City College Norwich

SUMMARY PROGRAMME SPECIFICATION

Course Title	BSc (Hons) Professional Aviation Engineering Practice
Awarding Body	University of East Anglia (UEA)
Level of Award	Undergraduate
Professional, Statutory and Regulatory Bodies Recognition	
Credit Structure	360 Credits Level 4: 120 Credits Level 5: 120 Credits Level 6: 120 Credits
Mode of Attendance	FT
Standard Length of Course	3 years
Intended Award	BSc (Hons)
Fall-back Awards	Unclassified Degree (BA) – 300 credits Diploma of Higher Education (Dip HE) – 240 credits Certificate of Higher Education (Cert HE) – 120 credits
Entry Requirements	96 UCAS points, GCSE Maths and English at grade C (grade 4) or equivalent. Mature students with a relevant industrial background may also be considered subject to interview
Delivering Institution(s)	City College Norwich (CCN) is the programme provider with KLM UK Engineering Limited providing the technical work based delivery expertise
UCAS Code	H140

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Course Structure

This course comprises modules at levels 4, 5 and 6.

Module Specifications for each of these modules will be made available to students on-line at the beginning of each academic year.

Module	Credits	Module Type/Description
Level 4		
Materials, Hardware	20	The materials element of this module investigates the characteristics, properties, applications and common heat treatments utilised in ferrous and non-ferrous metals and the properties, characteristics, and repair techniques associated with composite and non-metallic materials. The hardware element of the module involves a comprehensive study of typical hardware as used on and in engineering operations and maintenance processes. This module provides the content required for EASA Module 6 Compulsory for all pathways
Maintenance Practices	20	This Module provides students with the knowledge required to select and use the appropriate tools, materials, drawings and equipment necessary to perform aircraft maintenance tasks. It also provides them with knowledge necessary to work effectively and safely in an aircraft maintenance environment. The module also introduces the student to inspection, testing, repair, assembly and disassembly methodologies as well as the various philosophies that shape or determine the planning and application of aircraft maintenance activities. This module provides the content required for EASA Module 7 Compulsory for all pathways
Workshop & Aircraft Principles	30	This module introduces and provides an opportunity for students to develop the hand skills and basic maintenance skills needed by an aircraft maintenance engineer. The module is not intended to turn the student into skilled experts;
		rather it is designed to provide a thorough introduction and solid grounding for further training, practice and development.

		This module provides the practical content required for EASA Module 7 Compulsory for all pathways
Human Factors & Legislation	20	This module comprises two parts. The first will look at the way human factors affect aircraft maintenance and flight safety and the second will focus on the legal framework in which EASA Part-66 Licensed Engineers work. This module provides the content required for EASA Modules 9 &10 Compulsory for all pathways
Mathematics & Physics for Practitioner Engineers	30	This module covers all of the topics in the EASA part66 Mathematics and Physics syllabuses and provides a knowledge and understanding sufficient for the students to take the associated EASA category B licence. It also extends the mathematics knowledge to a level sufficient to underpin key engineering principles and prepare students for the mathematics in the level 5 & 6 modules of the programme and further study. This module provides the content required for EASA Modules 1 & 2 Compulsory for all pathways
Level 5		
Electrical Fundamentals	30	This module comprises both theory and practical exercises. The theory is delivered in a series of lectures and the practical involves the student completing a series of laboratory sessions designed to reinforce the knowledge gained in the lectures. This module starts by looking at electrical charge and how electricity is created, before moving on to look at resistors, capacitors and inductors. This module provides the content required for EASA Module 3 Compulsory for all pathways

Electronic Fundamentals, Digital Techniques & Aerodynamics	30/40	This module is a combination of electronic fundamentals, digital techniques, aircraft digital systems and aerodynamics.

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		This module provides the content required for EASA Modules 4, 5 & 8 B1.1 pathway – 30 credits B2 pathway – 40 credits
Aeroplanes Aerodynamics, Structures & Systems	30	This module is split into two parts; mechanical and electrical/avionic. The mechanical section provides opportunities to understand and assess elements of aerodynamics, the structure, construction and mechanics of those systems. It also examines the Theory of Flight and how airflow and flight affects the design and operation of aircraft. This module provides the content required for EASA Module 11 B1.1 pathway
Engines & Propellers	30	The principles of operation of gas turbine engines are examined using fundamental laws of physics and the performance of a range of aircraft propulsion systems are assessed. The module also looks at the construction of typical engines by examining the various component parts (stages) of engines in detail. The module follows with a look at the aerodynamics principles of propellers, their construction and performance, before looking at propeller assemblies and associated control and monitoring systems. This module provides the content required for EASA Module 15 & 17 B1.1 pathway
Aircraft Aerodynamics, Structures & Systems (Avionics)	30	This module is split into two parts; electrical/avionic and mechanical. The electrical/avionic section includes an in-depth look at Electrical Power Generation and Distribution along with Internal and External lighting systems. The module also gives an introduction to air data, gyroscopic and compass flight instrument systems and an overview of a number of avionic systems including on-board maintenance systems, integrated modular avionics and Information systems.

This module provides the content required for EASA Module 13 B2 Pathway

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Propulsion	20	The principles of operation of jet engines are examined using fundamental laws of physics of aircraft propulsion systems are discussed. The module looks at the structure and operation of turbojet, turbofan, turboshaft and turbo-propeller engine types. The module then looks at how the engine is controlled through use of Full Authority Digital Engine Control (FADEC) and fuel metering along with flight deck engine indications systems. The module rounds off with how propulsion units are started and how ignition is provided during this cycle This module provides the content required for EASA Module 14 B2 Pathway
Level 6		
Aircraft Maintenance Orientation	30	The aim of this module is to broaden and further develop the engineering understanding of the constraints and requirements of aircraft and maintenance in a specific commercial environment. This module will build knowledge and experience around specific engineering tasks. Specific work practices and systems will implant real working practices on top of EASA regulated training and to allow on-aircraft time to gain familiarity and competence including use of tech log, company systems and practices.
Aircraft Engineering Specifics	30	The aim of this module is to guide and support you in the application of your general knowledge and understanding of the aircraft maintenance quality, task and safety practices, to enable you to formally certify a specific aircraft type as fit to fly (Type Rating). This module allows the engineer to be knowledgeable on the aircraft type – in this case the B737-300 Classic replicated through the aircraft within the Aviation Emulation Zone. This module provides the requirements for EASA Type Regulation.
Threat and Error Management	20	The aim of this module is to provide the opportunity to demonstrate explicit evidence of the integration of technical knowledge, understanding, skills and professional competencies drawn from professional engineer training, maintenance practice and airline/operator specific requirements. Further this module has been designed to further develop students understanding of company standard Safety

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		Management and Human Factors that impact on the effective delivery of aircraft maintenance practices
Extended Project – Evaluating and Managing Aviation Engineering Risk	40	This module is an Extended Project designed specifically to encapsulate final stages of engineer problem solving authorisation. Further it is a development of professional skills, bringing together an established body of knowledge and theory and relating these to issues of aviation risk. This negotiated Extended Project will take into account human and environmental factors affecting task, maintenance activity and flight. Undergraduates will provide critical evaluation and select responses to a wide variety of factors.