UNIVERSITY OF WOLVERHAMPTON

Course Specification

Published Date:	18-Jul-2025
Produced By:	Multi Type Usr Record For All Personnel
Status:	Validated

Core Information

Awarding Body / Institution:	University of Wolverhampton		
School / Institute:	School of Architecture, Computing and Engineering		
Course Code(s):	MA031H01UF	Full-time	3 Years
UCAS Code:	H400		
Course Title:	BEng (Hons) Aerospace Engineering		
Hierarchy of Awards:	Bachelor of Engineering with Honours Aerospace Engineering Bachelor of Engineering Aerospace Engineering Diploma of Higher Education Aerospace Engineering Certificate of Higher Education Aerospace Engineering		
Language of Study:	English		
Date of DAG approval:	15/Sep/2025		
Last Review:	2024/5		
Course Specification valid from:			
Course Specification valid to:	2030/1		

Academic Staff

Course Leader:	Andrew Barnett
Head of Department:	

Course Information

Location of Delivery:	University of Wolverhampton
Category of Partnership:	Not delivered in partnership - Standard Provision
Teaching Institution:	University of Wolverhampton
Open / Closed Course:	This course is open to all suitably qualified candidates.

Entry Requirements:

Entry requirements are subject to regular review. The entry requirements applicable to a particular academic year will be published on the University website (and externally as appropriate e.g. UCAS

• 104 UCAS points

• A Levels - grades BCC including Maths and either a Technology or Science-based subject

• BTEC L3 Extended Diploma (Technology or Science-based subject) or OCR Cambridge L3 Technical Extended Diploma (Technology or Science-based subject) - grades DMM

• Access to HE Diploma (60 credits) of which a minimum of 45 must be at Level 3 (104 UCAS points equivalence) in a Maths, Science or Technology based subject.

Applicants will normally be expected to hold GCSE English and Maths at grade C+/4 or above (or equivalent)

Use the UCAS Tariff calculator to check your qualifications and points

Students must usually have studied for a minimum of two years post GCSE level. However, we will consider applications from mature students who do not have two years of post-16 study, where they have relevant work experience. Please see http://wlv.ac.uk/mature for further information.

If you've got other qualifications or relevant experience, please contact The Gateway for further advice before applying.

International entry requirements and application guidance can be found at http://www.wlv.ac.uk/international/apply

If you've got other qualifications or relevant experience, please contact the Gateway for further advice before applying.

Distinctive Features of the Course:

Course Overview :

Our BEng Aerospace Engineering course will provide you with the necessary skills and knowledge to excel in the highly competitive sector. The course structure is devised along the AHEP 4 standards set by Engineering Council UK.

The highlight? An industry-informed blend of theory and hands-on practice, plus regular industry-led projects, expert industrial talks, and an opportunity to design, build, and compete with your own aircraft in the global Unmanned Aerial System (UAS) challenge, organised by the Institution of Mechanical Engineering.

Year 1: Foundations and Fundamentals

- Core Concepts: Dive into essential engineering topics like solid and fluid mechanics.

- Industry-Led Projects: Collaborate on projects tackling real-world challenges such as sustainable fuels and alternative propulsion systems.

- Cutting-Edge Skills: Get introduced to Computer Aided Design (CAD), Computational Fluid Dynamics

(CFD), and Finite Element Analysis (FEA), crucial tools for the motorsport and automotive sectors.

Year 2: Specialisation and Depth

- Focused Learning: Hone your skills in designing and analysing key components such as structural elements and cockpit.

- Advanced Computational Analysis: Delve deeper into CFD and FEA tailored to industry needs.

- Enterprise Project: Continue your interdisciplinary project, exploring unique aspects like aerodynamics or avionics.

Year 3: Application and Innovation

- Specialist Knowledge: Further specialise and develop key skills that enhance your employability.

- Practical Application: Work on new models and parts for our industrial partners.

- Showcase Your Talent: Present your individual and group projects at our annual “Innovations Unleashed” event, celebrating with industry leaders.

Distinctive Features

1. Project-Based Learning: Engage in hands-on, industry-led projects.

2. State-of-the-Art Tools: Master CFD, FEA, and practical skills.

3. Cutting Edge Facilities: Experience industry-standard facilities, from metal 3D printing to composite manufacturing, tailored to aerospace.

4. Industry Connections: Tackle problems linked to aerospace industries.

5. Build Your Drone: Build and compete with your own drone representing the University in highly prestigious competitions.

