Template C4

Programme Specification

Title of Course: *Foundation Year in Engineering*

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Version number	4
Faculty	Faculty of Engineering, Computing and the Environment
School	School of Engineering
Department	Department of Aerospace and Aircraft Engineering
Delivery Institution	Kingston University

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***	Foundation Year in Engineering
Intermediate Awards(s) and Title(s): ***There are 4 Intermediate awards for each pathway***	
Course Code ***For each pathway and mode of delivery***	NCECUCF1F
UCAS code ***For each pathway***	H208, H308, H408

RQF Level for the Final Award:	
Awarding Institution:	Kingston University
Teaching Institution:	Kingston University
Location:	Roehampton Vale / Penrhyn Road
Language of Delivery:	English
Modes of Delivery:	Full-time
Available as:	Full field
Minimum period of registration:	Full-time - 1 year
Maximum period of registration:	Full-time - 2 years
Entry Requirements:	Points: 64 Units: two A-levels or equivalent Subjects: • A-levels: any subjects (General Studies and native language A-level not accepted) • BTEC Diploma (Merit, Merit) • BTEC National Diploma (Merit, Pass, Pass) in any subject • Key Skills: points not accepted in tariff Plus GCSE A*–C (or comparable numeric score under the newly reformed GCSE gradings): five subjects, including English Language and Mathematics (Key Skills Level 2 Communication and/or Application of Number not accepted). **Other entry routes** We will consider a range of alternative qualifications or experience that are equivalent to the typical offer. A minimum academic IELTS score of 6.0 (with a minimum score of 5.5 in all elements) or equivalent is

	required for those for whom English is not their first language.
Programme Accredited by:	none
QAA Subject Benchmark Statements:	*Not applicable*
Approved Variants:	None.
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 primary aims of the programme are:

- To provide the opportunity for mature students, students with vocational qualifications and students with non-standard entry qualifications with appropriate ability and motivation to enter Level 4 of a degree course in their chosen Engineering discipline.
- To afford such students with the opportunities to develop their written and oral communication skills.
- To provide students with the opportunity to develop specific transferable skills, such as practical skills and basic IT skills, along with learning and communication skills appropriate for entry to Level 4.
- To help the students work effectively in groups and individually.

B. Intended Learning Outcomes

The programme provides opportunities for students to develop and demonstrate knowledge and understanding, skills and other attributes in the following areas. The programme outcomes are referenced to the QAA subject benchmarks for Engineering and the Framework for Higher Education Qualifications in England, Wales and Northern Ireland (2008), and relate to the typical student.

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
A4	Understand the need for compliance with health and safety policies	B4	Demonstrate the ability to be independent, autonomous learners	C4	Work effectively both as individuals and as members of teams
A3	Understand basic business and economic theories relevant to engineering	B1	Apply basic fundamental engineering theoretical principles	C3	Comply with Health and Safety regulations in the laboratory
A2	Show broader technical and non-technical subjects associated with engineering	B2	Use mathematics as a means for solving basic engineering problems	C2	Analyse and interpret measured data to produce useful results
A1	Understand the core basic engineering subjects of science, mathematics and mechanics	B3	Utilise information and communication technology to solve basic problems in engineering and present results	C1	Use laboratory equipment for experimental investigation and data measurement
				C5	Communicate ideas, methods and results by oral, written and graphical means

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 programme is made up of four modules each worth 30 credit points. Typically a student must complete 120 credits to progress to level 4. All students will be provided with the University regulations. Full details of each module will be provided in module descriptors and student module guides.

This foundation year is designed to enable students to acquire and demonstrate basic core knowledge and understanding of engineering subjects allowing them to progress into an appropriate BEng/BSc level 4 of an Engineering degree offered by the Faculty. To facilitate this the modules are designed to complement each other and where appropriate are inter-linked to enhance the learning experience. For example, laboratory skills acquired in EG3012 module underpin topics in Engineering Mechanics module EG3010. Similarly, mathematical topics delivered in EG3020 underpin engineering concepts covered in EG3010 and EG3011.

Foundation Year in Engineering

Level 3							
Foundation Year in Engineering							
Core modules	**Module code**	**Credit Value**	**Level**	**Teaching Block**	**Pre-requisites**	**Full Time**	**Part Time**
Business, Laboratory and Study Skills	EG3012	30	3	1&2			
Engineering Mechanics	EG3010	30	3	1&2			
Engineering Science	EG3011	30	3	1&2			
Technology Mathematics	EG3020	30	3	1&2			
Optional Modules							

D. Principles of Teaching, Learning and Assessment

Within the educational aim of the programme, which is to ensure that students are thoroughly equipped with the essential engineering content before progressing to level 4, students will meet a range of learning strategies appropriate to the learning outcomes. Lectures and practical classes form the main approach and they are supported by tutorials and guidance on independent learning.

