Template C4

Kingston University London

Programme Specification

Title of Course: *MSc Electronics and Robotics*

Date first produced	03/05/2024
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Version number	5
Faculty	Faculty of Engineering, Computing and the Environment
School	School of Engineering
Department	Department of Mechanical Engineering
Delivery Institution	

This Programme Specification is designed for prospective students, current students, academic staff and employers. It provides a concise summary of the main features of the programme and the intended learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if they take full advantage of the learning opportunities that are provided. More detailed information on the learning outcomes and content of each modules can be found in the course VLE site and in individual Module Descriptors.

SECTION 1: GENERAL INFORMATION

Award(s) and Title(s): ***Up to 10 pathways***	MSc Electronics and Robotics
Intermediate Awards(s) and Title(s): ***There are 4 Intermediate awards for each pathway***	MSc Electronics and Robotics Studies PGDip PGCert
Course Code ***For each pathway and mode of delivery***	PPELR1ELR20 PFELR1ELR20
UCAS code ***For each pathway***	

RQF Level for the Final Award:	
Awarding Institution:	Kingston University
Teaching Institution:	
Location:	Roehampton Vale
Language of Delivery:	English
Modes of Delivery:	Full-time With Professional Placement Part-time
Available as:	Full field
Minimum period of registration:	Full-time - 1 With Professional Placement - 2 Part-time - 2
Maximum period of registration:	Full-time - 2 With Professional Placement - 3 Part-time - 4
Entry Requirements:	Applicants for this course are normally required to have a good honours degree in a relevant engineering discipline. Exceptionally applicants with substantial relevant industrial experience who do not have an honours degree may be considered. Such applicants must demonstrate strong motivation to complete the course and the ability to work at this level. International applicants are required to satisfy the Admissions Officer that they have reached an equivalent academic standard as those required for home students.

	Each application is assessed on an individual basis and may be subject to additional requirements, such as undertaking short course(s), work experience and/or English language qualification(s). Meeting minimum entry requirements does not automatically guarantee a place. English language requirements Non-UK applicants will usually be required to provide certificated proof of English language competence before commencing their studies. For this course, the minimum requirement is Academic IELTS of 6.5 overall, with 6.0 in Writing and 5.5 in Reading, Listening and Speaking. Other equivalent qualifications will also be considered. For further information, including other acceptable qualifications (such as WAEC and NECO from Nigeria and Ghana, and Indian CBSE) and pre-sessional English courses; see the KU website: http://www.kingston.ac.uk/international/studying-at-kingston/language-requirements/
Programme Accredited by:	Awaiting accreditation
QAA Subject Benchmark Statements:	*All subject benchmark statements can be found here. For PG provision where there is no QAA subject benchmark make reference to the QAA Master's Degree Characteristics*
Approved Variants:	To comply with Engineering Council regulations, a maximum of 20 credits can be compensated within this programme.
Is this Higher or Degree Apprenticeship course?	

For Higher or Degree Apprenticeship proposals only	
Higher or Degree Apprenticeship standard:	n/a
Recruitment, Selection and Admission process:	n/a
End Point Assessment Organisation(s):	n/a

SECTION 2: THE COURSE

A. Aims of the Course

The main aims of the MSc Electronics and Robotics

- Provide a “period of further learning” which is a requirement for Chartered Engineer status for students with an accredited BEng.
- Provide students with knowledge, skills, and a critical appreciation of the principles of operation and the main of electronics, robotics, and artificial intelligence (AI) systems. This encompasses expertise in control systems for robotics, modeling and simulation of electronic and robotic devices, image and signal processing, utilisation of AI techniques, and proficiency in embedded software engineering.
- Provide students with the ability of conceiving, designing, prototyping, and producing creative electronics and robotics systems solutions.
- Provide students with the professional attitudes, entrepreneurial spirit, and many transferable skills necessary to develop and exploit their technical abilities in the furtherance of their careers within the evolving robotic systems industry.
- Adopt a disciplined engineering approach and sound practical skills in the development and deployment of robotic systems using modern engineering design tools, methods, and standards.
- Acquire specialised knowledge and skills in selected areas of robotics. For example, machine learning, modelling and simulation, and embedded electronics.
- Demonstrate an understanding of the major technical, economic, environmental, and societal impact factors, as well as organizational considerations, which guide the design, implementation, and management of complex robotic systems.
- Practice the theoretical concepts and knowledge acquired using the taught modules in a substantial research or industrial based project.
- Initiate, plan, and sustain a disciplined personal effort with academic rigour during the project, leading to an original, individual, and innovative academic dissertation.

