

T Level in Design and Development for Manufacturing and Engineering (Mechanical)

Ofsted Outstanding Provider

Course Level: Level 3 | **Campus: Newcastle** | **Subject Type: Construction & Engineering**

Course Overview:

Explore the intricate relationship between design, manufacturing, and engineering.

Delve into essential mathematical concepts crucial for engineering and manufacturing success. Understand materials processing techniques, their impact on product quality, and develop a keen sense of business awareness to navigate the commercial landscape effectively.

What's Covered:

The world of engineering is fast-paced and ever-changing with an array of exciting opportunities available for aspiring engineers. Studying this pathway aims to develop your understanding of engineering disciplines and you will have the opportunity to where working directly within the engineering industry on your work placement.

The T-Level Engineering programme gives in-depth technical skills development with Year One encompassing all aspects of 'Core Engineering' including:

- Mechanical and Electrical Engineering
- Mechatronics
- Business, finance and commercial
- Continuous improvement
- Maths and science
- Digital engineering systems

As part of your studies, you will be expected to undertake a work placement to enhance and develop not only your education of the industry, but also to gain valuable industrial training with your employer placement. This work placement opportunity can be achieved using a range of options, and is subject to the employer's requirements. The placement can be achieved using a block placement or day release. Employers are keen to engage and train students in engineering due to the skills gaps in the industry.

You will continue with your work placement alongside planning, designing and managing an employer set engineering project. In college you will be able to specialise in Design Engineering and you will have access to the latest specialist technical equipment to help you to stand out from the crowd.

In Year two of study you can choose between either:

- Mechanical Engineering Occupational Specialism
- Electrical/Electronic Engineering Occupational Specialism

Mechanical Engineering Occupational Specialism

The Purpose of this specialism is to understand Design and Development Engineering principles within mechanical engineering applications. You will be able to:

- Interpret and analyse engineering and manufacturing technical drawings and digital designed content and specifications.

100%

pass rate

85%

achieved Merit or above in 2026

- Design and develop mechanical engineering manufacturing systems, products, components and processes, developing solutions and consider manufacturing constraints when developing your ideas and projects.
- Evaluate systems and designs, components and processes, managing and implementing manufacturing design information to develop mechanical systems.
- Collaborate to manage, test and quality assure mechanical engineering and manufacturing processes and outcomes with considerations to environments, sustainability and Health and Safety.

Electrical/Electronic Engineering Occupational Specialism

The Purpose of this specialism is to understand Design and Development Engineering principles within Electrical/Electronic engineering applications. You will be able to:

- Interpret and analyse engineering drawings and digital designed content and specification within Electrical and Electronic engineering design principles.
- Design and develop electrical engineering circuits, using electrical science techniques and mathematical theory and methods in the use of PCB and PLC manufacturing and the relevant legislation and regulations.
- Evaluate circuit design systems, installation and testing and fault diagnosis along with design evaluations.
- Collaborate to manage, test and quality assure electrical/ electronic engineering and manufacturing processes and outcomes with considerations to environments, sustainability and Health and Safety.

Entry Requirements:

As a condition of being offered a place on this course, you would be expected to meet the following entry requirements:

- Submit a school report showing your attendance, behaviour and effort details
- You will need to achieve/have achieved 5 GCSEs at grade 5 or above including Maths and English Language

Assessment Information:

You will be assessed through a combination of exams, coursework, work based observations, an employer project and an end point assessment.

Fees and Financial Support:

This course is free for anyone aged 16 – 18.

College Maintenance Allowance (CMA):

Anyone with a gross household income under £35,000 can receive financial support to cover college related costs such as transport, meals, course equipment and uniform. Bursary support is based on individual circumstances and will be allocated to best suit your individual needs. A range of other financial support is available depending on your personal circumstances. For more details visit nscg.ac.uk/finance

Progression:

This course will prepare you for a career in design and development for engineering. Upon successful completion of the course, you may consider a career as a Design Engineer. The Royal Academy of Engineering, Siemens, Autodesk CAD and the Ministry of Defence are a few of the many top organisations who have validated this Level 3 two-year programme for 16-19 year olds. On completion, students can progress onto Higher Technical qualifications at Level 4 and 5, Higher Apprenticeships or degrees up to Level 6.

What else do I need to know?

Attendance to our departmental Experience Day in June 2027 will be an entry requirement onto any course within the Construction and Engineering department.

How do I find out more?

To find out more, please contact Shane Edwards, Curriculum Leader, on 01782 254117 or by emailing shane.edwards@nscg.ac.uk