PRESTON COLLEGE UNIVERSITY CENTRE

MAP03 Engineering Design, Quality & Production

MAP MODULE COURSE SPECIFICATION

Modular Acceleration Programme (MAP)

About the MAP
Preston College has been approved to offer specific modules through the modular acceleration programme (MAP). The modular acceleration programme is a 2-year pilot to fund tuition fees for learners who study specific modules of higher technical qualifications (HTQ), such as a Higher National Certificate (HNC) at level 4. Learners do not need to pay back any tuition fees. However, the funding accessed for MAP will reduce the amount remaining in a future Lifelong Learning Entitlement account. This is called the 'residual entitlement'.

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INTRODUCTION

Programme Code	PC45463
Programme Title	MAP03 Engineering Design, Quality & Production
Teaching Institution	Preston College
Professional, Statutory and Regulatory Body (PSRB) Accreditation	N/A
Language of Study	English
Version	Version 1
Approval Status	Approved for delivery
Approval Date	September 2024

COURSE OVERVIEW

The MAP03 module is designed to provide a strong foundation for additional engineering training and education, while equipping learners with employable skills that are immediately applicable in the sector. Students can leverage both their understanding of engineering design and production processes alongside practical skills in quality assurance to take their next steps on an exciting and rewarding engineering career path. The flexibility of completing the module in 12 weeks allows students to upskill and gain valuable credits without needing to commit to a full qualification straightaway.

WHO IS THE COURSE FOR?

This course is designed for individuals who meet the following MAP eligibility criteria:

- Aged 19-60
- Living in England or living outside England but working in England
- Looking to retrain for a new career in the construction industry or upskill for their current built environment job

This may include:

- Those currently working in engineering who want to enhance their design, production and quality skills
- Individuals from other sectors considering a career change into engineering
- Adults seeking to retrain for employment opportunities in engineering industries
- Self-employed engineers or technicians looking to expand their services
- Professionals in adjacent fields, such as product design, who interface with engineering
- Those who started but did not complete an engineering qualification and want to resume their education
- Adults returning to the workforce who are interested in engineering careers
- Individuals who want to take the first step towards a Higher Technical Qualification in engineering

CAREER OPTIONS AND PROGRESSION OPPORTUNITIES

Upon successful completion of the course, students may consider the following progression routes:

- Combining MAP03 with other engineering MAP modules to build credits towards a full Higher Technical Qualification
- Further study through a HNC/HND in Engineering, Manufacturing Engineering or Quality Assurance
- A higher or degree apprenticeship in Engineering Design, Manufacturing Engineering or Quality Management
- Applying for technician or associate level roles in engineering design, production or quality
- Continuing professional development for existing engineering professionals, working towards Incorporated or Chartered status
- Pursuing certifications in specific engineering software applications or quality methodologies to demonstrate skills to employers

COURSE AIMS

The Engineering Design, Quality and Production programme delivered as part of the MAP pilot, aims to provide students with an understanding of the methodical steps engineers use to create functional products and processes, both individually and as part of a design team. It explores how to optimise production processes and facilities for manufacturing products from different materials. The course also covers quality assurance concepts and tools to ensure products meet required standards. By combining these units, students gain an integrated perspective on the engineering product lifecycle from design through manufacture to final inspection.

COURSE OVERVIEW

Unit 4001: Engineering Design

LO1: Create a design specification for a given design brief that meets stakeholder's requirements
LO2: Analyse possible technical solutions to implement the design specification
LO3: Produce a design report considering manufacturability and environmental impact
LO4: Present the design solution to an audience, including evaluation of feedback

Unit 4014: Production Engineering for Manufacture

LO1: Illustrate the role and purpose of production engineering and its relationship with other manufacturing elements
LO2: Describe the most appropriate production processes and facility arrangements for different material types
LO3: Analyse how a production system can incorporate different processes for a product
LO4: Explore the effectiveness of a production system within the wider manufacturing context

INDICATIVE COURSE STRUCTURE

Week 1
Course introduction, overview of engineering design and production
Weeks 2-11
Integrated delivery of engineering design and production engineering content, building from fundamentals to advanced topics, with formative assessment at midpoint
Week 12
Course review and reflection Summative assessment submission Next steps and progression opportunities

STUDY WORKLOAD

Whilst we have designed the course to be as flexible as possible, it's important to be realistic about the time and effort you'll need to invest outside of the classroom to get the most out of this course.

So, what does independent study involve?
Independent study is all the learning activities you'll do on your own time, outside of the scheduled lectures, workshops, and tutorials. This could include:

- Reading up on industry trends and best practices
- Watching software tutorials and practicing your modelling skills
- Researching case studies and real-world examples to inspire your projects
- Completing quizzes and assignments to check your understanding
- Reflecting on your progress and setting goals for improvement
- Collaborating with your classmates on group projects and discussions

How much time should you expect to spend on independent study?

The course is designed to be completed over 12 weeks, combining guided learning and independent study. This means that for every hour you spend in class, you should plan to spend about 1.5 hours studying on your own. Of course, some weeks may be more intense than others, depending on the topic and your assignment deadlines. But as a general rule, you should aim to set aside at least a couple of hours each day for independent study.

TEACHING, LEARNING AND ASSESSMENT

The course will be delivered through a blend of lectures, workshops, case studies and directed self-study. Students will have opportunities to work individually and collaboratively to apply their learning to real-world scenarios. Formative assessment and feedback will support progress towards the final summative assessment.

SKILLS DEVELOPMENT

The MAP03 Engineering Design, Quality and Production course offers the opportunity to develop a range of technical and transferable skills that are highly valued in the engineering sector and beyond. These skills can support career progression, further study, and personal development.

Key technical skills developed through this course include:

- Engineering design
- Production processes
- Quality assurance

Transferable Skills

- Critical thinking and problem-solving
- Research and information literacy
- Communication and collaboration
- Commercial awareness and financial acumen
- Decision-making and leadership
- Adaptability and resilience
- Time management and personal organisation
- Professionalism and ethics

ENTRY REQUIREMENTS

At Preston College, we recognise that adult learners bring a wealth of experience and diverse backgrounds to their studies. Our entry requirements for the MAP03 Engineering Design, Quality and Production course are designed to be flexible and inclusive, while ensuring that learners have the necessary foundation to succeed in this challenging and rewarding field.

To apply, you should meet at least one of the following criteria:

- GCSEs at grade 4 or above in English and mathematics (or equivalent qualifications)
- A Level 3 qualification or apprenticeship in a subject related to engineering
- Relevant work experience in the construction industry or a related field

We also consider applicants who can demonstrate relevant skills or knowledge gained through work or life experience. We understand that learning happens in many ways, and we'll take the time to understand your unique background and potential.

Enhancing Your Learning Experience

If you're not currently working in an engineering role, we encourage you to seek out paid or voluntary work opportunities alongside your studies. This will allow you to apply your new skills in a real-world setting, making your learning more meaningful and boosting your employability.

Our team is here to support you throughout the application process and your learning journey. We understand that returning to education as an adult can be challenging, and we're committed to providing the guidance and resources you need to succeed. If you have any questions about the entry requirements or whether this course is right for you, please get in touch. Contact Us - Preston College

TUITION COSTS

The course is fully funded by the government as part of the Modular Acceleration Programme (MAP) pilot. This means that if you meet the eligibility criteria, you can study this course without paying any tuition fees.

RELATED COURSES

MAP04 Production Engineering for Manufacturing
HNC Manufacturing Engineering for England (HTQ)
For more information, please visit Engineering Courses (preston.ac.uk)