Course Specification

MEng Robotics and Automation

Course Code: MENRA

2019/20

leedsbeckett.ac.uk

MEng Robotics and Automation

Material Information Summary for 2019/20 Entrants

Confirmed at 5th October 2018

General Information

Award   Master of Engineering Robotics and Automation

Contained Awards   Bachelor of Engineering with Honours Robotics and Automation
                                         Bachelor of Engineering Robotics and Automation
                                         Diploma of Higher Education Robotics and Automation
                                         Certificate of Higher Education Robotics and Automation

Awarding Body   Leeds Beckett University

Level of Qualification & Credits   Level 7 of the Framework for Higher Education Qualifications, with 120 credit points at each of Levels 4, 5 and 6 of the UK Credit Framework for Higher Education and 120 credit points at Level 7 of the UK Credit Framework for Higher Education (480 credits in total)

Course Lengths & Standard Timescales

The standard start date for Leeds Beckett University induction week is reproduced below and relates to the majority of students starting a course in September 2019. A proportion of courses have alternate start dates which are displayed on the online prospectus and additionally will be notified to the students concerned via the offer letter. Non-September starters will also have their start dates confirmed in their offer letters.

- 4 years (full time, campus based)
  Starts 23rd September 2019/ Ends June 2023

- 5 years (full time, campus based with a one year work placement)
  Starts 23rd September 2019/ Ends June 2024

- 8 years (part time, campus based)
  Starts 23rd September 2019/ Ends June 2027

- 9 years (part time, campus based with a one year work placement)

  Starts 23rd September 2019/ Ends June 2028

- 8 years (part time, block delivery)
  Starts 23rd September 2019/ Ends June 2027

Part Time Study	PT delivery is usually at half the intensity of the FT equivalent course, although there may be flexibility to increase your pace of study to shorten the overall course duration. Some modules may be delivered in a different sequence to that advertised within this Course Specification but the modules offered within each level are as advertised. Please note that the work placement option is not available to PT students.
Location(s) of Delivery	Headingley Campus, Leeds (plus location of work placement, if applicable)
Entry Requirements	Admissions criteria are confirmed in your offer letter. Details of how the University recognises prior learning and supports credit transfer are located here: http://www.leedsbeckett.ac.uk/studenthub/recognition-of-prior-learning/
Course Fees	Course fees and additional course costs are confirmed in your offer letter

Timetable Information

Timetables will be made available to students during induction week via:

i)   The Student Outlook Calendar
ii)   The Student Portal
iii)   The Leeds Beckett app

Any difficulties relating to timetabled sessions can be discussed with your Course Administrator.

Policies, Standards and Regulations   http://www.leedsbeckett.ac.uk/public-information/

There are no additional or non-standard regulations which relate to your course

Key Contacts

Your Course Director	Dr. David Love
Your Course Leader	Dr. Mark Judge
Your Academic Advisor	L4: Dr. Mark Judge
	L5: Dr. Mark Judge
	L6: Project Supervisor
Your Course Administrator	Ms. Lisa Halmshaw

Placement Information

Summary   Leeds Beckett is dedicated to improving the employability of our students and one of the ways in which we do this is to support our students to gain valuable work experience through work-based placements. Our placement teams have developed strong links with companies, many of whom repeatedly recruit our students into excellent placement roles and the teams are dedicated to supporting students through every stage of the placement process. More information about the many benefits of undertaking a work placement, along with details about how to contact our placement teams can be found here:
http://www.leedsbeckett.ac.uk/studenthub/placement-information/

Length: Optional 30 week work placement undertaken between Year 2 and Year 3 (Level 5 and Level 6).

Location   Not specified

Professional Accreditation or Recognition Associated with the Course

Professional Body   N/A

How is Accreditation/ Recognition Achieved?   N/A

Course Accreditation/ Recognition Period   N/A

Course Overview

Aims

The aims of the programme are:

1. To facilitate the provision of a quality learning experience for each student that fosters engagement with their programme of study and promotes independent study and life-long learning.

