Template C4

Kingston University London

Programme Specification

Title of Course: *MEng Electronic Products Engineering*

Date first produced	21/08/2024
Date last revised	02/05/2025
Date of implementation of current version	01/09/2024
Version number	18
Faculty	Faculty of Engineering, Computing and the Environment
Cross-disciplinary	
School	School of Engineering
Department	Department of Electrical, Electronic and Robotic 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):	MEng Electronic Products Engineering
Exit Award(s) and Title(s):	BEng (Hons) DipHE CertHE BEng
Course Code *For each pathway and mode of delivery*	UFEPE1EPE80
UCAS code *For each pathway*	H693

Award(s) and Title(s):	MEng Electronic Products Engineering with Professional Placement
Exit Award(s) and Title(s):	BEng (Hons) DipHE CertHE BEng
Course Code *For each pathway and mode of delivery*	N/A
UCAS code *For each pathway*	H694

Awarding Institution:	Kingston University
Teaching Institution:	
Location:	Roehampton Vale
Language of Delivery:	English
Delivery mode:	Primarily campus based (up to 20% of scheduled L&T hours delivered online)
Learning mode(s):	With Professional Placement Full-time
Minimum period of registration:	With Professional Placement - 5 Full-time - 4
Maximum period of registration:	With Professional Placement - 9 Full-time - 8
Entry requirements	Kingston University typically uses a range of entry requirements to assess an applicant's suitability for our courses. Most course requirements are based on UCAS Tariff points, usually stipulated as a

	range, and are sometimes coupled with minimum grades in specific relevant subjects. We may also use interview, portfolio and performance pieces to assess an applicant's suitability for the course. We recognise that every person's journey to Higher Education is different and unique and in some cases we may take into account work experience and other non-standard pathways onto University level study. Additionally, all non-UK applicants must meet our English language requirements. Please see our course pages on the Kingston University website for the most up to date entry requirements
Regulated by	The University and its courses are regulated by the Office for Students
Programme Accredited by:	Not accredited yet
Approved Variants:	• Where a module has more than one element of assessment, in addition to the normal requirement that a student must pass the module on aggregate, there are additional requirements for the student to pass elements of assessment in the module separately in order to achieve an overall pass for the module. Such additional module-specific requirements are outlined in the Module Descriptors. • To comply with the Engineering Council regulations, a maximum of 30 credits in the programme can be compensated.
Is this Higher or Degree Apprenticeship course?	No

SECTION 2: THE COURSE

A. Aims of the Course

The general aim of the Electronic Products Engineering course is to equip students with the theoretical and practical knowledge required to design, analyse, and implement complex electronic systems throughout all phases of the electronic product development cycle, from initial technical feasibility studies to final production-ready equipment development in our increasingly interconnected and technologically advanced world.

More specific aims of the course are to:

- equip students with a multidisciplinary skill set and knowledge base by offering common engineering modules throughout the programme that span across various disciplines.
- develop students' analytical and problem-solving skills, as well as their ability to critically evaluate evidence and assumptions to reach sound judgements, and to effectively communicate their ideas.
- furnish students with the leadership skills and know-how needed to generate new knowledge through research and development, as required for chartered engineers.
- equip students with the research and employability skills required for advanced studies and work in electronic products engineering, particularly in the areas of product development and project management.
- provide graduates with a comprehensive knowledge of the electronic product development cycle, including technical feasibility studies, requirements analysis, design, prototyping, testing, validation, and production.
- foster graduates' understanding of sustainability and health and safety within their discipline, and the reflective skills to continually develop themselves professionally.
- ensure that graduates have the ability and confidence to take on leadership roles in major engineering projects.

B. Programme Learning Outcomes

The programme learning outcomes are the high-level learning outcomes that will have been achieved by all students receiving this award. They have been aligned to the levels set out in '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	Apply a comprehensive knowledge of mathematics, science, and engineering to design, analyse, and optimize electronic systems throughout the product development cycle	B1	Formulate and analyse complex electronic product development problems to reach substantiated conclusions	C1	Use practical laboratory and workshop skills to investigate and test electronic systems and components throughout the product development cycle
A2	Examine the behaviour of circuits and systems, including power, control, and communication systems, in the context of product development	B2	Select and apply appropriate computational and analytical techniques to model electronic product development processes, discussing the limitations of the techniques employed	C2	Select and apply appropriate materials, equipment, engineering technologies, and processes for manufacturing and assembling electronic products, recognizing their limitations
A3	Demonstrate a comprehensive knowledge of materials, devices, and technologies used in electronic products engineering, and their limitations	B3	Select and critically evaluate technical literature and other sources of information to solve electronic product development problems	C3	Design and conduct experiments to validate and optimise electronic systems and components throughout the product development cycle, interpreting and presenting data in a clear and concise manner
A4	Apply a comprehensive knowledge of electromagnetic fields and waves to analyse and design communication systems within electronic products	B4	Design electronic products that meet desired specifications and constraints while considering factors such as safety, reliability, and cost	C4	Demonstrate practical skills necessary for prototyping and testing electrical and electronic engineering systems, ensuring

