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**Programme Specification**

**Title of Course: BSc (Hons) Aviation Operations and Technology**

**Date Specification Produced: 20 August 2018**

**Date Specification Last Revised: 29 August 2018**

This Programme Specification is designed for prospective students, current students, academic staff and potential 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 he/she takes full advantage of the learning opportunities that are provided. More detailed information on the teaching, learning and assessment methods, learning outcomes and content of each module can be found in Student Handbooks and Module Descriptors.

# SECTION 1: GENERAL INFORMATION

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| **Title:** | BSc (Hons) Aviation Operations and Technology |
| **Awarding Institution:** | Kingston University, London, England |
| **Teaching Institution:** | Kingston University, London, England |
| **Location:** | Kingston University, Roehampton Vale / Penrhyn Road Campuses |
| **Programme Accredited by:** | Not Accredited |

## SECTION2: THE PROGRAMME

1. **Programme Introduction**

In the last few decades, the aviation industry has been growing in all regions of the world. More airports are constructed, airlines operate more aircraft and the cost of air travel continues to reduce. The field of air transport operations is becoming more technical and data driven. In response this degree has been designed to meet the future demands of the air travel industry.

Year 1 provides an introduction to aviation and equips you with the maths and physics skills needed for Years 2 and 3 of the degree. You are introduced to the theory of flight and the aircraft systems that enable aircraft to fly. You are also provided with the core communication skills required to become a leader in the industry.

In Year 2 you will learn how airlines, airports and the air traffic control system keep global aviation safe and efficient. You will also be introduced to project management and learn about data analysis techniques.

Year 3 focuses on the operational and commercial nature of the airline industry. You are given the opportunity to research a topic of your choice to enhance your independent learning skills. You will also work as a group to set up and manage a fictional start-up airline and learn about the issues involved.

1. **Aims of the Field/Course**

The aims of the programme are to:

* Provide all students with a thorough understanding of aviation operations in general
* Equip students with the knowledge and practical skills necessary for them to gain graduate employment in the air transport industry.
* Provide students with the opportunity to develop their written and oral communications skills.
* Prepare students to undertake research, further study and continue with lifelong learning by developing their intellectual, problem solving and key (transferable) skills.

Satisfactory completion of the BSc (Hons) Aviation Operations and Technology degree gives students an opportunity of post graduate study on a suitable Air Transport Management MSc course.

1. **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 Framework for Higher Education Qualifications in England, Wales and Northern Ireland (2008), and relate to the typical student.

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| **Programme Learning Outcome Areas** | | | | | |
|  | **Knowledge and Understanding**  **On successful completion of the course students will be able to:** |  | **Intellectual skills**  **On successful completion of the course students will be able to:** |  | **Subject Practical skills**  **On successful completion of the course students will be able to:** |
| A1 | Apply their knowledge and understanding of essential facts, concepts, theories and principles associated with aviation operations. | B1 | Recognise, evaluate and analyse problems; identify and investigate possible solutions and make sound decisions regarding the solution to adopt and/or the course of action to be taken. | C1 | Apply principles to design and implement operational procedures and solve logistical problems through the use of analysis |
| A2 | Demonstrate a knowledge and understanding of aviation operations and project planning. | B2 | Locate, collect, collate, interpret and critically evaluate arguments, assumptions, abstract concepts and data (that may be incomplete), and use it to make judgements, and to frame appropriate questions to help achieve a solution. | C2 | |  | | --- | | Use a range of office, engineering and aircraft industry related IT equipment and software confidently and effectively. | |
| A3 | Demonstrate understanding of the economical, ethical and sustainability challenges facing aviation and recognise the wider benefit of aviation to developing economies. | B3 | Communicate clearly and succinctly orally, graphically and in writing having due regard for the receiving audience and intellectual property rights. | C3 | Apply numerical and statistical methods to operational and commercial data to improve safety, procedures and gain a commercial advantage in the aviation industry and the wider transport sector. |
| A4 | Apply business methods to assess the economic and financial aspects of air transport and/or engineering projects. | B4 | Manage their own personal and professional development by identifying gaps and/or shortfalls in their knowledge, understanding and skills and taking the necessary action to rectify it. | C4 | Work independently or as part of a team to initiate, investigate, plan, manage and drive projects to a successful conclusion and produce the associated documentation (proposals, plans, reports, presentations). |

In addition to the programme learning outcomes identified overleaf, the programme of study defined in this programme specification will allow

students to develop a range of Key Skills as follows:

