

## Template C4



# Programme Specification

**Title of Course:** *BEng(Hons) Aircraft Engineering top-up*

<b>Date first produced</b>	07/01/2013
<b>Date last revised</b>	04/09/2024
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<b>Version number</b>	8
<b>Faculty</b>	Faculty of Engineering, Computing and the Environment
<b>School</b>	School of Engineering
<b>Department</b>	Department of Aerospace and Aircraft Engineering
<b>Delivery Institution</b>	Kingston University/Air Transport Training College – Singapore/Nilai University College – Kuala Lumpur/SriLankan Aviation College (SLAC)-Sri Lanka

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 module can be found in the course VLE site and in individual Module Descriptors.

## SECTION 1: GENERAL INFORMATION

<b>Award(s) and Title(s):</b> <i>Up to 10 pathways</i>	BEng(Hons) Aircraft Engineering top-up
<b>Intermediate Awards(s) and Title(s):</b> <i>There are 4 Intermediate awards for each pathway</i>	BEng Aircraft Engineering (requires 60 credits)
<b>Course Code</b> <i>For each pathway and mode of delivery</i>	
<b>UCAS code</b> <i>For each pathway</i>	H416

<b>RQF Level for the Final Award:</b>	6
<b>Awarding Institution:</b>	Kingston University
<b>Teaching Institution:</b>	Kingston University/Air Transport Training College – Singapore/Nilai University College – Kuala Lumpur/SriLankan Aviation College (SLAC)-Sri Lanka
<b>Location:</b>	ATTc – Singapore/Nilai University College – Kuala Lumpur/SriLankan Aviation College (SLAC)-Sri Lanka
<b>Language of Delivery:</b>	English (at all delivery sites)
<b>Modes of Delivery:</b>	Part-time Full-time
<b>Available as:</b>	Full field
<b>Minimum period of registration:</b>	Part-time - 2 Full-time - 1
<b>Maximum period of registration:</b>	Part-time - 5 Full-time - 5
<b>Entry Requirements:</b>	The programme was initially designed as a top up for students who had completed the KU validated FD in Aircraft Engineering and practising aircraft maintenance engineers in possession of an EASA category B licence. However, the programme has subsequently been validated as a progression route for a number of aircraft maintenance engineering related courses delivered in the UK and overseas. The range of maintenance engineering licenses accepted for entry has also been expanded. Although, applicants with non-EASA licenses continue to be considered on an individual basis and may be expected to complete an entry test and attend an interview.

	<p>The entry requirements for the programme will be satisfied by successful completion of the following KU validated programmes:</p> <ul style="list-style-type: none"> <li>FD Aircraft Engineering</li> <li>FD Aeronautical Engineering</li> <li>FD Aviation Engineering</li> <li>FD Aerospace Engineering (MRO)</li> </ul> <p>Entry to the programme will be granted to EASA Category B licence holders because, by virtue of holding an EASA B Licence an engineer will have demonstrated, through prior certificated learning (EASA examinations) and prior experiential learning gained through working in the maintenance industry, that they have satisfied the learning outcomes of the FD Aircraft Engineering.</p> <p>Applicants who are practising aircraft maintenance engineers in possession of non-EASA licenses that are considered to be equivalent to an EASA category B licence, or who have completed a programme of study considered equivalent to one of the KU level 4/5 validated programmes will be considered on an individual basis. These applicants may be expected to complete an entry test and attend an interview.</p> <p>EU and overseas students are welcome. Applicants must satisfy the academic entry requirements and have an Academic IELTS 6.0 with a minimum score of 5.5 in all elements. Other English language tests or qualifications will be considered on an individual basis.</p>
<b>Programme Accredited by:</b>	Kingston University : RAeS Air Transport Training College – Singapore: RAeS Nilai University College – Kuala Lumpur: RAeS
<b>QAA Subject Benchmark Statements:</b>	Engineering
<b>Approved Variants:</b>	None.
<b>Is this Higher or Degree Apprenticeship course?</b>	

