PhD by Enterprise Programme Handbook

Addendum to Faculty PGR Handbooks/Webpage Resources

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Note: This handbook *contains information specific to the PhD by Enterprise. This PhD programme has a defined eProg pathway with specific cohort milestones and training. The programme is led by Unit M and supported by the Faculty Doctoral Academy for your registered school.*

This handbook supplements the standard faculty handbooks, available via the Faculty Doctoral Academies. Please refer to your faculty's handbook/web resources for comprehensive details on university-wide policies and procedures; this guide is intended to complement, not replace, those resources. This guide outlines your specific PhD by Enterprise programme structure and also assessment and examination model. During your PhD it is likely that you will receive information or instructions from your registered Doctoral Academy and from Unit M. This may be confusing to begin with, but to avoid confusion don't hesitate to ask. Your first point of contact for queries should always be your Doctoral Academy, then your Programme Manager, Professor Aline Miller (aline.miller@manchester.ac.uk). They will support you directly or, where appropriate, direct you to Unit M or liaise with Unit M on your behalf.

Further information available through your Faculty Doctoral Academy can be found here:

Faculty of Biology, Medicine and Health

Faculty of Humanities

Faculty of Science and Engineering

Introduction

Welcome to The University of Manchester and to the PhD by Enterprise programme. Established in 2025, this innovative doctoral pathway has been designed to deliver excellence in both traditional doctoral training and entrepreneurship. As a PhD by Enterprise Postgraduate Researcher (PGR), you will benefit from a distinctive blend of academic research rigour and entrepreneurial training and mentorship, intended to support your development both as a researcher and as an entrepreneur.

Throughout the programme, you will have access to dedicated entrepreneurial mentorship and tailored training opportunities, helping you to cultivate the skills and mindset required to translate research into real-world impact with purpose. We are committed to fostering an environment where your academic ambitions and enterprise aspirations can thrive together.

We wish you every success as you embark on your journey. We hope your time on the PhD by Enterprise programme is both challenging and rewarding, and that you leave equipped to become a leader in both research and innovation, and perhaps also found your own societal or commercial venture along the way.

Professor Aline Miller

Associate Vice President (AVP) for Enterprise & Programme Director

1. Programme Structure

The PhD by Enterprise programme is 4 years in duration (or part-time equivalent).

The balance between research and enterprise activity for your PhD by Enterprise is ~80:20. This same split is recommended, therefore, for the time allocated to research and entrepreneurship throughout the duration of your programme. For example, assuming an average 35-hour working week, you are recommended to spend ~7 hours on entrepreneurship activity and the remainder on research. This may vary from week to week.

> Year 1 covers a variety of broad training such as induction, health and safety, academic literacy, plagiarism, project management, and guidance on the preparation of your Literature Review and Continuation report (also known as Annual Review). You will receive training in your research project to build your knowledge and demonstrate a clear understanding of your research field, refining both your research question and value proposition. You will receive foundational enterprise training to support you developing your entrepreneurial mindset through Unit M, powered by the Masood Entrepreneurship Centre. This will include taking the online training course Get Started and one Entrepreneurship Unit selected with guidance from the advisory team depending on any previous experience. You will also be provided with opportunities to immerse yourself in the entrepreneurship community through participation in researcher workshops, lunch and learn sessions and startup spotlight networking events. During your first year, you will review the relevant research and patent literature, identify key research methodologies, undertake initial data collection or pilot studies, and develop a project plan for the remainder of your PhD by Enterprise programme. This process will be guided by your academic supervisors and, where appropriate, in consultation with the University Tech Transfer Office, the Innovation Factory, regarding any IP disclosures and the timing of protection.