6. Networking Opportunities: Build a strong network with frequent industry interactions.

7. Alumni Network: Connect with our alumni thriving in UK’s aerospace sector.

Ready to take off? Dive into the cutting-edge world of aerospace and become a key player in the UK's booming aerospace industry!

Educational Aims of the Course:

Get ready to launch your career in aerospace engineering!

Course Aim

We’re here to ensure you get hands-on learning combined with in-depth knowledge of Aerospace Engineering, all recognised by the professional engineering community with an accredited degree. Here’s how:

- Industry-Ready Skills: Learn to design and analyse top-notch aerospace systems and products to meet industry demands.

- Live Projects: Dive into live projects with drone design and fabrication or industry projects, either solo or in teams, gaining invaluable design, research, and team management skills.

- High-Tech Tools: Excel in industry-standard analysis packages CFD and FEA for cutting-edge motorsport tech design.

- Professional Judgement: Develop the ability to make informed decisions in complex situations with a responsible, ethical, and sustainable mindset.

- Interactive Learning: Engage with continuous assessments and project-based learning for a thorough understanding of Aerospace Engineering principles.

- Strategic Problem Solving: Tackle complex engineering challenges with strategic, innovative techniques.

- Skill Showcase: Combine industry-standard practicals with soft skills, like communication and teamwork, while learning about the latest developments in systems and parts. Collaborate with industrial partners on real-world problems and tackle exciting challenges head-on.

Are you ready to take on the challenge?

Intakes:

September

Major Source of Funding:

Office for Students (OFS)

Tuition Fees:

Tuition fees are reviewed on an annual basis. The fees applicable to a particular academic year will be published on the University website.

Year	Status	Mode	Amount
2020/1	H	Full Time / Sandwich	£9250.00
2020/1	Overseas	Full Time / Sandwich	£12250.00
2021/2	H	Full Time / Sandwich	£9250.00
2021/2	Overseas	Full Time / Sandwich	£12950.00
2022/3	H	Full Time / Sandwich	£9250.00
2022/3	Overseas	Full Time / Sandwich	£13450.00
2023/4	H	Full Time / Sandwich	£9250.00
2023/4	Overseas	Full Time / Sandwich	£14450.00
2024/5	H	Full Time / Sandwich	£9250.00
2024/5	Overseas	Full Time / Sandwich	£14950.00
2025/6	H	Full Time / Sandwich	£9535.00
2025/6	Overseas	Full Time / Sandwich	£15995.00

PSRB:

None

Course Structure:

September (Full-time)

Full time and Sandwich Undergraduate Honours students normally study 120 credits per academic year.

Part time students study alongside full time students. However, they do not study more than 80 credits in each academic calendar year.

Module	Title	Credits	Period	Type
4MA031	Engineering Principles	40	YEAR	Core
4MA032	Engineering Analysis	40	YEAR	Core
4MA033	Engineering Practice	40	YEAR	Core

September (Full-time)

Full time and Sandwich Undergraduate Honours students normally study 120 credits per academic year.

Part time students study alongside full time students. However, they do not study more than 80 credits in each academic calendar year.

Module	Title	Credits	Period	Type
5MA046	Applied Computational Engineering Analysis	40	YEAR	Core
5MA047	Applied Instrumentation and Control	20	SEM2	Core
5MA051	Thermofluids and aircraft propulsion	20	SEM1	Core
5MA049	Enterprising Group Innovation project	40	YEAR	Core

September (Full-time)

Full time and Sandwich Undergraduate Honours students normally study 120 credits per academic year.

Part time students study alongside full time students. However, they do not study more than 80 credits in each academic calendar year.

Module	Title	Credits	Period	Type
6MA056	Group Aircraft Design and Enterprise	40	YEAR	Core
6MA055	Advanced Aerospace Design and Analysis	40	YEAR	Core
6MA054	Individual Innovation project	40	YEAR	Core

Please note: Optional modules might not run every year, the course team will decide on an annual basis which options will be running, based on student demand and academic factors, to create the best learning experience.

Learning, Teaching and Assessment

Academic Regulations Exemption:

Section 4.6.2 - A maximum of 30 credits can be compensated for a bachelors degree. Major individual project modules (40 credits) cannot be compensated.
Section 6.2.4 - The best 180 credits, including the project modules at Level 5 and Level 6, count towards degree classification.

