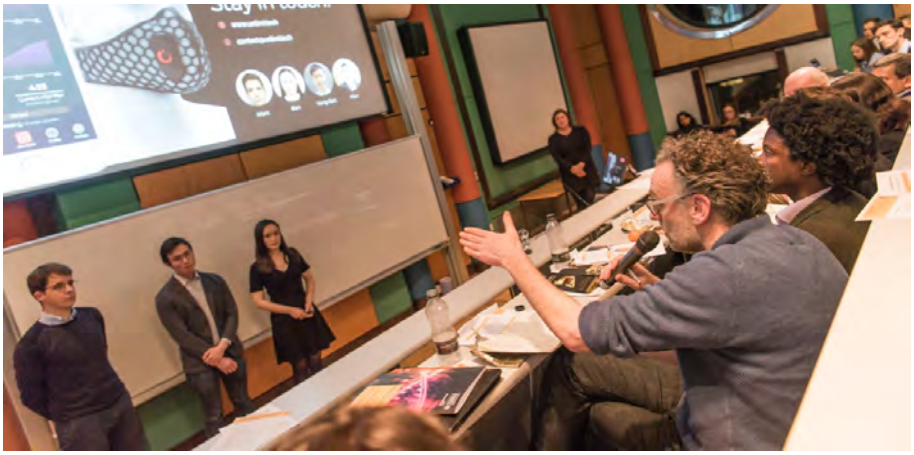
Pitches are delivered as if the technology/venture is your own rather than acting as an agent of the inventor. It makes articulating the ideas and language used much simpler. Everyone in the team must have a speaking part. Remember, a pitch is very different than a presentation!

The pitch can be aimed at raising funds to launch a detailed feasibility or market study, to gain seed funding, to ask for collaborators or partnerships; or whatever is needed to get the technology off the ground. You will have opportunities to practice and polish your pitches after the workshop and before Pitch Night. All teams must attend one of the workshops with Paul Bourne on how to pitch. Dates to be confirmed for February.

Pitch Night audiences include inventors, supervisors, lecturers, people from the investment community, programme funders and all the other students on the programme plus a panel of judges who will ask your team questions. It can be as many as 150 people. The strict time limit is 5-minutes and your team will be stopped if you go over.

Pitch Night dress code is *business smart.*

Kindness note: pitching can be a real challenge for people yet to develop robust and confident public-speaking skills. Be mindful of team members that find this difficult. Be supportive and encouraging, they will still have to speak.