> Year 2 includes building on your preliminary research findings where you will advance, collect and analyse data, interpret results, and adapt your approach based on your findings. Your entrepreneurial training will continue as you begin to explore your business ideas through the Researcher Launchpad Programme run by the Masood Entrepreneurship Centre supported by training in business creation and development. You may also refine or adjust project plans in response to feedback from market exploration and customer discovery work undertaken through the Launchpad programme. Any such adjustments should be made in close consultation with your supervisory team, who must be actively involved in and approve any significant changes to the direction or scope of your project.
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> Year 3 will focus on progressing your research with attention given to advancing ideas and building proof of principle work towards a minimum viable proposition. Over the course of the year, the majority of data will be collected, and you will be moving towards the near-final stages of analysis and research work. Any gaps in models and experiments will be identified and a plan made to fill them. IP discussions will be underway with the Innovation Factory with a view to having an IP protection and exploitation plan in place, where appropriate. You will also join an early-stage accelerator programme, such as the Venture Builder to focus on market validation, and early-stage business planning culminating with a demo day to pitch to investors. This will give you broader business acumen needed to transform your disruptive idea into world-changing ventures. Venture Builder
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> Year 4 will focus on thesis preparation and submission, and preparation to found a business and/or preparation for employment, depending on where your interests lie. You will finalise your research and work to articulate your original contribution to the literature. IP exploitation will be mapped out, any patents will be in draft, filed or granted, where appropriate. Entrepreneurial training will involve a follow-on accelerator programme such as the Deep Tech Innovation Programme run by Unit M, or equivalent sector-focused programme. Your focus will be on honing your critical thinking and ensuring alignment with research goals and building your work into a coherent thesis, demonstrating a significant, novel contribution to knowledge in your chosen field. This will form 80% of the final PhD thesis. The remaining 20%, i.e. one chapter, will include a detailed business plan, including market validation, financial projections, and go-to-market strategies. Your PhD thesis must be submitted within 4 years.Deep Tech Innovation Programme

From an entrepreneurship perspective, your training will be delivered by Unit M via the Masood Entrepreneurship Centre (MEC). At the start of each academic year, the Programme Director will work together with you and your supervisor to design a personalised training plan that aligns with your research and enterprise goals and stage. As you progress through your PhD, you will meet with your cohort and Programme Director on a quarterly basis to review your enterprise progress, ensure ongoing engagement with your mentor and training activities, and identify any emerging requirements or challenges. During each meeting, you can expect to discuss: your participation in entrepreneurship training and workshops; progress on your business plan and enterprise component of the PhD; feedback received from your mentor and any actions taken; any barriers to enterprise development, including resource needs or market feedback; alignment of your enterprise activities with broader research milestones; identification of risks and development of mitigation strategies if concerns are raised. Should significant risks or persistent issues be identified, these will be escalated to your supervisory team and, if needed, the Faculty Doctoral Academy for further review.

Throughout your PhD, you will also have access to a vast range of professional and transferable skills training and development courses, offered across the University, which can be tailored to your needs. These are in addition to the research and entrepreneurship training you will receive as part of the PhD by Enterprise Programme. You are encouraged to undertake a range of professional development and research specific skills training and will undergo a training needs assessment with your supervisors at the beginning of each year.

2.Supervision

Supervision for PGRs adheres to the University Supervision Policy, ensuring all standards and expectations are upheld throughout your programme.

In addition to your supervisory team, you will be assigned a dedicated Unit M Expert Mentor, appointed by the Programme Director in consultation with your supervisor. The mentor's role is strictly advisory, focusing exclusively on guiding the growth of your personal entrepreneurial mindset and offering advice on shaping your enterprise component and business plan. They do not participate in supervising or assessing your research activities, and their advice is not evaluative or exhaustive; instead, they offer practical insights and feedback to help enhance your entrepreneurial skill base and the commercial aspects of your thesis and enterprise project. You are required to meet with your mentor at least quarterly and the support is designed to foster your entrepreneurial growth, maintaining a clear distinction from academic supervision and assessment responsibilities. If there are any issues arising with your mentor, you should raise these immediately with your supervisors and/or the Programme Director.

3.eProg

During your time with us your progression will be monitored and coordinated through the eProg system. This serves as the central platform for tracking milestones, training participation, and overall engagement ensuring you're working steadily towards submitting your thesis within your expected timeframe. It is an interactive tool for both you and your supervisor to be used from the point of registration to examination. Here, the PhD by Enterprise pathway clearly outlines the specific milestones and expectations for your programme, covering both research and enterprise components. Your attendance and active participation in these training sessions, as well as your engagement with the broader entrepreneurial network, will be monitored to ensure you are making satisfactory progress. Any causes for concern or recommendations for additional support will be flagged for follow-up support. eProg facilitates the annual assessment of your individual research skills and training needs, ensuring these are closely linked to your professional and personal development and supported throughout your PhD by Enterprise journey. eProg also monitors and records the submission to PhD examination process from the point at which you submit the Notice of Submission form to the point at which your final award is ratified.eProg system

It is essential that you and your supervisors actively engage with eProg and complete each compulsory milestone by the specified deadlines to ensure successful progression through the PhD by Enterprise programme.