					their effectiveness, reliability and safety
A5	Evaluate the environmental impact of electronic systems and design solutions that minimise adverse impacts throughout the product development cycle	B5	Identify and analyse ethical concerns related to electronic product development projects and make reasoned ethical choices informed by professional codes of conduct	C5	Function effectively as an individual, and as a member or leader of a team, evaluating the effectiveness of own and team performance in electronic product development projects
A6	Develop a critical awareness of new developments in the field of electronic products engineering and their potential impact on industry and society	B6	Use a risk management process to identify, evaluate, and mitigate risks associated with electronic product development projects or activities	C6	Communicate effectively on electronic product development matters with technical and non-technical audiences, evaluating the effectiveness of the methods used
A7	Apply the principles of coding and algorithms for signal and image processing, data analysis, and control in electronic product development	B7	Adopt an inclusive approach to engineering practice and recognize the responsibilities, benefits, and importance of supporting equality, diversity, and inclusion in electronic product development projects and activities	C7	Adopt a holistic and proportionate approach to the mitigation of security risks associated with electronic product development projects and activities

C. Future Skills Graduate Attributes

In addition to the programme learning outcomes, the programme of study defined in this programme specification will engage students in developing their Future Skills 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

D. Outline Programme Structure

Full details of each module will be provided in module descriptors and in the module canvas pages.

MEng Electronic Products Engineering

Level 4							
MEng Electronic Products Engineering							
Core modules	**Module code**	**Credit Value**	**Level**	**Teaching Block**	**Pre-requisites**	**Full Time**	**Part Time**
Electrical Engineering Principles	ER4002	15	4	TB2	None	2	
Electronic Circuits and Systems	ER4001	30	4	Year Long		1	
Engineering Mathematics	EG4017	15	4	TB1		1	
Introduction to Programming	ER4003	15	4	TB2		1	
Microcontrollers and Interface Electronics	ER4006	30	4	Year Long	None	1	
Navigate for the Professional Engineer	ER4008	15	4	TB1		1	

Exit Awards at Level 4

Students exiting the course at this point who have successfully completed 120 credits at level 4 or above are eligible for the award of Certificate of Higher Education.

Level 5							
MEng Electronic Products Engineering							
Core modules	**Module code**	**Credit Value**	**Level**	**Teaching Block**	**Pre-requisites**	**Full Time**	**Part Time**
Computer-Aided Electronic Design	ER5005	30	5	Year Long	None	2	
Exploring Engineering Project Management	EG5016	15	5	TB1		2	
Instrumentation and Measurement	ER5001	15	5	TB2		2	
Introduction to Artificial Intelligence	ER5002	15	5	TB2	None	2	
Numerical Analysis and Computing	EG5015	15	5	TB1		2	
Systems Engineering	ER5003	30	5	Year Long		2	
Optional Modules							
Industrial Placement	ME5023	120	5	Year Long		3	

Exit Awards at Level 5

Students exiting the programme at this point who have successfully completed 120 credits at level 5 or above are eligible for the award of Diploma of Higher Education.

Level 6							
MEng Electronic Products Engineering							
Core modules	**Module code**	**Credit Value**	**Level**	**Teaching Block**	**Pre-requisites**	**Full Time**	**Part Time**
Advanced Devices and	ER6001	15	6	TB2	None	3	

Electronic Systems Design							
Advanced Microcontrollers	ER6005	15	6	TB2		1	
Applied Business Management	EG6026	15	6	TB1		3	
Deep Learning for Wireless Networks and Communications	AUG-26-07916	30	6	TY13	None	3	
Electronic Prototyping	ER6002	15	6	TB2	None	3	
Individual Project	ME6020	30	6	TY13	None	3	

Exit Awards at Level 6

Students exiting the programme without completing the full 120 credits but have successfully completed 60 credits at level 6 or above are eligible for the award of an Ordinary Degree.