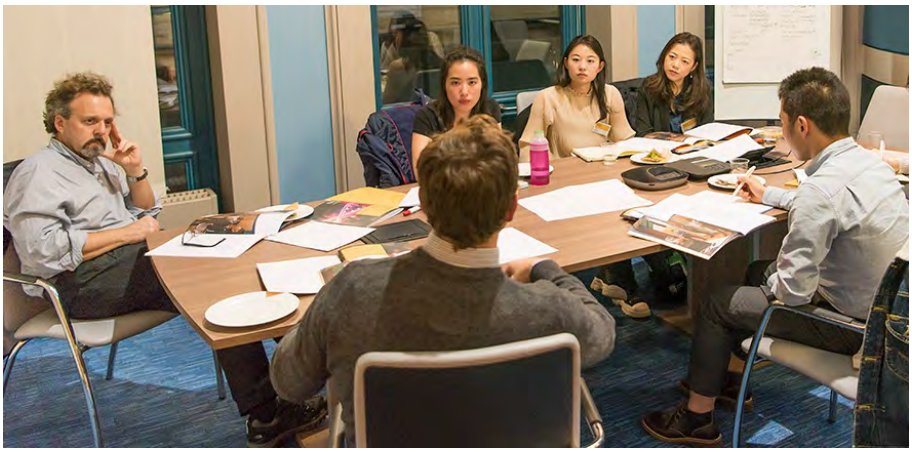
Supervisions

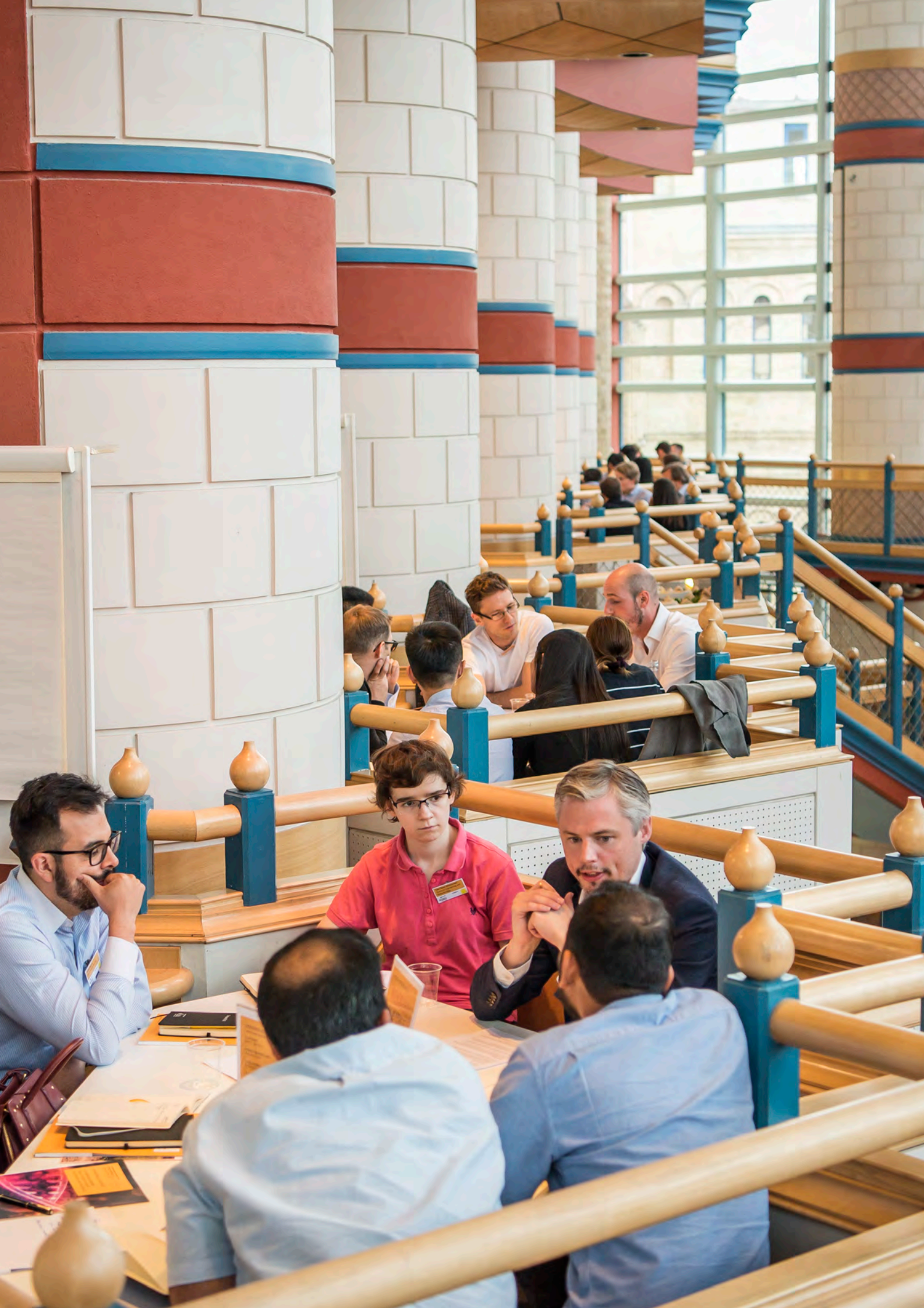
Role of the Business Supervisor

Supervisions are designed to help teams get to grips with exploring the commercial potential of your assigned projects. The teaching focus consolidates and extends on from lectures using a learning-by-doing approach. Supervisors share best practice and offer guidance on how to approach the tasks related to the assessments. They also write a short report for the management team after each supervision, which covers attendance, participation and substance. Supervisors also write feedback on your pitch, video and commercial feasibility report at the end of the programme.

Supervision format

Length	Supervisions usually last around 2-hours *i.e.* 7- 9 pm.
Evening work	Use evenings whenever possible as many people are either in the lab, busy with research or attending lectures in the daytime.
Frequency	The first supervision should happen close to the start of the programme, after the you have defined the project scope using a project initiation document (PID). Supervisors should comment and work with their team to understand the goals. The remaining two supervisions can be midway then towards the end of the programme. The *team communicator* will coordinate the three dates with the supervisor so workflow targets can be met.
Attendees	All students in the team are expected be present (in person or online) for the supervision. Inventors are not present.
Supervision venues	At present, supervisions are a hybrid of in-person (with facemasks) and online. There is restricted access to the CJBS building for the moment, although we hope the situation will improve considerably in the new year.