Full details and guidance on how to use eProg can be found in your Faculty PGR handbook (see page 1) and further information on eProg training can be found here.

4.Assessing your Progress

As a PhD by Enterprise PGR, you must comply with the University of Manchester's policy on progress and review, which sets out the procedures, milestones, and expectations for successful progression.

Key progression milestones are determined primarily by the Faculty you are based in, with additional Enterprise specific milestones, such as engagement with training units and attendance at innovation events. Towards the end of your first year, you will participate in a formal, independent progression review that evaluates both your research and enterprise development. This typically occurs after nine months. You will submit a report that will be assessed by an oral examination in accordance with university policy. The assessment will be undertaken by two assessors independent of your supervisory team, one of whom will have some form of enterprise experience. Your review panel will reach an agreement on the recommendation for continuation on your programme. This will be formally notified within eProg and there are a number of outcomes including continuation to the second phase of your PhD programme, transfer and submit for an MPhil award or withdraw from the degree.

You will also have an end of year 2 and a year 3 review where you need to show sufficient progress in each research and enterprise element to remain on the PhD by Enterprise programme. Each annual review will be conducted under Faculty arrangements to consistently monitor your progress and must contain progress on both your research and enterprise elements to unlock the recommendation for progression. The enterprise aspect of these reviews will incorporate feedback from Professor Aline Miller, the Programme Director, ensuring that your progress in entrepreneurial training and development is assessed in conjunction with your academic accomplishments.

5. PGR Support

If you experience health or personal difficulties impacting your studies, you are strongly encouraged to seek advice from your supervisor as your first point of contact. You will also receive dedicated pastoral support through an allocated advisor who is independent of your supervisory team and available to provide guidance and support throughout your programme. In addition to the support provided by your supervisor, Programme Director, and independent advisor, a broad range of supplementary support services are available to you as a PhD by Enterprise PGR. Your Faculty Doctoral Academy provides dedicated support for postgraduate researchers. In addition, the University offers wellbeing services, counselling, and mental health support, all accessible through the Student support team. You can also make use of academic skills workshops, peer-support networks, and tailored guidance from the Researcher Development Team. For international students or those with specific needs, further assistance is available, including visa advice, disability support, and language support. These resources are designed to provide comprehensive guidance and support throughout your doctoral studies.

Should you encounter health issues or exceptional mitigating circumstances, you may request an interruption to your studies. This process is managed under the University's Change of Circumstance policy, and guidance is available through your Faculty Doctoral Academy.

6. Thesis Requirements

The programme will culminate with submission of a thesis, and must follow the University's Presentation of Theses Policy, which outlines the formatting and structural requirements for all doctoral submissions. Your thesis has a strict 80,000-word limit and must include novel research, as per a standard PhD degree, and must also include an enterprise or commercialisation narrative, ensuring that a business plan is incorporated into a dedicated chapter as specified in 4.7 of the Presentation of Theses Policy.

An example structure is provided in Appendix A along with guidance on what to include. Candidates may adapt the format as required, but the chapter should, as a minimum, address: the problem and market opportunity; product/service description and IP position; market analysis and customer validation; financial projections; and go-to-market strategies.

If either the research or enterprise component fails to meet the required standards for the award, then you will have the opportunity to resubmit for an MPhil degree or move to exit the programme.

If you have any questions about how to include your business plan or use the template, your supervisors, Unit M Mentor and/or the Programme Director are available to assist you.

7. Examination

As a PGR undertaking the PhD by Enterprise pathway, your examination will follow the University's Examination of Doctoral Degrees Policy. However, for this specific pathway, the examination panel will consist of two external examiners, one academic (who will lead the examination) and one with proven entrepreneurial experience, along with an internal examiner who, ideally will have entrepreneurial understanding. In accordance with university procedures, an independent chair may also be required to oversee the examination process.

If you have any queries about the examination or require clarification regarding the panel composition, please consult the Examination of Doctoral Degrees Policy or contact your Faculty Doctoral Academy for further guidance.