Technology Enhanced Learning: it complements the traditional main approach. All modules make use of the university's virtual learning environment (VLE), Canvas, not just as a repository but as an active learning tool, for example the use of videos, animations and audio recordings of lectures to further explain more challenging concepts and techniques. Additional links to appropriate online information sources will be provided along with sign posts to appropriate resources. However, the use of technology should not be restricted to the VLE, but should also embrace mobile technology and encourage students to use their mobile devices to enhance their own learning experience, this may well involve the use of social media or other application as additional aids to learning, again where appropriate given the nature of the particular module.

Research Informed Teaching: most of the teaching staff are either research active (actively involved in the various Research Groups of the Faculty or may be following interest areas of their own) or are involved in industry related professional activities, through KTPs or other direct involvement with industry. When appropriate, they will bring case studies and examples of their research into the classroom to demonstrate the application of knowledge as well as develop a sense of inquiry and curiosity amongst the students.

This foundation year seeks to ensure that the students learn actively and effectively, whether by formal tutor-centered methods, group activities, practical laboratory work or by individual study. Throughout the programme students will also develop a range of key skills as emphasis is placed on extending self awareness skills, communication skills, interpersonal skills, numeracy skills, management and leadership skills and problem solving skills.

Generally teaching material will be delivered by instructional lectures whilst associated tutorials, laboratory work and Technology Enhanced Learning are used to enhance the lectures. The hours associated with each module depend on the module content and type but typically a module would comprise 5 contact hours per week (lecture/tutorial/laboratory).

The range of learning and teaching strategies is outlined as follows:

Lectures
Lectures are formal, staff-led sessions designed to introduce new topics, impart a structured knowledge base to students or to give an overview of subject matter to be investigated further by the student. Lectures may be enhanced using media, handouts by staff and other information provided on Canvas.

Tutorials
Academic tutorials are provided where staff assist students in solving analytical problems or discuss lecture material. Most of the time the tutorial will be integrated into the lecture. Pastoral tutorials are available for students in groups or individually to discuss academic or other issues with a pastoral tutor.

Practical work
Laboratory experiments are designed to enable students to acquire practical and analytical skills through the application of theory and will include data collection, analysis, presentation and reporting. Students may learn on an individual or group basis.

e-Learning
The main resources to support lectures and tutorials are provided through a Virtual Learning Environment called Canvas, which uses a range of e-learning experiences including interactive lectures and exercises.

Independent Study
Students are expected to undertake private reading, engage with e-learning resources, go through practice exercises, reflect on feedback and prepare work for lectures, practicals, presentations and other such module activities.

Personal Tutorials
All students are assigned a Personal Tutor who can advise on both academic and personal matters.

The assessment strategies using a combination of summative and formative evaluation are designed to complement the programme's teaching and learning strategies and to meet the aims and learning outcomes of the foundation year and its modules. A range of assessment methods will be used that enable students to demonstrate the acquisition of knowledge and skills. Methods include:

- Multiple choice Questions: to assess competence in basic techniques and understanding of concepts.

- Coursework assignments: to assess ability to apply learned techniques to solve simple to medium problems and which may include a limited investigative component.

- In-class tests and end-of-module examinations: to assess overall breadth of knowledge and technical competence to provide concise and accurate solutions within restricted time.

- Laboratory work: to assess ability of applying technical knowledge to practical tasks.

- Written reports: to assess ability to communicate results, comments and conclusions effectively.

- Oral and visual presentations: to assess ability to summarise accurately and

communicate clearly the key points from the work.

The assessment approach for each module has been designed to provide formative opportunities that allow students to practice and to receive feedback on their performance and feed forward in preparation for the summative assessment. Often this is achieved through regular and concise feedback on set tasks throughout the academic year. These tasks can be either made of formative tests (short weekly questions related to the current topic covered) or practical laboratory work and reports. This will help ensure the students have mastered the skills and developed the confidence to perform well in summative assessments. Care has been taken to avoid assessment bunching.

Combining these strategies during their study will provide students with the opportunity to develop an investigative, independent and individualised approach to learning, and lay the foundation to their future careers, further study or research.

E. Support for Students and their Learning

Personal Tutor Scheme (PTS)

Personal Tutorials are designed to help students settle in and build confidence. They provide academic and personal support to students and give them the opportunity to meet with their personal tutors regularly to discuss their personal and academic development. They provide students with a point of contact should they need advice and information of the procedures necessary to get help.