B. Intended Learning Outcomes

The course outcomes are referenced to the relevant QAA subject benchmarks for master’s level Engineering (2023) and the Frameworks for Higher Education Qualifications of UK Degree-Awarding Bodies (2014) And relate to the typical student. The course provides opportunities for students to develop and demonstrate knowledge and understanding specific to the subject, key skills, and graduate attributes in the following areas:

The programme learning outcomes are the high-level learning outcomes that will have been achieved by all students receiving this award. They must align to the levels set out in the ‘Sector Recognised Standards in England’ (OFS 2022).

Programme Learning Outcomes					
	Knowledge and Understanding On completion of the course students will be able to:		**Intellectual Skills** On completion of the course students will be able to		**Subject Practical Skills** On completion of the course students will be able to
A1	Demonstrate a critical awareness of the current developments in robotics in a variety of application areas.	B1	Learn independently, think logically and critically, and demonstrate a systematic approach to problem-analysis and to finding solutions.	C1	Design, implement and test the major components required for a practical robotic system for applications such as manufacturing, healthcare, and automation.
A2	Design and deploy robotic systems showing a detailed understanding of principles and practical techniques of modelling and simulation	B2	Critically analyse, evaluate, and communicate research in the chosen area.	C2	Analyse and specify user requirements for robotic systems.
A3	Reflect on the ethical legal and professional issues in the deployment of robotic systems.	B3	Identify current issues and trends in the areas of electronic, artificial intelligence software and control systems.	C3	Express jointly electronic, software and AI designs using a standard notation and to select and apply a suitable software to coordinate the development and deployment of robotic systems.

In addition to the programme learning outcomes, the programme of study defined in this programme specification will allow students to develop the following range of Graduate Attributes:

1. Creative Problem Solving
2. Digital Competency
3. Enterprise
4. Questioning Mindset
5. Adaptability
6. Empathy
7. Collaboration
8. Resilience
9. Self-Awareness

C. Outline Programme Structure

The MSc Electronics and Robotics course develops and consolidates those skills gained at first degree level within a range of disciplines from engineering, computer science, electronics, mathematics, physics, or information technology backgrounds to become a professional within a chosen field. Within a fast-moving market whether industrial, commercial, or domestic sectors, there is a demand for experienced graduates to become technical professionals within the ‘new’ technologies with the skills base that can demonstrate versatility, flexibility and the range of competencies gained at master’s level, giving graduates the opportunity to work not only in both the domestic and global markets.

Robotics and electronics are thriving, evolving fields. This course integrates state-of-the-art sensors, advanced actuators, and artificial intelligence to develop sophisticated robotic systems. While traditionally associated with precision and rapid motion, these systems rely on intricate electronic components and cutting-edge control and AI algorithms. Our program goes beyond traditional robotics, encompassing a wide array of applications, from intelligent sensors in automotive systems to embedded AI in healthcare and rehabilitation devices. We provide a comprehensive education in electronics, robotics, and AI, equipping you with the knowledge and skills to excel in these transformative technologies.

The course encompasses modules dedicated to electronic embedded systems, software algorithms for sensors and image processing, and artificial intelligence, in addition to sensor and actuator technologies. Employers have identified a prevalent skills gap, particularly in practical aptitude. Our program addresses this need through hands-on learning experiences in our state-of-the-art multidisciplinary laboratories, equipped with cutting-edge tools from National Instruments, Quanser, Agilent Technology, and other industry leaders, enhancing the value of this postgraduate degree.