***For Higher or Degree Apprenticeship proposals only***

<b>Higher or Degree Apprenticeship standard:</b>	none
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<b>Recruitment, Selection and Admission process:</b>	none
<b>End Point Assessment Organisation(s):</b>	none

## **SECTION 2: THE COURSE**

### **A. Aims of the Course**

The aims of the programme are to:

- Provide students with an understanding of the broader aspects of aircraft maintenance outside the scope of knowledge gained from aircraft maintenance engineering FDs, vocational courses and work experience.
- Develop and enhance the academic, professional and personal skills necessary for registration as Incorporated Engineers.
- Provide students with the knowledge and skills necessary for them to exploit their potential in the furtherance of their careers and ultimately become proficient managers in the aircraft maintenance industry.

### **B. Intended Learning Outcomes**

The programme provides opportunities for students to develop and demonstrate knowledge and understanding and intellectual and practical skills as shown in Table 1.

The programme also provides an opportunity for the students to develop and demonstrate the key skills shown in Table 2.

The programme outcomes are referenced to the QAA subject benchmark statement for engineering, the Framework for Higher Education Qualifications in England, Wales and Northern Ireland (2008) and the EC UK-SPEC Learning Outcomes, 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					
	<b>Knowledge and Understanding</b>		<b>Intellectual Skills</b>		<b>Subject Practical Skills</b>
	On completion of the course students will be able to:		On completion of the course students will be able to		On completion of the course students will be able to
A1	Apply the fundamental principles of aerodynamics, propulsion, structures and materials to air vehicle performance problems	B1	Critically evaluate arguments, assumptions, abstract concepts and data (that may be incomplete), to make judgements, and to frame appropriate questions to achieve a solution - or identify a range of solutions - to a problem.	C1	Work individually or as part of a team to initiate, plan and manage a complex project and drive it to a successful conclusion.
A2	Apply business methods to, and assess the economic and financial aspects of aviation projects.	B2	Communicate information, ideas, problems and solutions to both specialist and non-specialist audiences both orally and in writing.	C2	Recognise, evaluate and analyse problems; identify and investigate solutions, and present and explain their findings orally and in writing.
A3	Use their knowledge and understanding to analyse an airline transport or engineering issue and develop a solution for it.	B3	Demonstrate that they have the intellectual skills necessary for IEng registration and to hold senior posts in the aviation industry.	C3	Produce typical project plans and other project planning and management related documentation.

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 part of the KU Undergraduate Modular Scheme (UMS). Programmes in the UMS are made up of modules, and modules have designated credit values and academic levels. The credit value is related to the amount of study needed to complete a module; each credit is a notional 10 hours work for a typical student on the programme. The academic levels, which are normally linked to the year of study (level 4 – year 1, level 5 – year 2 and level 6 – year 3) are based on the National Qualification Framework and the QAA Framework for Higher Education Qualifications descriptors for higher education. Typically, a student must complete a minimum of 360 credits (120 at level 4, 120 at level 5 and 120 at level 6) to achieve an honours degree.

Under the UMS, the Aircraft Engineering Top-Up is considered as a “Direct Entrant Honours Bachelors” programme consisting of 120 credits at level 6. Students entering the programme are awarded 240 credits (120 at level 4, and 120 level 5) for successful completion of KU validated courses (standard progression option) or for Accredited Prior Learning obtained from other intermediate level qualifications and/or vocational qualifications and experience. Because 240 credits are awarded, no credit can be awarded against the top-up modules and all 120 credits in the top-up must be passed in order to be awarded the honours degree. This also applies to students who may have obtained more than 240 credits at levels 4 and 5 from previous programmes of study.

The programme is offered in both full-time and part-time modes and only there is only a single entry point starting in September. There is no opportunity to transfer to one of the other engineering top-up courses and students cannot transfer into or opt to do the Aircraft Engineering top-up without having completed one of the approved feeder programmes or satisfied the learning outcomes of one of these programmes through other means.

