THE UNIVERSITY of EDINBURGH
College of Science & Engineering

Proposal for New Degree Programme

Stage 1

Contents

OVERVIEW OF PROGRAMME

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ABOUT THE PROGRAMME		
Title of programme	PhD with integrated study in Robotics and Autonomous Systems	
Intended Award	PhD	
Alternative awards	PGDip, PGCert, MSc by Research	
School	Informatics	
Programme Director	Dr. Michael Mistry	
Programme start dates	01/09/2019	
SCQF level of highest award	12	
Total credit value of programme ***(for highest award)***	720	
Partner institution(s) if any	Heriot-Watt University	
Mode of delivery ***(Please ✓ those which apply to this programme)***	On campus	X
	Online	
	Blended learning	
	FT	X

	PT	
	Intermittent	
Expected length of programme	FT	4 years
	PT	
	Intermittent	

Description of the programme and its structure (maximum 150 words)

The 4-year PhD programme with integrated study in Robotics and Autonomous Systems provides high-quality, responsible, cohort-based training with three hallmarks that distinguish our students: i) a foundation of technical training broadened through ii) international training through placements at world-renowned institutes, and iii) innovation training supported by our extensive network of industrial and academic Project Partners. The 1st year focuses on building a solid foundational knowledge through a flexible technical training programme leveraging the Edinburgh Centre for Robotics's research strengths. Year 2 further develops cohort cohesion via a real-world Group Project and ongoing Gateway and #Cauldron events. Year 3 provides an opportunity for placement with industry or an international academic partner. Year 4 focus on finishing the PhD work and includes further training on innovation readiness.

Career, employability and opportunities for continuing professional development.

It is estimated that the application of advanced robotics could generate a potential worldwide economic impact of $1.7-4.5 trillion by 2025 per year by 2025 (McKinsey). Our PhD programme is well positioned to supply the UK workforce in this growing area, through strong links with industry, its extensive CDT-RAS Project Partners network and a training emphasis on 'innovation-ready' graduates. Our students have the opportunity to grow into industrial leaders of tomorrow through direct experience and company placements, as well as, through the programme's extensive support for commercialisation and start-ups.

BUSINESS CASE

This section should be used to outline the business case for the proposed programme. Before completing this section market research should have been undertaken.

STRATEGIC PLANNING, RECRUITMENT & COMPETITOR ANALYSIS	
Programme Title	PhD with integrated study in Robotics and Autonomous Systems
Programme Proposer	Dr. Michael Mistry
Strategic Planning	Expanding doctoral training is a strategic goal of the university and the college. The proposed program is in an area of high demand and is linked to a proposal for a EPSRC Centre for Doctoral Training, which would provide funding of approximately £3.3M (plus industry sponsorships) for an intake of 9 students per year over 5 years.
Recruitment *Please provide a detailed commentary on your marketing and recruitment strategy.*	Demand for PhD graduates in Robotics and Autonomous systems is currently extremely high (see Section 1). Recruitment and marketing for this program will be managed in the same way as our current CDT in RAS, which last year had 214 applicants for 17 places. Existing PhD programs (such as the 3-year PhD in IPAB) will benefit from having such a high profile, well-funded program. Resources will be shared with existing PhD students to the extend allowed by the funder. Possible careers include academia and industry, see Section 1.
Competitor Analysis *A competitor analysis report provides a better understanding of the marketplace and competition, from the going rate for tuition fees to the unique selling points*	We mainly see ourselves competing with the top PhD programmes in the US, including Stanford, MIT, CMU, University of Washington. The proposed programme is more similar to a US PhD, given its 4-year duration and its integrated taught component. We would expect this to strengthen our international competitiveness. In the UK we're aware that Oxford, Bristol, Imperial College London, and Lincoln each have Robotics-themed CDT bid under review. In comparison to these, our programme focuses ‘safe interaction’, levering the research strengths of the existing Edinburgh Centre for Robotics and the National Robotarium.

and marketing strategies of competitor programmes.				
Competitor Fees *Provide the fee structure (in British pounds) of three competitors, preferably those mentioned in the competitor analysis. These may be UK or International competitors.*	Institution	Programme	Fees	
			Home	International
	MIT	PhD in Computer Science	$49,892	$49,892
	University of Washington	PhD in Computer Science	$18,852	$32,760
	University of Oxford	PhD in Computer Science	£4,260	£21,450

FEES AND COSTING		
Programme fees *Fees are expressed per academic year in British pounds. For PGT programmes, a Programme Costing Template will also be required for Fee Strategy Group.*	Home-Scotland / EU	
	Home-RUK	
	Overseas	
Fees for each new PGT programme are sent by College to the Fee Strategy Group (FSG) for review and approval. The FSG has developed a Programme Costing Template to give FSG insight into the anticipated profitability of a programme and where it sits within its market. The Fees Costings template, and guidance from FSG on filling out the template is included in the spreadsheet attached to the right.		 FSGProgrammeCostingTemplateFinalHS

Additional Programme Costs (PGR only)

Additional costs to the student should be noted and justified in the table below. These should consist of items that are over and above the basic provision that should be available to all students and should reflect the special additional costs associated with the specific programme of study. Individual items over £200 should be noted on a separate row.