The MSc in Electronics and Robotics at Kingston University stands out from other institutions due to the diverse expertise provided by professionals in Engineering, Computing, and Science. This interdisciplinary approach brings a wealth of knowledge and industrial experience from various domains. Our curriculum is closely aligned with ongoing research activities at university research centres, incorporating

the latest advancements into our research-informed teaching. This encompasses robotics, control systems, embedded electronics, sensor technologies, and more.

Through applied research, students become integral members of our dynamic academic community, engaging in both research and professional practice. They have the opportunity to conduct their own research within individual industry-relevant capstone projects. This includes the preparation of a scientific paper, providing students with the chance to make their breakthrough in publishing their work."

Students also have opportunities to participate in extra-curricular activities in clubs and societies (e.g., Robot Club, Formula Student Club and Engineering society), benefiting from the interaction with a large community of students and staff.

The programme also helps develop employment-ready students through an integrated industrial experience in the form of a work placement on the two-year version of the programme. This integrated placement provides students with an exciting opportunity to apply and develop their knowledge and skills in a real-world setting, which enables them to develop their self-confidence. Students undertaking such placement activities are in a stronger position to gain the skills and experience that employers desire today.

This programme is part of the University Postgraduate Regulations (PR). Programmes in the PR are made up of modules which are designated at level 7. Single modules in the framework are valued at 15 & 30 credits and the programme consists of 3 subject specific single 15 credit modules (3 core & 1 optional), 2 subject specific single 30 credit modules and the capstone project module valued as 2 single modules (60 credits). A Postgraduate Certificate (PgCert) or Postgraduate Diploma (PgDip) may be offered as an exit award, with the minimum requirement for a PgCert of 60 credits and PgDip of 120 credits. The MSc award is achieved with 180 credits completed of (all modules and the final dissertation).

The programme will be accredited by the Institution of Engineering and Technology (IET) to Engineering Council regulations. This accreditation certifies the fact that this course is of the appropriate standard and content, representing the knowledge base required to achieve Chartered status. It therefore takes an applied approach to Electronics and Robotics, developing engineers capable of conceiving, designing, prototyping, and producing electronics system solutions. Our hands-on teaching methods utilise industrial-standard, state-of-the-art equipment, and software, from concept to implementation, giving a distinct advantage on the global job market. Our valued industrial research enables us to recruit a very strong Industrial Advisory Board, including industry leaders such as National Instruments, Thales, and industrial bodies such as the IET, SEMTA and the IMechE, ensure that the course content reflects the changing needs of industry and provides support in terms of course content and equipment.

The award of the accredited MSc requires completion of all modules with only 20 credits compensation; however, 30 credits of compensation is allowed under University Postgraduate Regulations and, in the event that no further resit opportunities are available, compensation may be applied, and the award of MSc Electronics and Robotics Studies awarded. This award will not be accredited with the IET.

The course offers the PG Certificate (PgCert), PG Diploma (PgDip) and MSc Electronics and Robotics Studies only as an exit award.

All students will be provided with the University regulations and specific additions that are sometimes required for accreditation by outside bodies (e.g., professional, or statutory bodies that confer professional accreditation).

Full details of each module will be provided in module descriptors and student module guides.

Students on placement must complete a portfolio assessment which includes a reflection on how the theories they have learnt during their teaching year have helped them in their placement and demonstrate ability to apply their teaching in a real-world situation.

Note: As per GR5 within the general regulations, the University aims to ensure that all option modules listed below are delivered. However, for various reasons, such as demand, the availability of option modules may vary from year to year or between teaching blocks. The University will notify students by email as soon as these circumstances arise.