8.1 Examiner roles for the PhD by Enterprise

There is a clear delineation of examiner roles for this programme, distinguishing academic and enterprise elements. These are highlighted in the table below:

Table 1. The delineation of roles of the different examiners involved in the PhD by Enterprise final examination.

Role	Primary focus	Indicative responsibilities
Academic external examiner	Leads the examination of the doctoral research contribution.	Assesses originality, significance, methodological rigour, depth of scholarship, critical analysis, coherence of argument and fitness for the award of PhD. Leads questioning on the research chapters and ensures the examination remains aligned with University doctoral standards.
Entrepreneurial external examiner	Provides expert judgement on the enterprise component.	Assesses the credibility and quality of the business plan and/or enterprise narrative, including problem definition, market insight, customer or stakeholder validation, value proposition, business or impact model, IP and regulatory awareness, risk, feasibility, route to market and reflective learning. The entrepreneur examiner does not replace the academic external examiner and is not expected to judge disciplinary originality beyond their area of expertise.
Internal examiner	Ensures institutional standards and coherence across the examination.	Contributes to both academic and enterprise questioning as appropriate, ensures University procedures are followed, supports integration of the panel's judgements and helps ensure that the final recommendation is robust, fair and consistent with relevant policy.

Role	Primary focus	Indicative responsibilities
Independent chair	Oversees process where required.	Ensures the examination is conducted in a robust, fair and unbiased way, and in accordance with University requirements to maintain and enhance the University's reputation for academic excellence. The chair does not normally examine the thesis or contribute to the academic judgement.

8.2 Criteria for appointing the examiners for the PhD by Enterprise

The criteria for appointing the examiners must follow The University of Manchester's Nomination of Examiners and Independent Chairs for Postgraduate Research Degree Examinations Procedure which provides information on the appointment criteria, restrictions and regulations for the external examiner focussing on the research element, the internal examiner and where needed, an independent chair. *Nomination of Examiners and Independent Chairs for Postgraduate Research Degree Examinations Procedure*

If you are reading a printed version of this document, you should check below to ensure you have the most up to date version:

(https://documents.manchester.ac.uk/display.aspx?DocID=7444).

Here, additional information pertaining to the appointment of the entrepreneurial external examiner is included.

The entrepreneurial external examiner must:

- have demonstrable experience in venture creation, commercialisation, investment, innovation leadership, technology transfer, social enterprise or equivalent enterprise practice.
- have an understanding of the sector relevant to the candidate's sector, technology area or route to impact.
- hold a postgraduate research degree at the level they are examining, or have equivalent professional experience.
- have experience of working within a university innovation ecosystem, or experience in translating innovation into practice.

The external examiner must not:

- have collaborated with or have given any substantive advice to the candidate on work relating to the thesis to be examined (except in the case of a resubmitted thesis);
- be either a current or former member of staff of The University of Manchester unless at least five years have elapsed since they relinquished the post;
- be a current visiting member of staff at the University of Manchester;
- be a former higher degree student of The University of Manchester unless at least six years have elapsed since the degree was conferred;

- normally be invited on a regular basis (more than once a year) to examine postgraduate research degrees at The University of Manchester.

8. Appendix A

Business Plan: Guidance on Structure and Content

This appendix provides guidance on the structure, content and expectations for the enterprise component of the PhD by Enterprise thesis. It is intended to support Postgraduate Researchers (PGRs), supervisors, mentors and examiners by setting out what a credible, PhD by Enterprise business plan and enterprise narrative chapter should look like.

The enterprise component forms part of the doctoral thesis and must be grounded in, and clearly linked to, the underlying research, and demonstrate analytical rigour and critical reflection. The enterprise component is not assessed as a standalone business plan and does not require the creation of a live company. Instead, it is assessed in the round with the research component but within the enterprise component you should evidence progress on the five intended learning outcomes below.

Intended Learning Outcomes

Through the enterprise component, you should be able to demonstrate that you can:

- Translate research outcomes into a credible real-world application or opportunity;
- Critically analyse markets, users, stakeholders and routes to impact;
- Apply appropriate entrepreneurial, commercial or innovation frameworks;
- Evaluate feasibility, risk, uncertainty and ethical considerations;
- Reflect on the relationship between academic research, enterprise activity and impact.