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| **Key Skills** | | | | | | |
| **Self Awareness Skills** | **Communication Skills** | **Interpersonal Skills** | **Research and information Literacy Skills** | **Numeracy Skills** | **Management & Leadership Skills** | **Creativity and Problem Solving Skills** |
| Take responsibility for own learning and plan for and record own personal development | Express ideas clearly and unambiguously in writing and the spoken work | Work well with others in a group or team | Search for and select relevant sources of information | Collect data from primary and secondary sources and use appropriate methods to manipulate and analyse this data | Determine the scope of a task (or project) | Apply scientific and other knowledge to analyse and evaluate information and data and to find solutions to problems |
| Recognise own academic strengths and weaknesses, reflect on performance and progress and respond to feedback | Present, challenge and defend ideas and results effectively orally and in writing | Work flexibly and respond to change | Critically evaluate information and use it appropriately | Present and record data in appropriate formats | Identify resources needed to undertake the task (or project) and to schedule and manage the resources | Work with complex ideas and justify judgements made through effective use of evidence |
| Organise self effectively, agreeing and setting realistic targets, accessing support where appropriate and managing time to achieve targets | Actively listen and respond appropriately to ideas of others | Discuss and debate with others and make concession to reach agreement | Apply the ethical and legal requirements in both the access and use of information | Interpret and evaluate data to inform and justify arguments | Evidence ability to successfully complete and evaluate a task (or project), revising the plan where necessary |  |
| Work effectively with limited supervision in unfamiliar contexts |  | Give, accept and respond to constructive feedback | Accurately cite and reference information sources | Be aware of issues of selection, accuracy and uncertainty in the collection and analysis of data | Motivate and direct others to enable an effective contribution from all participants |  |
|  |  | Show sensitivity and respect for diverse values and beliefs | Use software and IT technology as appropriate |  |  |  |

1. **Entry Requirements**

The ‘typical offer’ entry qualifications for the programme are:

* 96 UCAS tariff points from at least three A-levels or equivalent. Any subjects accepted and General Studies accepted at half points.
* 96 UCAS tariff points (grades MMM) from a suite of BTEC National QCF qualifications in an engineering, science or technology subject.
* 96 UCAS tariff points from access course with pass required in an engineering, science or technology subject.
* Successful completion of a Foundation Degree in Engineering/Science.
* European Baccalaureate with an average mark of 70% or above.
* International Baccalaureate with a score 24 points and a minimum of grade 5 at standard level in Mathematics and English Language.
* Welsh Baccalaureate with a grade C or above. However other qualifications, preferably in an Engineering or Science must be combined to achieve a UCAS point score of 96 points.
* Scottish Highers with a UCAS point score of 96 points from a maximum of five subjects.
* Irish Leaving Certificate with a UCAS points score of 96 points from Higher Level subjects.

Plus:

* GCSE: Candidates are normally required to hold five GCSE subjects grades A\*–C (or comparable numeric score under the newly reformed GCSE grading), which must include English Language, Mathematics and a Science or technology subject.

**Language proficiency**:

All non-UK applicants must meet our English language requirements. For this course it is Academic IELTS of 6.0 overall, with no element below 5.5. Please make sure you read our full guidance about English language requirements, which includes details of other qualifications we'll consider.

Applicants who do not meet the English language requirements may be eligible to join our pre-sessional English language course.

Applicants from one of the recognised Majority English Speaking Countries (MESCs) do not need to meet these requirements.

**Non-standard entry qualifications are permitted but will be dealt with on a case by case basis.**

1. **Field/Course Structure**

This full-time programme is part of the Kingston University Undergraduate Modular Scheme (UMS). Programmes are made up of modules which are assigned to levels. Levels are more challenging as student’s progress through the programme.

A student must complete a minimum of 360 credits at the required level for award of the **BSc Aviation Operations and Technology**.

Full details of module sequence, course duration and start and finish dates can be found in course literature. Details are also included on the KU website and in student handbooks.

Transfer from other programmes is not possible.

**E1. Professional and Statutory Regulatory Bodies**

The course is not accredited.

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

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 practise.

**E3. Outline Programme Structure**

Each level is made up of four modules each worth 30 credit points. Typically a student must complete 120 credits at each level. 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.