MSc Electronics and Robotics

Level 7							
MSc Electronics and Robotics							
Core modules	**Module code**	**Credit Value**	**Level**	**Teaching Block**	**Pre-requisites**	**Full Time**	**Part Time**
Dissertation	AE7743	60	7	TB3	None	1	2
Electronics and Robotics Integration	ER7001	15	7	TB1	None	1	1
Industrial Robotics	ME7737	15	7	TB1	None	1	1
Machine Learning	ME7026	15	7	Tb2		1	2
Research Techniques, Innovation & Sustainability	AE7742	30	7	TB1	None	1	2
Sensors, Actuators and Embedded Systems	ER7002	30	7	TB2	None	1	2
Optional Modules							
Applied Deep Learning	ER7003	15	7	TB2	None	1	2
Human Robot Interaction	ME7028	15	7	TB2	None	1	1
Professional Placement	CI7900	120	7	TY13	None	2	3

Level 7 information

Students exiting the programme with 60 credits are eligible for the award of PgCert. Students exiting the programme with 120 credits are eligible for the award of PgDip. Students exiting the programme with 30 credits compensated module are eligible for the award of MSc Electronics and Robotics Studies.

D. Principles of Teaching, Learning and Assessment

The principles of teaching, learning and assessment are in line with the University's strategy. The fields are designed to give students a balanced portfolio of theoretical and practical experience, embracing diversity and individuality.

Our program benefit from the collaboration of industry experts, dedicated lecturers, and esteemed guest speakers. This unique partnership enhances the theoretical foundations of our courses and offers invaluable insights into the dynamic world of robotics, artificial intelligence (AI), and electronics. This synthesis of academia and real-world experience fosters innovation, nurtures creativity, and immerses students in an entrepreneurial culture.

Fields such as control systems for robotics, embedded electronics in AI systems, motion planning for autonomous robots, advanced robotics, sensors, and actuators, as well as cutting-edge electronics for robotics applications are at the core of our curriculum. Our lecturers seamlessly integrate their latest research findings and relevant case studies into the program, in alignment with Kingston University's commitment to "research-informed teaching." This approach ensures that our students not only gain cutting-edge knowledge but also acquire practical relevance.

Furthermore, our program goes beyond the classroom, offering hands-on learning experiences through practical workshops, interactive forums, industry visits, and collaborative group presentations. These immersive activities provide students with a comprehensive understanding of robotics, AI, and electronics practices, thus enhancing their employability throughout the course of their studies.

Taught materials, knowledge gained from the practical and case studies embedded within each module give student specialised knowledge, tools, and techniques. It will equip them with skills and methods for extracting and synthesising the information. These activities promote rigour, curiosity, excellence, originality, and breadth of knowledge. They must then further explore and exploit the information given, research and define outcomes accurately to produce detailed solutions and innovative work for each module and project dissertation.

It is recognised that teamwork is a very important aspect in industry, and this is implemented in the modules. The course ensures that the students are exposed to team working through group presentations, joint report writing, joint research and lab work, promoting consideration, courtesy, and collegiality.

The course teams are aware of the need for effective communication, both written and verbal, and take pride in the fact that the courses provide, in this regard, a means of preparing the students for their longer-term career plans and CPD. Apart from the project itself, each student has to give verbal presentations during the modules, normally to the student's peer group and module leader. Students are also helped with verbal communication skills through seminars, tutorials, and discussion groups. Most modules are assessed by written assignments which are designed to improve students' research and evaluation skills.

The ~~individual project~~ dissertation provides a challenge to the candidate to undertake a real-world problem because most projects are industrially orientated. Students will be given close guidance to select a project which is relevant to the chosen field. During the project, the student will be expected to apply the knowledge learnt during the course to achieve agreed deliverables, whilst satisfying any given constraints. Key skills in communication, presentation, literature search, problem analysis, project planning, report writing, and solution justification are all part of the learning objectives defined in the field. The project work is normally aligned with the research field of the staff involved and often leads to students publishing of join papers with their project supervisor.

Students also have a range of opportunities to participate in extra-curricular activities based around clubs and societies (e.g., Formula Student Club and Engineering society), which offer further opportunities to develop their communication skills, teamwork, and ability to apply their theoretical knowledge to hands-on activities.