#### **E1. Professional and Statutory Regulatory Bodies**

The programme is accredited by the Royal Aeronautical Society as fully satisfying the educational requirements for registration as an Incorporated Engineer.

#### **E2. Work-based learning, including sandwich programmes**

This programme does not include work-based elements or a break for a work experience placement. However, a good number of the students who complete this programme in part-time mode and a small number of those who complete it in full-time mode are in full-time employment in HM forces or the aircraft maintenance industry. And, the majority of those completing the programme in full-time mode will have completed work-based learning modules in the preceding courses and may also have completed a period of work experience in the aircraft maintenance industry.

#### **E3. Outline Programme Structure**

The 120 credits in the Aircraft Engineering Top-Up programme are split into four 30 credit modules as shown below. Full details of each module can be found in the individual module

descriptors and the module guides which are updated annually and issued to students at the start of each module.

**Level 6**

**Compulsory modules**

	<b>Module code</b>	<b>Credit Value</b>	<b>Level</b>
Air Transport Economics	AE6601	30	6
Aerospace Technology	AE6204	30	6
Individual Project (Aircraft IEng)	AE6200	30	6
Aircraft Maintenance Operations	AE6201	30	6

**Table 4 – BEng(Hons) Aircraft Engineering Modules**

Although all of the modules are level 6, it is essential that delivery of the taught material presented at the start of the Aircraft Maintenance Operations module is completed before the Individual Project module is started. However, it is not necessary for the Aircraft Maintenance Operations module to be completed before the Individual Project module is started. Scheduling and timetabling of the modules will be arranged to ensure this happens. The full-time course is delivered over one standard academic year. All four modules are year-long. However, the individual project is not started until the taught elements of the Aircraft Maintenance Operations module have been delivered.

The part-time course is delivered over two to five years (the maximum period of registration). This period may be extended to six years if a student has to suspend their studies due to accepted mitigating circumstances. The normal year of the standard part-time delivery pattern comprises:

- An induction period at the start of the first year of the programme, normally in September. At induction, students are briefed on the programme and introduced to the modules, the university’s on-line resources and university and programme documentation and processes.
- A full-time study week that normally takes place during the first university enrichment activity week in November. The week comprises 30 hours of lectures and tutorials on a taught module during the day and one or two lecture/tutorial sessions in the evening for the Aircraft Maintenance Operations module.
- A full-time study week that takes place around end January/February (TBC – used to be the second Enrichment Activity week). The week comprises a further 30 hours of lectures and tutorials on the taught module and one or two lecture/tutorial sessions in the evening for the Aircraft Maintenance Operations module.
- Two consecutive days attendance during the last university exam week (normally in May). One of these days is to complete the written examination for the taught module; the other is to complete the group presentation for the Aircraft Maintenance Operations module. The final elements of assessment for this module will also be submitted at this time.

The second year follows the same pattern as the first except students are NOT required to attend the induction day. In year two, students will complete an individual project. The evening tutorial sessions associated with the Aircraft Maintenance Operations module in year one will be used for project supervisor tutorial sessions in year two and the presentation will be delivered during the exam period as in the first year. Individual Project Reports and log books will be submitted at the same time.

To be awarded a BEng(Hons) students must pass all 120, level 6 credits in the programme irrespective of the number of credits they may have gained from other courses. A student is eligible for the award of an unclassified bachelor degree if they successfully complete 60 credits of the programme.



## BEng(Hons) Aircraft Engineering top-up

Level 6							
BEng(Hons) Aircraft Engineering top-up							
Core modules	Module code	Credit Value	Level	Teaching Block	Pre-requisites	Full Time	Part Time
Aerospace Technology	AE6204	30	6				
Air Transport Economics	AE6601	30	6				
Aircraft Maintenance Operations	AE6201	30	6				
Individual Project (Aircraft IEng)	AE6200	30	6				
Optional Modules							

### D. Principles of Teaching, Learning and Assessment

This programme represents the final step along the students' paths to becoming independent learners. Whilst it still contains a reasonable element of classroom based teaching and learning, this is significantly reduced in proportion to that experienced by students on the feeder courses, or indeed in the industry.