Level 7							
MEng Electronic Products Engineering							
Core modules	**Module code**	**Credit Value**	**Level**	**Teaching Block**	**Pre-requisites**	**Full Time**	**Part Time**
Advanced Computer-Aided Design	AUG27-07919	15	7	TB2		4	
Engineering and Business Resource Management	ME7024	15	7	TB1	None	4	
Fuel Cells Technology	ME7750	15	7	TB2	None	4	
Integrated Circuit Design	AUg-27-07918	15	7	TB1	None	4	
MEng Team Project	ME7021	30	7	TY13		4	
Product Design Cycle Analysis	ME7741	30	7	TY13		4	

Exit Awards at Level 7

Students exiting the programme with 60 level 7 credits are eligible for the award of Postgraduate Certificate.

Students exiting the programme with 120 level 7 credits are eligible for the award of Postgraduate Diploma.

MEng Electronic Products Engineering with Professional Placement

Level 5							
MEng Electronic Products Engineering with Professional Placement							
Core modules	**Module code**	**Credit Value**	**Level**	**Teaching Block**	**Pre-requisites**	**Full Time**	**Part Time**
Industrial Placement	CI5999	120	5	TY13		3	

Exit Awards at Level 5

Students exiting the programme at this point who have successfully completed 120 credits at level 5 or above are eligible for the award of Diploma of Higher Education.

E. Teaching, Learning and Assessment

This course uses a range of teaching and assessment methods which have been designed to support students' learning and achievement of the learning outcomes. The course has been developed with reference to the Kingston University Academic Framework which sets-out core principles relating to Course and Credit Structure (including Module delivery Structure and Pattern, and Learning Hours and Learning Formats); Curriculum Design (inclusion Learning Design Principles and Inclusive Curriculum); and Future Skills.

Teaching and Learning on the course consist of Scheduled Learning and Teaching and Guided Independent Study (self-managed time). Scheduled Learning and Teaching includes the following, and the format for each module is set out in the module specification:

- Laboratory Sessions
- Lectures
- Seminars
- Tutorials
- Workshops
- Placements

Guidance for students on the use of independent study time is communicated through the 'Succeed in your module' section on the Canvas Virtual Learning Environment and through other communications during the course.

In addition to the core Scheduled Learning and Teaching activities for the course, the University may offer students additional optional opportunities for learning. Examples of these include Study abroad and Work-based learning.

The course will provide students with the opportunity to develop their knowledge and skills relating to at least two United Nations Sustainable Development Goals (UN SDGs). We are committed to empowering students with the knowledge, skills and opportunities to understand and address the UN SDGs: each course is thus also required to prepare students for at least two of the SDGs (not including Quality Education, which all courses must deliver).

F. Support for Students and their Learning

Students are supported through a range of services that provide academic and wider support. These include:

- A Module Leader for each module
- A Course Leader to help students understand the course structure
- Personal Tutors to provide academic and personal support
- Technical support to advise students on IT and the use of software
- Student Voice Committee – to ensure the views of students are heard
- Canvas – Kingston University's Virtual Learning Environment
- Student support facilities that can provide advice on issues such as finance, regulations, legal matters, accommodation, international student support
- Disabled student support
- The Kingston Students' Union
- Student Development and Graduate Success

G. Ensuring and Enhancing the Quality of the Course

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

- Continuous Monitoring of courses through the Kingston Course Enhancement Programme (KCEP)
- Student evaluation including Module Evaluation Questionnaires (MEQs), the National Student Survey (NSS)
- Internal and external moderation of graded assignments

H. External Reference Points

External reference points which have informed the design of the course. These include:

- PSRB standards
- QAA Subject benchmarks
- Other subject or industry standards

I. Development of Course Learning Outcomes in Modules

This table maps where programme learning outcomes are **summatively** assessed across the **core** 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 4						Level 5								Level 6						Level 7					
		ER4006	ER4002	ER4003	EG4017	ER4008	ER4001	ER5003	EG5016	ME5023	CI5999	EG5015	ER5002	ER5001	ER5005	ME6020	AUG-26-	ER6002	ER6001	ER6005	EG6026	AUG27-	ME7750	ME7021	ME7741	AUg-27-	ME7024
Knowledge & Understanding	A1						S																				
	A2						S														S						
	A3					S								S					S								
	A4						S																				
	A5	S					S		S										S						S		
	A6								S																		
	A7																S										
Intellectual	B1	S															S										
	B2												S											S			

Skills	E3	S					S																			
	E4											S													S		
	E5			S																					S		
	E6																		S					S			
	E7						S																				S
Practical Skills	C1						S																				S
	C2																				S						
	C3					S									S									S			
	C4															S											
	C5													S							S						S
	C6			S				S											S							S	
	C7	S																	S								

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

Additional Information