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| **AVIATION OPERATIONS AND TECHNOLOGY** |
| **LEVEL 4 – FIRST YEAR** | |
| EG4010 - **Engineering Design and Professional Practice** *(with Flight Sim)*  EG4011- **Engineering Mechanics, Structures and Materials**  EG4012 – **Engineering Mathematics and Computing**  EG4013 – **Fluid Mechanics and Engineering Science** |
|  |
| **LEVEL 5 – SECOND YEAR** | |
| AE5122 – **Aerospace Engineering**  AE5505 – **Airport Operations and Air Traffic Management**  AE5506 – **Operations Research and Aviation Safety**  ME5014 – **Project Engineering and Management** |
|  |
| **LEVEL 6 – THIRD YEAR** | |
| AE6601 – **Air Transport Economics**  AE6602 – **Airline Operations and Scheduling**  AE6204 – **Aerospace Technology**  AE6600 – **Individual Project – Aviation Studies** |

1. **Principles of Teaching Learning and Assessment**

Module guides set out clear expectations for guided independent learning. Students will be directed to reading and Technology Enhanced Learning (TEL) packages to prepare for individual topics or sessions and also to problem sets or exercises to consolidate and test their learning afterwards. This will be introduced at level 4.The Virtual Learning Environment (VLE) at Kingston will support learning throughout the course through a variety of TEL objects such videos, screencasts, on-line MCQs, discussion boards and interactive teaching packages. It will also deliver teaching material such as lecture notes/presentations, problems sets and worked examples.

A feature of the learning, teaching and assessment strategy in the School of Engineering is that many instructional lectures have been replaced by collaborative, problem solving or enquiry-based learning workshops and tutorials. These require students to prepare for,and participate in, the classroom activities, rather than passively listening to the lecturer. Students are expected to engage with the guided learning to prepare for these teaching sessions and consolidate their learning after the session. These interactive sessions also provide students with opportunities for peer learning, group work and presentation practice. *Give some module examples where this occurs* In these sessions the lecturer facilitates learning by supporting students in creating their own knowledge and understanding. Lecturers may also introduce and summarize key concepts with short mini-lectures.

Each of the twelve modules on the course will be assessed by a mixture of coursework and short answer question final examinations. Other elements of coursework will include written essays and presentations, thus giving opportunities to practice and assess students’ abilities in the non-subject specific key skills. Verbal communication is given some priority in the assessment strategy as commercial pilots do need to be able to communicate with confidence, especially in high stress situations. The use of regular question and answer sessions at the start of lectures will be used to assess learning and allow formative feedback to be given.

Active and collaborative learning is also incorporated in traditional lectures which may have question-and-answer sessions, brief student discussions, clicker activities integrated into the lecture. These methods ensure that valuable contact time is focussed on the application and critical analysis of knowledge and the development of key skills such as problem-solving, communication, and group-work.

The high percentage use of active learning sessions in the teaching hours is aimed at improving student engagement, creativity, confidence and self-reliance. The course endeavours to further secure student engagement by making students feel part of a community and increasing their sense of belonging which is supports to improve retention and progression. This is achieved by providing opportunities to interact with staff and students both socially and academically. In addition, to the active learning sessions and group work, this is achieved through: the PT scheme, field work, industrial visits, extra-curricular seminars, research internships, course representative system, student ambassador work, peer mentoring, PAL civic engagement and outreach opportunities.

**Development of employability skills**

The progressive development of a range key employability skills is another feature of the course as exemplified in teamwork/group work discussed above. Regarding communication skills, at level 4 the focus is on writing individual practical reports (**EG4013 Fluid Mechanics & Engineering Science**) using a standard format and style, and encouraging students to orally communicate the outcomes of small group exercises in the active learning teaching sessions in **EG4010 and EG4011(Engineering Mechanics, Structures & Materials)**. At level 5 students will be required to produce substantial written group reports and present their individual. To help development of these skills student will be required to submit a draft of a report for **EG4011** to the Support for Academic Success Centre for feedback and to discuss this with their personal tutor. At level 6, in the **AE6600 Individual Project** module, students will be taught how to synthesise and critical review information from a variety of sources and report this and their research results in a formal research report and an oral presentation.

To complement the development of employability skills within the curriculum, Personal tutors will encourage students to engage in a range of extra-curricular activities such as student representation, part-time work, sports and recreation,  society membership,  volunteering ; student ambassadorship, leadership and mentoring; cultural and creative activities;   academic and professional collaboration; placement activity; enterprise activity; Careers and Employability Service events and opportunities. Activity in these areas is recognised by the university’s Kingston Award Scheme. Careers and Employability Service offers a range of events, including Careers Uncovered fairs, which include employers coming to campus to promote internship, placement and graduate opportunities, Spotlight on networking activities where employers and alumni are invited on campus to talk about career pathways.