2. To maintain a high quality, comprehensive and coherent curriculum focusing on the area of control and manufacturing, within the broader discipline of robotics that develops the underpinning principles of electrical and electronic engineering, management, entrepreneurship, digital literacy and offers a global appeal, informed by research, scholarly activity and practice to enhance each participant's career prospects.

3. To develop professionals with a sound understanding of both robotic and associated disciplines in Electronic and Electrical engineering, in a holistic approach and understanding the key features that link the two subject areas.

4. To encourage the creative and appropriate application of technology to promote innovation and enterprise through the research project whilst enhancing students' employability skills.

5. To promote ethical and eco business awareness and professionalism supported by a strong appreciation of industry focused skills and practice.

Course Learning Outcomes

At the end of the course, students will be able to:

1	… possess the core knowledge and understanding of scientific principles and methods necessary for robotics and control in the context of electronic and electrical engineering; enabling their appreciation of its scientific and engineering context, and to support their understanding of historical, current, and future developments and technologies.
2	… develop an ability analyse a system through appropriate tools, methods and techniques, developing appropriate quantitative solutions and communicate the results of those analyses in an form appropriate to both specialist and non-specialist audiences.
3	… be able to creatively design innovative solutions to problems including an investigation and identification of the appropriate legal, economic, social, aesthetic and environmental constraints where applicable.
4	… develop the skills to undertake projects to a professional standard by the consistent application and review of development, management and evaluation methods and techniques.
5	… have an understanding of the context of engineering knowledge; the characteristic tools, equipment, processes and products of the discipline of electronic and electrical engineering, and be able to use the technical literature and other information sources to develop that understanding over the course of their professional careers.

Teaching and Learning Activities

Summary

The delivery style will encourage independent and collaborative learning with fellow students, and supported by the academic staff. The students will have to develop many practical skills, and students are encouraged to develop their personal interest through individual research and option modules from Level 6. Many features of the robotics course include integrative projects which span a number of modules enabling a holistic view of how systems are designed and managed. A number of delivery methods will be used from guest lectures, residential weekends, group activities, online support and communication.

Students are made aware of the goal of independence in learning and are given explicit guidance on those aspects of their learning for which they are responsible. Key opportunities for students in this regard include the non-credit *Math and Physics Support* modules and Level 4 and 5, and the Level 6 *Work Placement* module. Many modules will also include induction sessions and all modules will include guidance on the studying of individual modules (usually through the module handbook and MyBeckett).

Scheduled sessions will include the use of lectures, seminars and tutorials: many of which will take place in or using specialist facilities. Advantage will be taken of both technology and supportive activities to ensure that effective learning takes place. Some of those supportive activities may strongly encourage the student to attend sessions that are not in themselves credit bearing, but which are designed to reinforce the concepts and skills introduced in the credit bearing modules.

All teaching activity will emphasise the engineering context, even where the module is being delivered by non-engineering staff or modules are shared with other courses. Wherever possible the learning activities will focus

on electronic or robotic systems, and the learning activities will include the use of simulations, role play, case studies, projects, practical work, work based learning, workshops, peer tutoring, self-managed teams and learner managed learning.

The research projects at Level 6 and Level 7 have been designed around practice-centred product development, enabling students to focus their energies in developing future thinking and practical solutions to their sphere of work or career aspirations. Students will be encourage to in these modules to move their focus outside the course, for instance in producing work accessible to engineering colleagues though publication in peer-reviewed literature.

Your Modules

(Correct for students progressing through the programme within standard timescales. Students who are required to undertake repeat study may be taught alternate modules which meet the overall course learning outcomes. Details of module delivery will be provided in your timetable).