The Aerospace Technology module will contain approximately 100 hours of classroom based teaching and is aimed at enhancing the students' ability to analyse technical subjects in a largely mathematical manner; to explore what is happening to the air vehicle in flight through the equations that govern its performance. The material presented in the Air Transport Economics module is, by way of contrast, largely factual and, whilst the mathematical basis of the profit and loss calculations are adequately covered, the emphasis is on developing an understanding of the way the industry responds to the principles of economics and market forces, rather than the laws of physics. Between them, these two modules serve to develop the students' abilities to construct arguments that are literate or numerate as the situation demands. The assessment given in these modules reflects the numerical and descriptive natures of the respective topics.

It is in the remaining two modules that all the learning and experience gained from previous programmes of study and/or work experience are effectively brought together, both of them offering opportunities for capstone assessment. In the Aircraft Maintenance Operations module students are taught about maintenance logistics, maintenance cost drivers and the key aspects of project planning before engaging in a group project based in this field and drawing on knowledge and experience gained previously. These latter skills prove equally useful in the Individual Project during which students conduct numerical and/or fact based analysis on an engineering or maintenance based topic of their own choosing. These two modules will be predominantly enquiry/inquiry-based, student driven learning with tutor/supervisor support. It is also in the individual project and group exercise that give students the best opportunity to demonstrate their knowledge, academic and professional skills and capability.

### E. Support for Students and their Learning

Students are supported by:

- An induction period at the beginning of the programme which includes briefings on the programme; university computer-based resources and university rules, regulations and procedures.
- A Course Director and or personal tutor.
- A Module Leader for each module who is responsible for managing the module and ensuring the coherence of the material and learning, and the fairness of the assessment.
- Project Supervisors to provide academic support and guidance on project related matters.
- Technical support to provide students with advice on IT and the use of software.
- A designated programme administrator.
- Staff Student Consultative Committee.
- StudySpace – the university’s on-line virtual learning environment.
- Learning Resource Centres that provide support for academic skills.
- Student support departments that provide advice on issues such as finance, regulations, legal matters, accommodation, international student support etc.
- Disabled student support
- The Students’ Union
- Careers and Employability Service

The students starting this programme will not have a KU Personal Tutor (PT) from the previous year and some will have no experience of the KU Personal Tutor Scheme (PTS) because they have not studied on a KU course. Therefore, both part-time and full-time intakes will be allocated a personal tutor and will have at least one face-to-face group (whole intake) meeting with the tutor during induction.

Full-time students will have a face-to-face group (whole intake) meeting with the personal tutor in each of the first two weeks of the course; these meetings will be timed to coincide with tutorial sessions for the Aircraft Maintenance Operations to ensure maximum attendance and because some of the matters to be discussed are relevant to this module. In addition, the PT will arrange for a one-on-one meeting with each student to take place in the first month of the course. Further communication between the PT and students will be in accordance with the PTS. However, students will be encouraged to contact their PT if they have any concerns and the PT may arrange further group and/or individual meetings if deemed necessary. It should be noted that full-time students will also have regular meetings throughout the year with the Individual Project Supervisor and the project supervisor for the group project that forms part of the Aircraft Maintenance Operations module.

Part-time students only attend the university for four periods in year one and three in year two. Therefore, regular face-to-face meetings are not possible and so the PT will email each of the students in the first month of the course and if necessary arrange a phone or video-conference (e.g. Skype) meeting with them. The PT will also arrange for a face-to-face group meeting (whole intake) to take place in each of the two, one week attendance periods. There will not enough time to have one-on-one meetings with all students during the attendance periods. Therefore, prior to the attendance period taking place, students will be asked if they would like a face-to-face meeting and arrangements will be made on an individual basis.

## **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 who review work, visit partner sites, attend assessment boards and report on their findings.
- Bi-annual boards of study where the operation of the course is considered. A student representative from each intake of the programme is invited to attend.
- An annual review and development process.
- Periodic reviews undertaken at subject level.
- Student feedback through end of module evaluation questionnaires and Staff Student Consultative Committee meetings.
- Moderation and feedback policies.