You are not required to use a fixed template for the business chapter, provided that your enterprise chapter clearly addresses the required elements and is appropriate to the nature, maturity and context of your enterprise project. The guidance on chapter structure below is illustrative rather than prescriptive. The bullet points outlined can be used as a PGR/examiner checklist, noting the points below need to be covered, but not necessarily in this structure.

The thesis as a whole must comply with the University's Presentation of Theses Policy and not exceed 80,000 words. The enterprise chapter should be concise and aligned with the specific requirements of your project. As a general guideline, the division between research and enterprise content should reflect an approximate 80:20 ratio, so the business chapter's word count ought to be proportionate to this balance, i.e. the business chapter should be no more than 16,000 words.

Example Business Chapter Structure

The headings below offer an illustrative example of a typical structure for the enterprise chapter. This format is not prescriptive and does not need to be followed strictly; you are welcome to adapt, combine or reorder sections as appropriate to the specific requirements and context of your project. Nonetheless, it serves as a comprehensive guide to the types of content that should be considered for inclusion.

Executive Summary

- A concise overview of the opportunity, its basis in the research, and the proposed route to impact.
- Should be accessible to a non-specialist reader while accurately reflecting the academic foundations of the work.

Problem & Market Opportunity

- Summary of the relevant research findings underpinning the enterprise opportunity.
- Explanation of the problem, need or challenge being addressed.
- Justification for why this opportunity arises from the research and why it matters.

Product/Service Description and IP Position

- Description of the product, service, process or innovation.
- Clear articulation of the value created and for whom.
- Explanation of how the proposal differs from existing solutions or practices.
- Consideration of intellectual property position and strategy (where applicable), including University IP, licenses and freedom-to-operate.
- Awareness of regulatory or legal based requirements.
- Discussion of ethical, societal and responsible innovation considerations.

Market Analysis and Customer Validation

- Identification of target users, customers or beneficiaries.
- Analysis of market size, structure and dynamics, where relevant.
- Evidence of engagement, validation or discovery activities (e.g. interviews, pilots, benchmarking).
- Consideration of non-market stakeholders where appropriate (e.g. public sector, third sector, policy contexts).
- Description of validation activities undertaken (e.g. prototypes, pilots, user testing, partnerships).
- Critical evaluation of outcomes and learning.
- Reflection on how evidence has informed iteration or decision-making.

Competitive Landscape

- Analysis of existing or emerging alternatives.
- Critical discussion of differentiation, positioning and limitations.
- Reflection on assumptions and uncertainties in the analysis.

Business Model & Financials

- Explanation of how value would be created, delivered and captured (financial or otherwise).
- Indicative revenue, funding or sustainability model, where relevant.
- Clear distinction between evidence-based assumptions and speculative elements.

Go to Market Strategy

- Outline of the steps required to progress the opportunity beyond the PhD and into an enterprise.
- Consideration of resources, partnerships, team, skills and timelines.
- Recognition of dependencies and constraints.

Regulatory, Ethical & Risk Considerations (if any)

- Identification of key risks (technical, market, regulatory, financial, ethical).
- Discussion of mitigation strategies and residual uncertainty.
- Honest reflection on limitations of the proposed approach.

Reflection and Next Steps

- Critical reflection on the relationship between the research and the enterprise activity.
- Discussion of what has been learned through engaging in enterprise as part of the PhD.
- Reflection on pathways to impact considered.
- Proposed next steps with the enterprise component and where appropriate, proposed exit strategy of any venture formed.

Academic Expectations and Level

Examiners will expect the enterprise component to demonstrate:

- Doctoral-level criticality rather than promotional or persuasive writing;
- Clear use of evidence, theory, frameworks or models where appropriate;
- Transparency about assumptions, uncertainty and incomplete information;
- Coherence between the research contribution and the enterprise narrative;
- Evidence of hypothesis-driven market validation;
- Methodological rigour in commercial analysis;
- Reflexivity regarding the role of the researcher as an entrepreneur or innovator.

Use of Appendices and Confidential Material

- Detailed financial tables, extended market data or technical schematics may be placed in appendices where appropriate.
- Commercially sensitive material should be clearly identified and discussed with supervisors, and/or the Innovation Factory, in advance of submission.
- Guidance on embargoes or restricted access should be sought from the Faculty Doctoral Academy if required during the submission process.