

Programme Specification

BSc (Hons) Aircraft Maintenance Engineering
HND Aircraft Maintenance Engineering
HNC Aircraft Maintenance Engineering



Course Specification

Part A

BSc (Hons) Aircraft Maintenance Engineering
HND Aircraft Maintenance Engineering
HNC Aircraft Maintenance Engineering

Validated Programme By

College of Engineering, Environment and Science
From Academic Year: 2024/2025

Please note: This specification provides a concise summary of the main features of the programme and the 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.

We regularly review our programme content, to make it relevant and current for the benefit of our students. For these reasons, programme modules may be updated.

More detailed information on the learning outcomes, content, and teaching, learning and assessment methods of each module can be found in the student module guide(s) and the programme handbook.

Aircraft Maintenance Engineering

1. Introduction

This course is a HNC and HND with BSc top-up programme designed to enable students with a relevant Level 3 qualification in an Aeronautical Engineering subject, or equivalent, to obtain a HND in Aircraft Maintenance Engineering and, if desired, progress to a BSc (Hons) programme in Aircraft Maintenance Engineering and working towards an EASA/UK CAA professional license and towards a career as an Incorporated Engineer (IEng). Graduates from the programme will have a wider and deeper range of skills and knowledge than their contemporaries on more traditional courses that will help them progress in the workplace or help them to continue their studies to a higher-level degree course.

Solihull College and University Centre has seen enrolments for its HE Engineering courses increase by 30% 2015/16. The College is committed to meeting the needs of our local engineering companies and the Local Enterprise Partnership has supported the College's plan. As a result, Solihull has invested £400,000 in an Advanced Manufacturing Centre which opened in September 2014. Over £2 million has been allocated to enhancing the Aeronautical Engineering provision including a Jetstream T2 aircraft and Experimental Testing Facilities. Also, HEFCE awarded funds to enable the College to invest in updating the Materials Testing Equipment. This investment combined with rising student numbers has put us in a position where the College can successfully deliver programmes up to and including level 6.

Aircraft Maintenance Engineers and former students working locally at Birmingham Airport have indicated an aircraft maintenance college and European Union Aviation Safety Agency (EASA) exam centre in the West Midlands would help them to complete their essential professional exams as they currently have to travel to Oxford to complete their studies remotely.

The course has been designed to provide a progression route for full-time level 3 engineering students studying at colleges who are seeking a career in Aircraft Maintenance Engineering. It will also provide training opportunities and CPD for engineers working at local Aircraft Maintenance, repair and operations organisations.

In order to qualify as a licensed aircraft maintenance engineer, a series of licensing exams must be passed in addition to gaining adequate industrial experience. These programmes have been designed to align to the content of the exams for a B1 license (which is required for working with aeroplanes in a maintenance role), but students are required to sit and pay for the licensing exams separately.

In summary, this course will benefit all parties concerned, extending the specialisms which already exist at Coventry University and has the potential to evolve and adapt to future needs and contribute to widening participation.

| 2 Available Award(s) and Modes of Study | | |
|---|---|------------|
| Title of Award | Mode of attendance | FHEQ Level |
| BSc (Hons) Aircraft Maintenance Engineering | FT 3 years PT 6 Years | 6 |
| HND Aircraft Maintenance Engineering | FT 2 years PT 4 years | 5 |
| HNC Aircraft Maintenance Engineering | FT 1 year PT 2 years | 4 |
| 3 Awarding Institution/Body | Coventry University | |
| 4 Collaboration | Solihull College and University Centre Validated award under license with Pearson | |
| 5 Teaching Institution and Location of delivery | Solihull College and University College | |
| | Woodlands Campus | |
| 6 Internal Approval/Review Dates | Date of approval/latest review: 04/24 Date for next review: Academic year 2029/2030 | |
| 7 Course Accredited by | Not Applicable | |
| 8 Accreditation Date and Duration | None | |
| 9 QAA Subject Benchmark Statement(s) and/or other external factors | The QAA Engineering Subject Benchmark statement is relevant to this programme: Subject Benchmark Statement: Engineering (qaa.ac.uk) Professional body guidance from Engineering Council in the form of UK-SPEC fourth edition: uk-spec-v14-updated-hierarchy-and-rfr-june-2023.pdf (engc.org.uk) | |
| 10 DBS requirement | Not required. | |
| 11 Date of Course Specification | July 2024 2023/2024 – Date of review 18/07/2016 – Date of Approval | |
| 12 Course Director | Salman Javed 0121 678 7391 Salman.Javed@Solihull.ac.uk Lecturer Engineering Solihull College & University Centre | |

13 Outline and Educational Aims of the Course

The aim of the HNC, HND and BSc is to provide a structured and coherent programme of study that offers an alternative pathway to well-motivated individuals within the region in which Solihull College and University Centre is situated. The programme is relevant to the needs of employers, facilitates CPD of the student and benefits the regional economy.