Level 4 Core Modules (2019/20 for FT students and 2019/20 and 2020/21 for standard PT students)

Computer Systems Architecture

Computers in Engineering

Digital Electronics

Electrical & Electronic Principles 1

Engineering Design Project 1

Engineering Systems & Data Acquisition

Foundations of Maths & Physics 1 (non-credit bearing)

Level 5 Core Modules (2020/21 for FT students and 2021/22 and 2022/23 for standard PT students)

Electrical & Electronic Principles 2

Embedded Systems

Engineering Design Project 2

Instrumentation & Control

Operating Systems for Robotics

Robotics & Automation

Foundations of Maths & Physics 2 (non-credit bearing)

Level 6 Core Modules (2021/22 for FT students and

2023/24 and 2024/25 for standard PT students)

Advanced Manufacturing Technology

Engineering Cost & Management Accounting

Production Project (double module)

Level 6 Option Modules (delivery years as per Level 6 core modules above)

The following option modules are indicative of a typical year. There may be some variance in the availability of option modules. Students to take <u>two</u> of:

Engineering Control

Digital Signal Processing

Power Electronics

Industrial Networks

Level 7 Core Modules (2022/23 for FT students and 2025/26 and 2026/27 for standard PT students)

Dissertation (double module)

Project Management (year 4)

Research Practice

Level 7 Option Modules (delivery years as per Level 6 core modules above)

The following option modules are indicative of a typical year. There may be some variance in the availability of option modules. Students to take <u>two</u> of:

Eco Engineering

Engineering Systems Control

Intelligent Systems & Robotics

Lean & Agile Engineering

Network & Convergence Architectures

Simulation & Modelling

Assessment Balance and Scheduled Learning and Teaching Activities by Level

The assessment balance and overall workload associated with this course are calculated from core modules and a sample of option module choices undertaken by a typical student. They have been reviewed and confirmed as representative by the Course Director.

A standard module equates to 200 notional learning hours, which may be comprised of teaching, learning and assessment, placement activities and independent study. Sandwich placement years spent out of the University are not be included in the calculation unless they are credit bearing and attributed to a level of the course. Modules may have more than 1 component of assessment.

Assessment Balance	Level 4	Level 5	Level 6	Level 7
Examination	31%	22%	22%	-
Coursework	53%	75%	62%	86%
Practical	17%	3%	16%	14%
Overall Workload				
Teaching, Learning and Assessment	312 hours	222 hours	175 hours	122 hours
Independent Study	888 hours	978 hours	1025 hours	1078 hours
Placement	-	-	-	-

Learning Support

If you have a question or a problem relating to your course, your Course Administrator is there to help you. Course Administrators works closely with academic staff and can make referrals to teaching staff or to specialist professional services as appropriate.

They can give you a confirmation of attendance letter, and a transcript. You may also like to contact your Course Rep or the Students' Union Advice team for additional support with course-related questions.

If you have any questions about life at our University in general, call into or contact the Student Hub on either campus to speak to our Student Experience Team. This team, consisting of recent graduates and permanent staff, are available to support you throughout your time here. They will make sure you have access to and are aware of the support, specialist services, and opportunities our University provides.

 There is a Student Hub on the ground floor of the Rose Bowl at City Campus and one in Campus Central at Headingley. You can also find the team in the Gateway in the Leslie Silver Building at City Campus. The telephone number is 0113 812 3000, and the e-mail address is StudentHub@leedsbeckett.ac.uk.

Within MyBeckett you will see two tabs (Support and Opportunities) where you can find online information and resources for yourselves. The **Support** tab gives you access to details of services available to give you academic and personal support. These include Library Services, the Students' Union, Money advice, Disability advice and support, Wellbeing, International Student Services and Accommodation. There is also an A-Z of Support Services, and access to online appointments/registration.

The **Opportunities** tab is the place to explore the options you have for jobs, work placements, volunteering, and a wide range of other opportunities. For example, you can find out here how to get help with your CV, prepare for an interview, get a part-time job or voluntary role, take part in an international project, or join societies closer to home.