In addition, the programme is accredited by the Royal Aeronautical Society as meeting the requirements for IEng registration. To be accredited, a programme must satisfy the Engineering Council's and the Society's requirements. The process, carried out by a panel from the Society, involves:

- An in-depth review of all programme documentation.
- A review of marketing material; the student selection and admission policies and processes, and the progression and award statistics.
- Visits to all delivery sites to assess the learning environment and review resources.
- Meetings with staff involved in the delivery of the programme and private meetings with students on it.
- Confirmation that the programme satisfies the UK Standard for Professional Engineering Competence (UK-SPEC) general and specific learning outcomes.

The programme was reviewed in 2011-12 and accredited on 8 October 2012 as meeting the IEng requirements in full.

## **G. Employability and work-based learning**

The top-up programme is not designed to lead to employment but rather to enhance the student's chances of gaining employment and to prepare them for senior positions and management roles later in their career. All of the students on this programme will already be in full-time employment or will have completed other programmes (feeder courses) designed specifically to lead to employment in the aircraft maintenance industry. Achievement of this degree will not, however, restrict a person to only working as an aircraft maintenance engineer. The knowledge, understanding and skills gained from this programme and prior learning (FD, BEng, Vocational courses etc.) will provide a good foundation for other senior roles in engineering and other technical fields.

The foundation Degree (FD) for which this programme is the top-up was designed in partnership with KLM UK Engineering to ensure that it could be delivered as an approved course by an EASA Part-147 approved Maintenance Training Organisation (MTO). KLM continue to partner KU in the

delivery of the FD and are central to ensuring the course continues to meet the requirements of Part-147. Part-147 training and Part-66 licenses are fundamental to the world of aircraft maintenance; Part-145 maintenance organisations cannot operate without Part-66 licensed engineers and part-147 MTOs are needed to train engineers. And, the same systems and documentation are being adopted worldwide.

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

This programme does not include work-based elements or a break for a work experience placement. However, a good number of the students who complete this programme in part-time mode and a small number of those who complete it in full-time mode are in full-time employment in HM forces or the aircraft maintenance industry. And, the majority of those completing the programme in full-time mode will have completed work-based learning modules in the preceding courses and may also have completed a period of work experience in the aircraft maintenance industry.

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

The programme Specifications for the Kingston University Aircraft, Aeronautical, Aviation and Aerospace (MRO) Foundation Degrees.  
 Engineering subject benchmark:  
[www.qaa.ac.uk/Publications/InformationAndGuidance/Pages/Subject-benchmark-statement-Engineering-.aspx](http://www.qaa.ac.uk/Publications/InformationAndGuidance/Pages/Subject-benchmark-statement-Engineering-.aspx)  
 Professional bodies: [www.raes.org/](http://www.raes.org/) [www.imeche.org/](http://www.imeche.org/)  
 The School of Aerospace and Aircraft Engineering website: <http://sec.kingston.ac.uk/about-SEC/schools/aerospace-and-aircraft-engineering/>  
 EASA. The consolidated version of Regulation (EC) No 2042/2003 is available from the EASA website on page: <https://www.easa.europa.eu/regulations/continuing-airworthiness-regulations.php>. Annex III (Part-66), Appendix I of this document contains the EASA syllabuses (Basic Knowledge Requirements) for EASA Aircraft Maintenance Licenses. Annex II (Part-147) details the requirements that must be satisfied in order to be granted approval to conduct EASA approved training

**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 6
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		AE6201	AE6200	AE6601	AE6204
<b>Knowledge &amp; Understanding</b>	A1				S
	A2	S	S	S	
	A3	S	S		
<b>Intellectual Skills</b>	B1	S	S	S	S
	B2	S	S		
	B3	S	S		
<b>Practical Skills</b>	C1	S	S		
	C2	S	S	S	S
	C3	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.**