The programmes intend to:

- Provide students, from a wide range of educational backgrounds, with an opportunity for further study in the field of Aircraft Maintenance Engineering;
- Equip learners with the broad knowledge and ability to apply current technology to existing products and designs as well as developing new ones;
- Enable learners to have a sound understanding of engineering principles and the skills necessary to communicate them to others and develop them into finished products that meet customer expectations and agreed specifications;
- Provide a general education consistent with the appropriate level in the QAA framework for Higher Education Qualifications and the learning outcome statements of the Engineering Council's UK-SPEC

In addition, for those students studying at HND level, the programme will:

- Develop the learner's ability to reflect on their own work evaluating what worked, what can be improved and how the overall process can be changed for the better;
- Develop the learners' skills, personal qualities and attitudes essential for successful performance in working life through the integrated, but explicit, curriculum and assessment.

Satisfactory Completion of the HND provides progression to a BSc (Hons) Aircraft Maintenance Engineering course.

The BSc (Hons) programme intends to develop the aims above and also:

- The ability to critically appraise an engineering scenario with a view to apply new technologies to improve efficiency or effectiveness.
- How to use an enquiring, critical and reflective approach to engineering studies.
- Develop practical skills to solve complex workshop based problems.
- Key practical and transferable skills to enhance their long term employability or to progress to specialist, post graduate study.
- Develop the knowledge and skills to work towards professional membership of the Royal Aeronautical Society at an appropriate status.
- Develop the knowledge and skills to work towards professional certification of the EASA at B1 level with work experience.

14 Course Learning Outcomes

This programme satisfies the Engineering Benchmark statements, the Engineering Council learning outcomes on UK-SPEC and Coventry University's Code of Practice for Academic and Professional Skills Development.

The course content is designed to cover the areas of learning set out in AHEP-4 by the RAeS and the Engineering Council to meet the educational requirements for working towards a career as an Incorporated Engineer (IEng). These are: Science and Mathematics (SM), Engineering Analysis (EA), Design and Innovation (DI), Economic, legal, social, ethical and environmental context (EL), Engineering Practice (P) and Additional General Skills (G) The link between these areas of learning and the course learning outcomes is outlined in this section.

On successful completion of the HNC course a student will be able to:

1. Apply knowledge of scientific, mathematical and engineering principles to broadly-defined problems in the aviation maintenance industry (RAeS SM)
2. Analyse broadly-defined problems reaching substantiated conclusions using first principles of mathematics, statistics, natural science and engineering principles. (RAeS EA)
3. Select and apply appropriate computational and analytical techniques to model broadly-defined problems, recognising the limitations of the techniques employed. (RaeS EA)

4. Apply practical laboratory and workshop skills to investigate broadly-defined problems. (RaeS EP)
5. Develop independent learning and problem-solving skills appropriate to current and future study and employment. (RAeS EP)
6. Function effectively as an individual, and communicate effectively. (RAeS EP)

In addition, for those students studying at HND level, the programme will:

7. Function effectively as a member of a team, and communicate effectively with non-technical audiences. (RAeS EP)
8. Evaluate the environmental, ethical, and societal impact of solutions to broadly-defined problems. Apply a risk management process to identify, evaluate and mitigate risks and the effects of uncertainty. (RAeS ES)
9. Apply knowledge of engineering management principles, commercial context, project management and relevant legal matters. (RaeS EP)

In addition, for those students studying at BSc level, the programme will:

10. Function effectively as a leader of a team, and communicate effectively with technical audiences. (RAeS EP)
11. Apply a risk management process to evaluate and mitigate risks associated with a particular project or activity. (RAeS ES)
12. Design solutions for broadly-defined problems that meet a combination of societal, user, business and customer needs as appropriate. This will involve consideration of applicable health & safety, diversity, inclusion, cultural, societal, environmental and commercial matters, codes of practice and industry standards (RAeS DI)

Section 15 maps the intended learning outcomes as described in the next section to the programmes mandatory and optional modules (as listed in section 15). This section shows the capabilities that students will be taught, given the opportunity to practise and will be assessed in.

15 Course Structure, Modules, Credits and Progression and Award Requirements

The BSc course may be studied in the following modes of attendance:

- Full-time over three years of study for BSc.
- Full-time over four years with an industrial training placement being taken for one year between the second and third years of study.
- Part-time. The course can be studied in part-time mode over a duration of 6 years by attending the modules timetabled for full-time students. Students are normally expected to study 60 credits per year.