Reference Points:

UK Quality Code for Higher Education

Qualifications and Credit Frameworks

Subject Benchmark Statements

University Policies and Regulations

University Inclusive Framework

Equality Act (2010)

Overview of Assessment:

As part of the course approval process, the course learning outcomes were mapped to each of the modules forming the diet of the programme of study. This process confirmed that all course learning outcomes can be met through successful completion of the modules. This mapping applies to the final award as well as to all of the intermediate awards.

Learning Outcomes	Modules
CERTHE01 Science and Maths: Demonstrate knowledge of the underlying concepts and principles associated with aerospace engineering, and an ability to evaluate and interpret these within the context of aerospace projects.	
CERTHE02 Engineering Analysis: Demonstrate an ability to present, evaluate and interpret qualitative and quantitative data in aerospace engineering, in order to develop lines of argument and make sound judgements in accordance with basic theories and concepts of aerospace principles. Evaluate the appropriateness of different approaches to solving problems related to aerospace engineering and/or projects.	
CERTHE03 Design and Innovation: Apply basic project-specific aerospace principles including in the workplace, where relevant.	
CERTHE04 The Engineer and Society: Communicate the results of your aerospace study/work accurately and reliably, and with structured and coherent arguments.	
CERTHE05 Engineering Practice: Demonstrate the qualities and transferable skills necessary for employment in the aerospace industry, requiring the exercise of some personal responsibility.	
DIPHE01 Science and Maths: Show understanding and critical understanding of the core principles of aerospace engineering, how they have evolved, and recognise the limits of your knowledge and its impact on analysis and interpretation within aerospace projects.	
DIPHE02 Engineering Analysis: Demonstrate the ability to apply the underlying concepts in aerospace engineering, critically evaluate different problem-solving approaches, and use established techniques to analyse information and propose solutions in aerospace projects.	
DIPHE03 Design and Innovation: Apply fundamental aerospace principles in new contexts, including in the workplace, where relevant.	
DIPHE04 The Engineer and Society: Communicate effectively information, arguments, and analyses of key engineering concepts to both specialist and non-specialist audiences.	

Learning Outcomes	Modules
DIPHE05 Engineering Practice: Demonstrate transferable skills for employment in the aerospace industry, including personal responsibility, decision-making, and the ability to undertake further training, developing existing skills and acquire new competences that will enable them to assume significant responsibility within organisations.	
BHONSN01 Science and Maths: Apply advanced knowledge of mathematics, statistics, natural science, and aerospace engineering principles to analyse and solve complex problems in the aerospace industry.	
BHONSN02 Engineering Analysis: Utilise computational and analytical techniques, along with aerospace technical literature, to model and address complex problems in aerospace projects.	
BHONSN03 Design and Innovation: Design integrated aerospace solutions for complex problems that meet diverse needs while considering health, safety, societal, environmental, and commercial factors specific to the aerospace industry.	
BHONSN04 The Engineer and Society: Evaluate and minimise the environmental and societal impacts of aerospace engineering solutions, make ethical decisions, and support equality, diversity, and inclusion within aerospace principles.	
BHONSN05 Engineering Practice: Demonstrate and develop practical skills, appropriate materials, and technologies in aerospace engineering, manage risks, ensure quality, and communicate effectively while continuously developing professionally in aerospace projects.	
BHONS01 Science and Maths: Apply advanced knowledge of mathematics, statistics, natural science, and aerospace engineering principles to analyse and solve complex problems in the aerospace industry.	
BHONS02 Engineering Analysis: Utilise computational and analytical techniques, along with aerospace technical literature, to model and address complex problems in aerospace projects.	
BHONS03 Design and Innovation: Design integrated aerospace solutions for complex problems that meet diverse needs while considering health, safety, societal, environmental, and commercial factors specific to the aerospace industry.	
BHONS04 The Engineer and Society: Evaluate and minimise the environmental and societal impacts of aerospace engineering solutions, make ethical decisions, and support equality, diversity, and inclusion within aerospace principles.	
BHONS05 Engineering Practice: Demonstrate and develop practical skills, appropriate materials, and technologies in aerospace engineering, manage risks, ensure quality, and communicate effectively while continuously developing professionally in aerospace projects.	

Learning Outcomes	Modules
BHONS06 Research and Development: Demonstrate the ability to conceptualise, design, and solve a complex aerospace project supported by technical literature review and critically developed milestones, and generate a technical report.	

Teaching, Learning and Assessment:

The following learning activities support the achievement of the course learning outcomes:

1. Industry-Informed Content: Course structure and content informed by industrial partners and our championship-winning racing team, enhancing practical learning and industry readiness.