A combination of assessment methods will be used throughout the course. These elements include module assignments, module examinations, in-class tests, experiment reports, industrial visit reports, seminars, verbal presentations, and the project dissertation. Each module leader is responsible for ensuring that the method of assessment reflects the aims and learning objectives of the module, is demanding, and stimulating and at the appropriate master level.

Formative assessments are embedded into the delivery pattern of all the modules and are designed to help students learn more effectively by giving them feedback to improve their performance and feedforward towards summative assessments. Reflective practice by students and feedback from designated Personal tutors will also form part of the formative assessments. Group activities are an important part of the course teaching and assessment strategy where students learn and improve through peer feedback.

The programme embraces the use of Technology Enhanced Learning (TEL) to engage students actively. Some of the most widely used technologies in problem-solving activities are computer simulations and modelling which encompass industrial state-of-the-art equipment, embedded microcontroller-based systems and control design and optimisation using advanced computer-aided methods in the curriculum. Digital tools such as a team's work file syncs Cloud, VLE assessment and YouTube videos are used to enhance the quality of student learning experience.

Research-informed teaching

Most of the module teams are engaged in engineering research or industry-related professional activities, such as Knowledge Transfer Partnerships (KTPs), which have

significantly influenced the design and content of the programme. The Department's Industrial Advisory Board also provides valuable input from industry, further informing the programme's development.

The academic staff are committed to continuous professional development in teaching and learning in higher education and wider pedagogic issues. Their research and development of innovative ideas informs the curriculum and enhances student learning experience both within and outside the classroom.

Inclusive teaching practice
The University is committed to an inclusive curriculum, encouraging students to consider themselves as members of a professional community. The Student Voice Committee provides a platform for students to voice their opinions and suggest improvements for developing a more inclusive curriculum that takes into account the specific circumstances of the student body. To cater to different learning preferences and experiences, a diverse range of teaching activities is provided with a careful balance between individual and group-based activities. The assessment brief, provided at the beginning of the year, includes marking criteria for all assessments. The language used in the criteria is clear and concise to ensure that students understand the expectations. Additionally, in-class discussions are held to allow students to question and clarify any doubts regarding the marking criteria.

Focus on Active Learning and Enhancing student Engagement.
The programme emphasises on active learning through collaborative, problem-solving and enquiry-based workshops, and tutorials. Engaging sessions require students to prepare beforehand and actively participate during the class, as opposed to passively listening to lectures. Furthermore, the guided learning approach encourages students to consolidate their knowledge after the session. Additionally, students can benefit from opportunities for peer learning, group work and presentation practice. In these interactive sessions, the lecturer plays a crucial role in supporting students to construct their own knowledge and understanding while introducing and summarising key concepts through short mini lectures.

Active and collaborative learning techniques are utilised in the lectures, which may include interactive presentation software, question-and-answer sessions and brief student discussions integrated into the lecture. By incorporating these methods, valuable contact time is spent on applying and critically analysing knowledge, while also developing key skills such as problem-solving, communication and teamwork. To further promote student engagement and sense of belonging, the programme offers various opportunities for students to interact with staff and peers, including through the personal tutorial scheme (PTS), field work, industrial visits, extra-curricular seminars, research internships, course representative system, student ambassador work, peer mentoring and outreach initiatives, as well as hands-on activities such as Formula Student, TT-Bike racing, Robotics Club and UK Talent. These efforts also support improved retention and progression among students and enhance student engagement, creativity, confidence, and self-reliance.

Development of Employability Skills

The programme not only focuses on imparting theoretical knowledge but also aims to develop a wide range of essential employability skills. This is achieved by embedding future-oriented skills throughout the curriculum via a Research Techniques, Innovation & Sustainability module. Through the programme, students are equipped with effective communication, problem-solving and creative thinking skills – qualities that employers seek in postgraduates. The integration of 'Skills for Innovation' across both business and higher education domains ensures that graduates have the skills, experience and opportunities required to excel in their chosen careers.