Overall Aims

- To assist students in making the transition to Higher Education with an emphasis on widening participation issues
- To help students to develop good academic habits and to gain the confidence to operate successfully in a university context
- To build a rapport between staff and students and contribute to personalising students' experience within the Faculty of Science, Engineering and Computing
- To support students in the development of their academic skills providing appropriate advice and guidance throughout their time at Kingston, while monitoring their progress, helping to identify individual needs and referring students to other University services as appropriate
- To help students to develop the ability to be self-reliant and confident self-reflective learners who use feedback to their best advantage
- To encourage students to reflect on how their learning relates to a wider context and their personal career progression

Allocation of Personal Tutors

- Personal tutors will be allocated during induction week
- Regular contact between the students and their tutor is ensured through one scheduled specific hour every week. The students will be able to use this time as small groups or on an individual basis for sensitive issues. Additionally, personal tutors make themselves available outside the scheduled weekly hour for urgent and or critical issues.

- When appropriate students will keep the same tutor throughout their course of study at Kingston University.

In addition, students are supported by:

- A Module Leader for each module
- A Head of foundation year to help students understand the programme structure
- Technical support to advise students on IT and the use of software
- A designated programme administrator
- An induction week at the beginning of each new academic session
- Dedicated Foundation Year Programmes Staff Student Consultative Committee
- Canvas - a versatile on-line interactive learning environment -
- Maths Aid - a help for Maths through one to one sessions and online support -
- A substantial Study Skills Centre (S^3) that provides academic skills support
- Student support facilities that provide advice on issues such as finance, regulations, legal matters, accommodation, international student support etc.
- Disabled student support
- The Union of Kingston Students
- Careers and Employability Service

F. Ensuring and Enhancing the Quality of the Course

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

- External examiners
- Boards of study with student representation
- Annual review and development
- Periodic review undertaken at the subject level
- Student evaluation
- Moderation policies
- Professional bodies re-accreditation is required every few years

G. Employability and work-based learning

Students successfully completing the foundation year will progress to Level 4 of their chosen engineering degree course at Kingston University.

Engineering qualifications are amongst the most versatile and enable graduates to find employment in a wide spectrum of careers. Depending on their chosen Engineering route our graduates have gained jobs with companies such as Boeing Space Systems, British Aerospace, British Airways, the Defense Evaluation and Research Agency, GEC Marconi, Rolls-Royce, Surrey Satellite Technology, Saipem Energy International, 2H Offshore Engineering Ltd, Simrad Marine Electronics, Linkan Scientific Instruments Ltd, Chapman Engineering Ltd, Delphi Engineering,

Concrete Repairs Ltd, local authorities and water authorities. Many graduates have gone on to courses of further study and research, including MSc and PhD programmes. In addition, the academic and key skills developed throughout Engineering courses also allow graduates to follow careers in other professions such as ICT, finance, accountancy and teaching.

Generally, generic employability skills are developed during the foundation year through activities that are embedded within the programme (module EG3012 in particular where communication skills are enhanced, e.g. personal statements) and personal tutors (e.g. description of various career options/roles and their requirements) and from services offered by the Faculty and University Careers and Employability Services (e.g. workshops, career fairs). Students are encouraged to reflect on and identify what they have learned, whether academically or in terms of transferable skills, and how these may be relevant to employment. They are also encouraged to explore the job market and possible career paths, and to consider attributes that employers look for in graduates above and beyond essential academic skills, such as initiative, the ability to work in teams and manage time.

Later on during their degree, the students are further exposed to more detailed and specific employability skills. For example, they will be strongly encouraged and supported in applying for positions in industry for an Industrial placement year between levels 5 and 6.

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

Students who progress from this foundation programme into a relevant Engineering BEng/BSc course would be strongly encouraged to take the option of industrial placement (sandwich programmes). This will normally take place after the completion of level 5 of the degree.

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

See subject benchmark for Engineering:
http://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/sbs-engineering-15.pdf?sfvrsn=f99df781_10

Unistats website:
http://unistats.direct.gov.uk/

Kingston University website:
http://www.kingston.ac.uk

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 3			
		EG3020	EG3012	EG3010	EG3011
Knowledge & Understanding	A4				
	A3		S		
	A2		S		
	A1	S	S	S	S
Intellectual Skills	B4		S		
	B1	S	S	S	S
	B2	S		S	S
	B3		S		S
Practical Skills	C4				
	C3		S		S
	C2		S		S
	C1		S		S
	C5		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.