2. Industry Interaction: Learn from guest lectures by industry professionals and insights from experienced alumni, enhancing both learning and employability.

3. Project-Based Learning: Apply problem-solving techniques through design projects and case studies.

4. Real-World Solutions: Provide innovative solutions to meet real-world engineering problems and requirements.

5. Software and Simulation: Use computer software and hardware to model and simulate engineering systems and products.

6. Small Group Tutorials: Personalised instruction in small groups to enhance learning and provide tailored support.

7. Formative and Summative Assessments: Combination of ongoing formative assessments to guide learning and summative assessments to evaluate overall mastery.

8. Personalized Assessments: Experience thorough evaluations designed to enhance your unique strengths and foster your growth, tailored to your individual skills.

9. Research and Criticality: Core and supplementary texts, journals, and electronic sources to stay updated with the latest developments, critically gauge and inform your design decisions.

10. Professional Practice Activities and Team Projects: Participate in UAS challenge part of UWA (University of Wolverhampton Aerospace) on of our professional practice activities where you can be part of projects to develop teamwork skills in a multi-disciplinary environment.

11. Written and Oral Presentations: Prepare and present analytical and textual reports, both individually and in groups.

12. Systematic Methods: Apply structured methods to develop novel solutions and critically examine data.

13. Build Your Expertise: Learn new skills and build your own skill-set following an evidence-based certification by experts.

14. Innovation Unleashed: Annual engineering innovation fair celebrating student success and offering networking opportunities.

15. Employability: Set yourself ahead of the competition by networking with our industrial partners from your first year and building the confidence to engage in fruitful discussions and interviews.

Unique assessment structure with:

- 40% Fundamentals: Continuously assessed throughout the semesters.

- 60% Specialisation: Focused on specialised skills and advanced knowledge within your Discipline.

Assessment Methods:

At the University of Wolverhampton, a variety of modes of assessment will be used to support and test your learning and progress and to help you develop capabilities that are valued beyond your University studies and into your working life. Your course may include a variety of assessment activities:

Written examinations (including online examinations, open and closed book examinations and quizzes)
Coursework (for example, essays, reports, portfolios, project proposals and briefs, CVs, poster presentation)
Practical (for example, oral and video presentations, laboratory work, performances, practical skills assessment)

In the final year of your undergraduate degree, and at the end of your postgraduate degree, you are likely to be expected to write an extended piece of work or research, such as a dissertation or a practice-based piece of research.

Student Support:

University Library and Study Skills

The University Library is a key source of academic information for students. The Library provides access to a wide range of online information sources, including eBooks, e-Journals and subject databases as well as printed material. A range of study spaces are available in each of our libraries, including social, quiet and silent areas. In addition to our day to day on campus support, our online Ask the Library chat service, ASSIST, is staffed 24 hours a day.

The University Library also provides students with academic skills support via the Skills for Learning programme. Students can attend workshops or ask for one-to-one help on a range of skills such as academic writing and referencing. Support is available both on campus and virtually via the VLE, and a range of online skills material is also available at: www.wlv.ac.uk/lib/skills

Student Support and Wellbeing Services

The University offers a range of counselling and support services with specialists teams including:

1. Disability and Inclusion

2. Mental Health and Wellbeing

3. Multi-faith Chaplaincy

4. Care leavers/estranged students

5. Student Funding

Students are encouraged to contact any team through their dedicated pages at Student Support and Wellbeing (SSW) - University of Wolverhampton or via the ASK@WLV helpdesk. Support is provided face-to-face or online with routine drop-in sessions and appointments.

Employability in the Curriculum:

Competitive Edge:

- Practical skills, industry-specific knowledge, strong engineering background.

- Development of soft skills: problem-solving, teamwork, communication, and adaptability.

Learning Experience:

- Internships, workshops, and practical-based learning.

- Acquisition of theoretical knowledge.

- Unleash your creativity via frequent project work.

Career Readiness:

- Curriculum aligned with industry requirements.

- Seamless transition from education to employment.

- Equipping graduates with in-demand skills sought by employers.

- Enhanced employability prospects.

- Regular industrial engagement experiences.

Employment Opportunities:

- Wide range of opportunities in technical environments globally.

- Careers in:

1. Airplane design and manufacturing

2. Research and Development

3. Aerospace manufacturing

4. High Performance Technical Consultancy (Motorsport, Aerospace and beyond)