The course is designed with close consultation with the School's Industrial Advisory Board, hence taking on board the latest requirements of industry for graduates. Employability skills are developed throughout the delivery of the modules, particularly as part of capstone dissertation. Furthermore, students are equipped with business, management, and entrepreneurial skills to enhance their employability potential globally. Delivery of many modules involves industrial speakers, who introduce students to latest industrial requirements.
Employability criteria identified using feedback from employers, alumni, Industrial Advisory Board, and the Institution of Engineering and Technology (IET) are embedded in the curriculum. Each module is examined to determine opportunities to incorporate employability skills. The University's academic and Careers and Employability Service teams identify appropriate provisions and tailor opportunities to bridge gaps.
The IMechE Formula Student competition, on the other hand, serves as an integral component of the curriculum, equipping students with a well-rounded skill set that extends beyond academic learning and prepares them for the demands of the professional world. Students are required to design and manufacture a prototype of a single-seat race car. This demanding task enables students to refine their technical skills and deepen their understanding of engineering design and manufacturing processes. Moreover, the competition goes beyond developing technical expertise. It provides a platform for students to cultivate essential skills like teamwork, time management, project management, budgeting, and presentation. These competencies, highly sought-after by employers, can significantly enhance students' employability prospects.
Throughout the course students have access to a dedicated employment coordinator; attend specially arranged employer seminars, university career workshops and research seminars, to prepare them for the world of work once graduated.

Students who successfully complete the MSc will have acquired a significant research background and analytical skills in the broader issues of design problem solving relating to Electronics and Robotics Systems. The market for Electronics and Robotics Systems Engineers is continually growing and this course, with its balance of theory and applied specialist learning prepares graduates well for the senior technical and management positions in a range of fields such as:

- Avionics
- Defence
- Automotive Engineering
- Satellite technologies

- Robotics
- Healthcare technologies
- Manufacturing
- Transportation systems
- Computer hardware
- Electrical machines
- Oil & gas
- Alternative fuels generation

The breadth of knowledge and ability gained by the graduates will prepare them to take on the roles such as:

- Systems Engineer/Manager
- System Architect
- Systems Engineering Consultant
- Project Manager
- Researcher (There is also an opportunity to undertake further research for a PhD qualification).

Our recent graduates were recruited by companies such as Delphi, Airbus or gained a fully funded PhD grant in the UK and abroad. Their project work has been recognized in both academia and industry with a recent example of an industrial project prize, Autocar-Courland's Next Generation Award sponsored by Jaguar Land Rover, Toyota, Peugeot, and McLaren.

The level and content of courses are relevant and satisfy the Engineering Council's guidance and criteria (for further information see the Institute Institution of Engineering and Technology (IET) and Engineering Council (EC) links part K).

E. Support for Students and their Learning

A personal tutor will be assigned to each student to personalise their learning experience and support their academic and professional development from the first induction day at the university all the way to graduation and their career destination. The personal tutors will help their tutees with issues of transition from UG to master's and understand how to use feedback on the postgraduate course. They will play an important role in supporting the large community of international students to settle down and take advantage of the university wide support system. They will also encourage students to be proactive in making links between their course and their professional and/or academic aspirations and explore their research interests as well as being part of a wider disciplinary and/or professional community in support of their career choices.

Additionally, Students are supported by a range of other course and/or university level systems, including:

- A Module Leader for each module
- A Course Leader to help students understand the programme structure.
- Technical support on use of IT and workshop/lab facilities.
- A designated programme administrator.
- A dedicated employability consultant practitioner.
- An induction programme at the beginning of each new academic session.

- Series of research seminars delivered by internal and external speakers informing students about latest advances in research.
- Invited guest lecturers informing students about latest developments in technology and professional practise.
- Student Voice Committee (SVC).
- Canvas - a versatile on-line interactive Virtual Learning Environment (VLE).
- ECE Study Skills Centre (S^3) that provides academic skills support.
- KU student support facilities that provide advice on issues such as finance, regulations, legal matters, accommodation, etc.
- Disabled student support.
- The Students' Union.
- KU Careers and Employability Service.