1. **Support for Students and their Learning**

Student support recognises that the student experience is unique to each student. A key part of our approach to an inclusive curriculum is that we acknowledge and where possible accommodate their individual circumstances. The personal tutor scheme is central to the efforts to provide a personalised learning experience. (See PT section of programme specification) At level 4 and 5 a core set of problems for each engineering module are issued to students. These cover the whole curriculum for a particular level. Students are required to work through these formative assessment problems as they cover the relevant curriculum. This allows students to test their learning and measure their progress. Discussion of progress on these problem sets will be a key part of the personal tutor scheme. Students are required to upload their progress on these activities onto the **Learning Log** created on the University VLE system. The Learning Log will be available to the relevant personal tutors for further discussion during one-to-one meetings. There will be milestones for students to meet at every level, and it will be one of the personal tutor’s roles to monitor the students’ progress and give appropriate advice*.*  Where difficulties are encountered PTs will be able to help or direct students to available support including peer mentoring schemes, PAL, Maths aid and on-line resources etc.

Students are supported by:

* **A Module Leader** for each module
* **A Course Leader** to help students understand their programme structure and provide academic support
* **A Personal Tutor** (PT) to provide academic and personal support
* There is a **Student Support and Engagement Team** to help students with any problem that is affecting their studies.
* A dedicated Undergraduate Course Administrator
* **An induction programme** and study skills sessions at the start of each academic year
* **Academic Success Centre**  is a one-to-one drop-in Study Skills session for students every weekday. Help is available on a range of academic skills from writing reports, note-taking, to exam revision, referencing, programming and mathematical skills.
* **VLE** – a versatile on-line interactive intranet and learning environment accessible both on-site and remotely
* **Course Representative scheme**
* **A University Careers** **and Employability Service**
* Comprehensive University support systems including the provision of advice on finance, regulations, legal matters, accommodation, international student support, disability and equality support.
* The Students’ Union
* An Academic Team that seeks to maintain an open door policy in the spirit of supporting students.

**Personal Tutor Scheme (PTS) in the School of Engineering and the Environment**

The following provides the aims and structure of the Personal Tutor Scheme (PTS) for the School of Engineering. It is intended that the PTS be embedded within the provision of the BEng programme.

**Overall Aims**

* To build a rapport between staff and students and contribute to personalising students’ experience within the School of Engineering
* To support students in the development of their academic skills providing appropriate advice and guidance to students 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
* Tutors will be allocated on a course basis where appropriate with student numbers being equally divided amongst the staff within the school
* Students will keep the same tutor throughout their course of study
* If they change discipline at the end of TB1 a change of PT is likely to occur to allow comprehensive support through the programme.

There are specific aims and outcomes for each level, as the PTS is progressive and cumulative students will find that they are building on the skills developed in previous levels. Formative assessment will be provided in the form of regular feedback during meetings.

This needs to reference specific modules linked to the PTs and activities expected of students

**Level 4: Settling in and building confidence**

**Aims and Learning Outcomes**

* To assist students in making the transition to Higher Education and to generate a sense of belonging to the School of Engineering 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 prepare students to make the most of feedback throughout their course

**Contact:**

* Teaching block 1: three one-to-one meetings during induction week, weeks 2 and 6-7
* Teaching block 2: two one-to-one meetings during week 1 and week 6-7
* End of academic year individual ‘wrap up’ email

In addition to a core set of problems for each module students are also given a list of engagement activities that they are encouraged to take advantage of at level 4. PT will discuss progress on problem sets and engagement with certain activities with tutees throughout the year.The Learning Log will be available to the relevant personal tutors for further discussion during one-to-one meetings. There will be milestones for students to meet at every level, and personal tutor’s will monitor the students’ progress and give appropriate advice.

The module **EG4010 Engineering Design and Professional Practice** is closely linked to the Personal tutor scheme as it introduces key academic and employability skills. In addition it focuses on reflective practice on feedback and their progress with academic and employability skills. It is expected that these are topics of conversation personal tutor meetings.