Supervision 1: technology and opportunity evaluation

Post PID	Review and agree on the content shared in the PID.
Opportunity evaluation	Evaluate the business opportunity by looking at the potential market for the application. What is the actual business opportunity? What is the problem the idea will address and for whom? Who are the customers? What do they really need? Do we know this or are we making assumptions? What other problems do these customers face that could be addressed? What needs to happen for these customers? What questions are you planning for starting primary and/or secondary market research? Who are your KOLs?

Supervision 2: developing the business proposition

Review progress	Review how you have defined the business opportunity and value proposition, routes to market, market research and potential customers.
First draft of report	Share an early draft of your report. SWOT analysis - what are the strengths, weaknesses, opportunities and threats to the application of the technology? Competition - what competitor technologies exist that do the same thing or substitute technologies? How much do we know? What do you need to find out and how? Customers - what are customers doing now to address this problem? How likely are they to change to another solution? What factors will impact on their decision to adopt your product? Suppliers - how does the supply chain look? What could create a bottleneck in delivering the product on time and scale? Replication - how easy it is for someone else to copy? IP protection, know-how, complexity of integration, cost of setting up etc. What else is in your favour or is a threat? What is the optimal business model? Can you disrupt anything on those models? What advantages are you going to bring? Who are the potential partners that can help take the application to market? Manufacturers, R&D partners, corporations, NGOs, governments, Angels, VCs etc. Who are the early adopters that can validate the market need?

Supervision 3: refining the research and analysis

Tidy-up	Review your research, look for gaps in the work and help them refine the analysis. • What is the missing information? • What is the picture for commercialisation in short, mid and long term? • Is the customer VP clear and does it fit the business model? If not what is missing? • What are the most important issues the inventor should be aware of?
Report	Discuss a late stage draft of the report.
Pitch	Discuss content for the pitch (everyone has to speak) and review pitch deck.
Video	Review storyboard ideas.

Smooth operations

Expectations

All participants should have the best possible experience on this programme. To help us all achieve this, there are expectations we encourage you to live by whilst with us.

- Be mindful of time restrictions i.e. home-life demands that others in your team might have.
- Develop a good working relationship with your supervisor. Many of our supervisors are external to the University with their own daytime careers.
- Never cancel a planned supervision or meeting at short-notice.
- Develop a balanced relationship with your inventor(s). Avoid getting wrapped up in the technology or trying to fix their technological problems. You will sacrifice time if you do.
- Focus on the application of the lectures to the commercialisation strategy for your project.
- Be a courteous and professional team member. Responding quickly to one another when messages come in will do a lot to maintain respect and team motivation.
- Some teams have carried on with their projects and founded companies or had employment offers linked to their experience on the programme. Avoid getting side-tracked for now.

Eligibility for Certificate of Complete

Students who successfully complete the programme are eligible to receive a *CJBS Certificate of Completion*. To 'complete' means you are expected to **attend all lectures** (unless you have made a prior excuse for absence to the management team), contribute wholly to the **team effort**, **attend all supervisions**, **take part on Pitch Night** and **submit your report and video by the deadline**.

You must complete EnterpriseTECH and be awarded this certificate if you are considering applying for EnterpriseTECH STAR 2021.

Confidentiality

Technologies evaluated as part of the programme will be in their early stages of development. This means a high level of confidentiality is essential to ensure the Intellectual Property belonging to the inventor is properly protected.

We expect all participants to sign a Confidentiality Disclosure Agreement. These are used widely across the University of Cambridge.

Be vigilant with electronic materials relating to your projects. Details must not be discussed with anyone other than people engaged on the programme. This extends to lab mates, course directors, staff, supervisors and other inventors or supervisors etc.

Plagiarism

Plagiarism can arise from all sources and media *i.e.* text, illustrations, music, mathematical derivations, computer code; material downloaded from websites or drawn from manuscripts or other media; published and unpublished material. Acceptable means of acknowledging the work of others (by referencing or otherwise) is an essential component of any work submitted for assessment.

Read more: www.plagiarism.admin.cam.ac.uk

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