F. Ensuring and Enhancing the Quality of the Course

The University has several methods for evaluating and improving the quality and standards of its provision. These include:

- External examiners
- Annual Monitoring and Enhancement
- Continuous Monitoring of courses through the Kingston Course Enhancement Programme (KCEP+)
- Student evaluation including Module Evaluation Questionnaires (MEQs), level surveys and the Postgraduate Taught Experience Survey (PTES)
- Moderation policies
- Feedback from employers
- Industrial Advisory Board
- Professional body reaccreditation is required every four years.

In addition to the University quality systems, the course currency and quality is continuously supported and evaluated by the School's Industrial Advisory Board. The module content and delivery methods are informed by the research and enterprise activities of academic staff. The course will be supported, monitored, and accredited by the ~~Institute~~ Institution of Engineering and Technology (IET), under licence from the UK regulator, the Engineering Council, as meeting the requirements for further learning for a Chartered Engineer (CEng) status for candidates who have already acquired an accredited CEng (Partial) BEng (Hons) degree.

Accreditation is a mark of assurance that the degree meets the standards set by the Engineering Council in the UK Standard for Professional Engineering Competence (UK-SPEC). Some employers recruit preferentially from accredited degrees, and an accredited degree is likely to be recognised by other countries that are signatories to international accords.

G. Employability and work-based learning

Work placements are actively encouraged - although it is the responsibility of individual students to source and secure such placements. This allows students to

reflect upon their own personal experience of working in an applied setting, to focus on aspects of this experience that they can clearly relate to theoretical concepts and to evaluate the relationship between theory and practice.

Students on courses with professional placement can register for the IMechE Monitored Professional Development Scheme (MPDS) scheme if they desire their placement year to be accredited by the IMechE. The MPDS scheme, adhering to the competencies outlined by the Engineering Council's UK Standard for Professional Engineering Competence (UK-SPEC), provides the students with a structured development framework. This facilitates their journey towards professional registration by enabling them to demonstrate their learning through the submission of reports to the IMechE. Furthermore, participation in the MPDS scheme counts as the first year of industrial experience required for Chartership. Thus, the scheme not only aids students in their professional registration application but also acts as a catalyst for their career progression by speeding up their path towards Chartership.

While it is the responsibility of individual students to secure such placements, the Careers and Employability Service support offers each student support at all stages of the application process, including writing CVs, completing application forms, participating in mock interviews, assessment centre activities and psychometric tests. The process of applying for a placement gives students the opportunity to experience a real-life, competitive job application process.

The business experience period enables students to apply their learning in the real-world work environment, to reflect upon their own personal experience of working in an applied setting, to focus on aspects of this experience that they can clearly relate to theoretical concepts and to evaluate the relationship between theory and practice. Students will be assessed during and at the end of this period, normally through a portfolio. This will be marked as pass/fail.

Students who undertake work-based placements often benefit greatly from the experience, gaining real experience and work achievements.

Work-based learning, including sandwich courses and higher or degree apprenticeships

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H. Other sources of information that you may wish to consult

Engineering Council UK-SPEC
https://www.engc.org.uk/ukspec

Institution of Engineering and Technology IET
https://www.theiet.org/

Kingston University Web site: Electronics and Robotics MSc - Postgraduate degree course - Kingston University London

I. Development of Course Learning Outcomes in Modules

This table maps where course learning outcomes are **summatively** assessed across the modules for this course. It provides an aid to academic staff in understanding how individual modules contribute to the course aims, a means to help students monitor their own learning, personal and professional development as the course progresses and a checklist for quality assurance purposes.

Module Code		Level 7								
		ER7001	ME7737	AE7742	ER7002	ER7003	AE7743	ME7028	ME7026	CI7900
Knowledge & Understanding	A1									
	A2									
	A3									
Intellectual Skills	B1									
	B2									
	B3									
Practical Skills	C1									
	C2									
	C3									

Students will be provided with formative assessment opportunities throughout the course to practise and develop their proficiency in the range of assessment methods utilised.