**Level 5: Stepping it up and broadening horizons**

**Aims and Learning Outcomes**

* To help students comprehend and plan for the academic demands of level 5 and to support increasing independence
* To encourage students to look forward, to take up opportunities to develop wider skills and to take responsibility for their personal development
* To foster students’ ability to build on and respond proactively to the feedback they have received
* To assist students in reflecting on the skills that they are developing and consider how they relate to employability

**Contact:**

* One-to-one meeting in week 1
* Email contact at the end of teaching block 1
* Individual ‘wrap up’ email at end of academic year

**Level 6: Maximising success and moving on**

**Aims and Learning Outcomes**

* To support students with the planning necessary to maximise success in their penultimate undergraduate year
* To encourage students to reflect on the employability skills they have developed and be proactive in moving towards a professional life and/or further study
* To help students to make best use of the feedback they have received so that they can build on their strengths and take steps to address any weaknesses

**Contact:**

* One-to-one meeting in week 1
* Email contact at the end of teaching block 1
* Individual ‘wrap up’ email at end of academic year

Personal Tutors would have access to all the formative and summative assessment results of their tutees and would be responsible to discuss them with their tutees and assist them to prepare plans for further improvements and advise on any academic issues they may have. The personal tutors are also responsible for giving a bigger and more complete picture of learning, teaching, learning outcome and assessment and their linkage to the tutees.

1. **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 - Annually
* Boards of study with student representation – Bi-annually
* Annual review and development
* Periodic review undertaken at the subject level
* Student evaluation – Mid and end of module
* Moderation policies – After every summative assessment

1. **Employability Statement**

This course has a pronounced employability focus in that its principle aim is to present students with an understanding of aviation operations encompassing the air transport industry fields of airlines, airport and cargo operations.

1. **Approved Variants from the UMS/PCF**

There are no approved variations of this course.

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

Full details of this programme can be found at [www.kingston.ac.uk](http://www.kingston.ac.uk)***.***

**Development of Programme Learning Outcomes in Modules**

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

Key:

**S** – Indicates where summative assessment occurs.

**F** – Indicates where summative assessment also provides student feedback and/or feed-forward (is formative).

All modules will have elements of informal formative assessment associated with them.

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|  | **Level 4** | | | | **Level 5** | | | | **Level 6** | | | |
|  | **EG4010-** Engineering Design and Professional Practice | **EG4011**-Engineering Mechanics, Structures and Materials | **EG4012**-Engineering Mathematics and Computing Applications | **EG4013**-Fluid Mechanics and Engineering Science | **AE5122 –** Aerospace Engineering | **AE5505** – Airport Operations and Air Traffic Management | **AE5506** – Operations Research and Aviation Safety | **ME5014** – Project Engineering and Management | **AE6204** - Aerospace Technology | **AE6202**- Airline Operations and Scheduling | **AE6600** - Individual Project | **AE6601** - Air Transport Economics |
| **Knowledge and Understanding** | | | | | | | | | | | | |
| A1 |  | S | S | S |  |  |  |  | S |  |  |  |
| A2 |  |  |  | S |  |  |  | S |  | S |  |  |
| A3 |  |  |  | S | S | S | S | S |  | S |  | S |
| A4 |  | S | S |  | S | S | S | S |  | S |  | S |
| **Intellectual Skills** | | | | | | | | | | | | |
| B1 |  | S | S | S |  |  | S |  | S | S | S | S |
| B2 |  | S | S |  |  |  | S |  |  | S | S | S |
| B3 |  |  |  | S | S | S | S | S |  | S | S | S |
| B4 | S | S |  |  |  | S |  | S |  |  |  |  |
| **Practical Skills** | | | | | | | | | | | | |
| C1 | S |  | S |  |  |  | S |  |  | S |  |  |
| C2 | S | S | S | S |  |  |  |  | S | S |  |  |
| C3 | S |  |  |  |  |  | S |  |  | S | S | S |
| C4 | S |  |  | S | S | S | S | S |  |  | 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. Technical Annex**

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| **Final Award(s):** | BSc (Hons) Aviation Operations and Technology |
| **Intermediate Award(s):** | Cert HE  Dip HE |
| **Minimum period of registration:** | FT – 3 years  Sandwich – 4 years |
| **Maximum period of registration:** | FT – 6 years  Sandwich – 8 years |
| **FHEQ Level for the Final Award:** | Level 6 - BSc (Hons) Degree |
| **QAA Subject Benchmark:** | Engineering |
| **Modes of Delivery:** | Full time, Sandwich |
| **Language of Delivery:** | English |
| **Faculty:** | Science, Engineering and Computing |
| **School:** | Engineering and the Environment |
| **JACS code:** | TBD |
| **UCAS Code:** | H463  H462 (with Sandwich Year) |
| **Course Code:** | TBD |
| **Route Code:** | TBD |
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