The HND course may be studied in the following modes of attendance:

- Full-time over two years of study.
- Part-time. The course can be studied in part-time mode over a duration of 4 years by attending the modules timetabled for full-time students. Students are normally expected to study 60 credits per year.

The HNC course may be studied in the following modes of attendance:

- Full-time over one year of study.
- Part-time. The course can be studied in part-time mode over a duration of 2 years by attending the modules timetabled for full-time students. Students are normally expected to study 60 credits per year.

15.1 Progression Through the Course

To progress from one stage to the next, students must normally pass all modules. Students who fail to pass sufficient modules to progress will be considered under the Academic Regulations. The outcome will be at the discretion of the Progression and Award Board (PAB).

The following table enables a holistic view of the learning outcomes and how the modules contribute to these. Total credits are within the maximum per level of study and module sizes are as defined in the academic regulations.

Modules within the course, their status (whether mandatory or optional), the levels at which they are studied, and their credit value are identified in the table overleaf.

| Semester | Credit level | Module Code | Title | Learning Credit | Assessment credit | Mandatory / Optional | Course Learning Outcomes |
|----------------------------------|--------------|-------------|---|-----------------|-------------------|----------------------|--------------------------|
| Stage 1 | | | | | | | |
| | 4 | SOL401ENG | Engineering Mathematics | 15 | 15 | M | 1,2 |
| | 4 | SOL402ENG | Engineering Science | 30 | 30 | M | 1,2 |
| | 4 | SOL403ENG | Electrical Fundamentals | 30 | 30 | M | 1,2,3 |
| | 4 | SOL404ENG | Aircraft Materials and Hardware | 15 | 15 | M | 4 |
| | 4 | SOL405ENG | Aerodynamics | 15 | 15 | M | 3 |
| | 4 | SOL406ENG | Employability Skills and Human Factors | 15 | 15 | M | 4,5,6 |
| Stage 2 | | | | | | | |
| | 5 | SOL501ENG | Electronic Fundamentals | 15 | 15 | M | 2,3,9 |
| | 5 | SOL502Eng | Aircraft Maintenance and Professional Practices | 30 | 30 | M | 4,5,9 |
| | 5 | SOL503ENG | Aviation Legislation & Management | 15 | 15 | M | 5,8,7 |
| | 5 | SOL504Eng | Gas Turbine Engine Science | 30 | 30 | M | 4,5 |
| | 5 | SOL505ENG | Piston Engine Science | 15 | 15 | M | 1,2,4 |
| | 5 | SOL506ENG | Physics of Propellers | 15 | 15 | M | 1,2,5 |
| Optional Enhancement Year | | | | | | | |
| | 5 | SOL507ENG | Professional Training Year | 0 | 0 | O | |
| Stage 3 | | | | | | | |
| | 6 | SOL601ENG | Digital Techniques | 15 | 15 | M | 3,5,12 |
| | 6 | SOL602ENG | Electronic Instrument Systems | 15 | 15 | M | 8,9,12 |
| | 6 | SOL603ENG | Aircraft Structures | 15 | 15 | M | 5,8,10 |
| | 6 | SOL604ENG | Aircraft Systems | 30 | 30 | M | 5,8,10 |
| | 6 | SOL605ENG | Advanced Aerodynamics | 15 | 15 | M | 5,8,10 |
| | 6 | SOL606ENG | Individual Project | 30 | 30 | M | 3,4,5,8,9,10,12 |

This programme can be followed in both part-time and full-time mode.

15.2 Professional Training and the award of Sandwich degrees

Students may undertake a year out in industry or a year studying abroad between Levels 5 and 6 of their course. Students will be enrolled onto the relevant module that they must take and pass to achieve recognition of this additional study on their degree transcript.

15.3 Industrial Requirements

In order to qualify as a licensed aircraft maintenance engineer, a series of regulatory licensing exams (which students have to sit and pay for separately) must also be passed, in addition to gaining adequate industrial experience.

15.4 Conditions for the award of an honours degree

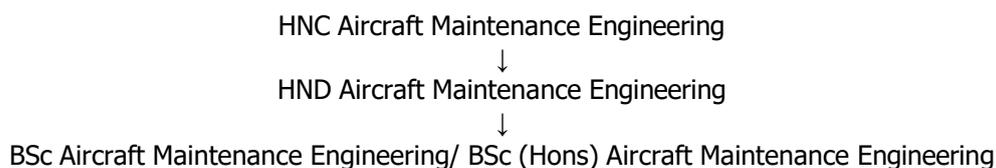
The award of an Honours degree from this course requires a student to achieve the minimum module counts specified in the University General Regulations. Honours classification is based on the calculation method described in the University Academic Regulations. Furthermore, 606SC Individual Project must be used in the calculation to obtain the BSc (Hons) Aircraft Maintenance Engineering.