Item	Cost	% of Total
Add rows as necessary		
Total:		100%

ANTICIPATED AND PROJECTED ENROLMENTS

What are the anticipated and projected enrolments over the next three years?

	Year 1	Year 2	Year 3
Home	7	7	7
International	2	2	2
Supporting Research What market research has been planned or completed to support the predicted student numbers?	These numbers reflect the past success of the existing RAS-CDT, including the increased industrial support and student sponsorships of the new CDT.		

PLANNING AND RESOURCES

New Courses	No new courses as we already have a CDT-RAS programme in place.
Facilities and Equipment	The PhD students will be accommodated in the Bayes Centre (and will also have desks allocated at Heriot-Watt). Robotics lab facilities will be provided through the existing Robotarium (at University of Edinburgh and Heriot-Watt)
Staff	Both administrative staff and teaching support staff for this programme will be funded by the accompanying EPSRC CDT grant. This CDT involves 50 supervisors, across two universities, which means the risk created by staff changes, retirements, sabbaticals is low.
Resource Sharing	This program will share resources with the existing PhD programmes in Informatics. Some resources sharing between CDTs at the college level is also anticipated. Course organizers of relevant courses have not been consulted, but we don't anticipate any problems, as the number of students in this program is small (9 per year).

COLLABORATIVE PROGRAMMES
Additional information is required for new programmes that are collaborations with external institutions or organisations which will result in a joint award and/or where taught components are shared. International partnerships must have a Memorandum of Understanding (MoU) in place before the programme can be approved by College. Should the proposal be progressed to Stage 2 a draft Memorandum of Agreement (MoA) will need to accompany the submission. Separate guidance is available for the development of collaborative programmes. http://www.ed.ac.uk/governance-strategic-planning/collaborative-activity/guidance-templates
This programme will be jointly undertaken with Heriot-Watt University, for which we already have an existing joint program in place (the existing RAS-CDT PhD).

CONSULTATION AND APPROVAL

Programme Title:	PhD with integrated study in Robotics and Autonomous Systems
Programme Proposer:	Dr. Michael Mistry

STAGE 1: CONSULTATION

Please confirm consultation with relevant stakeholders has taken place.

Stakeholder	**Yes**	**NA**
School Director of Professional Services	☐	☐
School Academic Administration Staff	☐	☐
Information Services (including Academic Support Librarians)	☐	☐
Student Body (SSLC/Student representatives)	☐	☐
Partner School Staff (E.G. Joint Programmes/shared courses etc)	☐	☐
Employers	☐	☐
Industry and Professional Bodies	☐	☐
External Consultation	☐	☐
Please note any other consultation		

Please provide a brief comment on the consultation process

Please provide a brief comment on the consultation process with External consultants

STAGE 2: SCHOOL BOARD OF STUDIES REVIEW AND APPROVAL

Confirmation of approval of the proposal at the School Board of Studies should be entered below.

Date of BoS:
Convener Name:
Comment and Approval (BoS Minute): *Please provide either a link to the minutes of the Board or a copy of the relevant text from the minutes.*

STAGE 3: HEAD OF SCHOOL REVIEW AND APPROVAL

Head of School: *Please print name*
Comment and Approval:
Signature:

STAGE 4: COLLEGE CURRICULUM APPROVAL BOARD REVIEW AND OUTCOME

Date of CCAB:	
Convener Name:	
Stage 1 Outcome (please select as appropriate)	
Permission to proceed to Stage 2	☐
Permission to proceed to Stage 2 with conditions	☐

Proposal rejected with recommendations	☐
Proposal rejected	☐
Comment:	

Document Control

Date approved: Start date:	Amendments:	Date for next review: April 2018
Contact name & role: Matt Elliot	Department: College Academic Affairs	Email: Matt.Elliot@ed.ac.uk
If you require this document in an alternative format please email: deanqa@exseed.ed.ac.uk		