15.5 Conditions for the fall back award

Students failing to meet the award requirements of the BSc (Hons) will be considered for alternative awards for which they satisfy the credit score count and mandatory module pass requirements. The requirements and classification calculations for these awards are as specified in the University Academic Regulations

| | Minimum Credits to be passed | | | |
|-------------------|------------------------------|---------|---------|---------|
| | Total | Level 1 | Level 2 | Level 3 |
| BSc (Hons) | 360 | 120 | 240 | 360 |
| HND | 240 | 120 | 240 | |
| HNC | 120 | 120 | | |

Cascade of Awards:



To progress between stages, students must usually have passed 90 credits from the previous stage.

16 Criteria for Admission and Selection Procedure

UCAS entry profiles may be found by searching for the relevant course on the [UCAS website](#), then clicking on 'Entry profile.' Alternatively, the entry requirements may be found within the course finder section of the Coventry University website.

Non-native English speakers are required to undertake an IELTS exam (International English Language Testing System) where the required score can be found on the course page along with entry requirements.

Applicants who do not meet the entry requirements can be reviewed on a case-by-case basis review against the Solihull College and University Center's academic regulations. Suitable evidence of the individual's further aptitudes will need to be demonstrated for the review such as industrial experience.

16.1 Entry Requirement Typical Minimum Example

UCAS entry profiles may be found by searching for the relevant course on the UCAS website, then clicking on 'Entry profile.' Alternatively, the entry requirements may be found within the course finder section of the Solihull College and University Centre website.

Non-native English speakers are required to undertake an IELTS exam (International English Language Testing System) where the required score can be found on the course page along with entry requirements.

Applicants who do not meet the entry requirements can be reviewed on a case-by-case basis review by Solihull College's Admissions Tutor/Course Director and Coventry University's Link Tutor. Suitable evidence of the individual's further aptitudes will need to be demonstrated for the review such as extensive industrial experience.

17 Academic Regulations and Regulations of Assessment

This Course conforms to the standard Coventry University's [University Academic Regulations](#) Undergraduate Mode E.

18 Indicators of Quality Enhancement

The Course is managed by the School of Future Transport Engineering Board of Study of the School of College of Engineering, Environment and Science.

The Progression and Awards Board (PAB) for College of Engineering, Environment and Science is responsible for considering the progress of all students and making awards in accordance with both the University and course-specific regulations.

The assurance of the quality of modules is the responsibility of the Boards of Study which contribute modules to the course.

External Examiners are appointed by Coventry University's Academic Board for all courses that lead to an academic award. External Examiners have the opportunity to moderate all assessment tasks and a sample of assessed work for each module. They will report annually on the course and/or constituent modules and their views are considered as part of the Course Quality Enhancement and Monitoring (CQEM) process.

The EASA examinations will be taken at an approved (EASA) or Civil Aviation Authority (CAA) – Airworthiness Approved Organisation with a B1 Theoretical Licence category. Example Organisation as dated Jan 2024 VOLARE Aviation Limited – Oxford Airport with Bombardier, Embraer, Gulfstream, BAe and Augusta aircraft. EASA follow the Quality Assurance Framework CAP2204.

Student views are sought through module and course evaluation questionnaires and the student consultative processes. There is also student representation on a range of key committees at course, School and Faculty level.

The QAA's Higher Education Review undertaken in February 2016 confirmed that Solihull College and University Centre meets the UK expectations regarding the:

- Setting and maintenance of the academic standards of awards
- Quality of student learning opportunities
- Quality of the information about learning opportunities
- Enhancement of student learning opportunities

This Engineering Course has been designed in accordance with the:

- QAA Engineering Subject Benchmark statement [October 2019]
 - UK Standards for Professional Engineering Competence [Fourth Edition]
 - Engineering Council Accreditation of Higher Education Programmes
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Additional Information

Enrolled students have access to additional, key sources of information about the course and student support including,

- Student Handbook
- Course Handbook
- Module Guides
- Moodle Course
- UKCAA Examination Information: <https://www.caa.co.uk/commercial-industry/aircraft/airworthiness/engineer-licences/examinations/aircraft-maintenance-licence-examinations/>
- Study Support Information: Upon commencement of the course, each student will be assigned a Personal Tutor. The Personal Tutor serves as a vital intermediary between the student and the college, facilitating communication and support. They are tasked with specific responsibilities concerning the student's academic journey. In return, students are expected to maintain open communication with their Personal Tutor, keeping them informed about any matters that may impact their studies.

