

ENGINEERING & MANUFACTURING



WHAT ENGINEERS DO:

Engineers are the wealth creators for the West Midlands and around the world. The culture and essence of engineering is about problem solving. Engineers and Engineering Technicians design, create and maintain all the products and machinery you have ever seen and some you can't see i.e. 'medical implants'. No business or enterprise can work without the skills of qualified Engineers.

At Dudley College we offer a wide range of engineering and technology courses, staffed by highly qualified and skilled engineering practitioners. We have invested substantial sums of money on new equipment and technology resources to enhance the learning experience for our students.

Please seek instruction for Electrical Installation programmes.

For further information on careers in the Engineering industry visit: www.aimhigherwm-alps.org or call Student Services on **01384 363363** for a careers interview.

ELECTRICAL/ ELECTRONIC ENGINEERING

BTEC NATIONAL DIPLOMA - LEVEL 3

REF: 1857

WHICH CAMPUS?

Broadway Campus

WHAT WILL I STUDY?

The course will enable you to develop skills and acquire knowledge of the Electrical and Electronic industry in order to obtain employment as a Technician.

You will study 18 units in total:

Core units

- Mathematics
- Communication and business systems for technicians
- Electrical & electronic principles
- Project

Optional units

- Electrical applications
- Three phase systems
- Three phase motor systems & drives
- Programmable controllers
- Inspection & testing of low voltage installations
- Electrical installations
- Electronics
- Digital electronics
- Analogue electronics
- Electronic computer aided design
- Project

HOW WILL I BE ASSESSED?

You will be assessed through tests, assignments/ coursework and a final year project.

WHAT ARE THE ENTRY REQUIREMENTS?

You must hold a First Diploma in Electrical/ Electronic Engineering

OR an appropriate C&G qualification or 4 appropriate GCSEs (which must include Maths) at grade C or above or Electrical Installation Part 1 (subject to tutor reference and interview).

HOW LONG?

2 years.

WHAT NEXT?

An Apprenticeship, HNC/HND Electrical/ Electronic Engineering, University Degree or employment in electronics servicing or computer maintenance.

ELECTRONICS & COMPUTING

BTEC NATIONAL AWARD CERTIFICATE OR
DIPLOMA - LEVEL 3

REF: 2937

WHICH CAMPUS?

Broadway Campus

WHAT WILL I STUDY?

The course will enable you to develop skills and acquire knowledge of the Electronics and Computing industry in order to obtain employment as a Technician.

You will study 18 units in total:

Core units

- Mathematics
- Communication for technicians
- Electrical & electronic principles
- Project
- Business Systems

Optional units (depending on the qualification you are taking)

- Programmable controllers
- Software development
- Further electrical & electronic principles
- Further electronics
- Electronics
- Digital electronics
- Electronic computer aided design
- Project
- PC Maintenance
- Control systems
- Electronic fault finding
- Electro, pneumatic and hydraulic systems and devices

HOW WILL I BE ASSESSED?

You will be assessed through tests, assignments, coursework and a final year project.

WHAT ARE THE ENTRY REQUIREMENTS?

You will need 4 GCSEs at grade C or above including Maths and English or BTEC First Engineering or an appropriate City & Guilds qualification.

HOW LONG?

2 years.

WHAT NEXT?

HNC/HND Electrical/Electronic Engineering, University Degree or employment in electronics servicing or as a Computer Engineer.



ENGINEERING

BTEC FIRST DIPLOMA - LEVEL 2

REF: 2936

WHICH CAMPUS?

Broadway Campus

WHAT WILL I STUDY?

A BTEC First Diploma is a practical, work related course. You learn by completing projects and assignments that are based on realistic workplace situations, activities and demands.

You will study the following:

Mandatory units

- Working practices in engineering
- Maths for engineering
- Using and interpreting engineering information
- Electrical & mechanical science for engineering

Optional units

- Electronic circuit construction and testing
- Computer aided design for technicians
- Programming CNC machines
- Engineering materials
- Secondary material removal using machines (lathe/mill etc.)

HOW WILL I BE ASSESSED?

You will be assessed by projects, assignments and tests.

WHAT ARE THE ENTRY REQUIREMENTS?

You will need 4 GCSEs at grade D or above in Maths, Science and English or equivalent vocational qualification, and an aptitude for Computing.

HOW LONG?

1 year.

WHAT NEXT?

BTEC National Award in Engineering, BTEC National Diploma or Certificate in Electrical/Electronic Engineering or Manufacturing Engineering or BTEC National Diploma or Certificate in Mechanical Engineering.

With further training or education, you may progress into careers including: electrical installations, electronics, computing, machining, computer aided design, control systems engineering.

ENGINEERING (ELECTRICAL/ MANUFACTURING)

BTEC NATIONAL AWARD - LEVEL 3

REF: 2826

WHICH CAMPUS?

Broadway Campus

WHAT WILL I STUDY?

This course is designed to provide a route to higher education for those wishing to study Engineering full-time and holding some level 2 qualifications.

The course will help to develop self-confidence and academic ability to progress to study at HNC/D or Degree level. During the course you will study:

Compulsory units

- Mathematics for technicians
- Science for technicians
- Engineering drawing
- Communications for technicians
- Electrical/electronic principles

Optional units

- Engineering materials
- Computer aided design
- Primary forming processes

HOW WILL I BE ASSESSED?

You will be assessed through timed assignments, coursework, projects.

WHAT ARE THE ENTRY REQUIREMENTS?

You will need to have one of the following:
4 GCSEs at grade C or above
OR BTEC First Engineering
OR appropriate City & Guilds qualification.

HOW LONG?

1 year.

WHAT NEXT?

HNC/D in Engineering, a Degree at University. or a career as a Design Engineer.

ENGINEERING (MANUFACTURING)

BTEC NATIONAL DIPLOMA - LEVEL 3

REF: 1830

WHICH CAMPUS?

Broadway Campus

WHAT WILL I STUDY?

This course will prepare you to enter employment as a Technician in a range of engineering occupations or to follow an Advanced Apprenticeship.

During the course you will study:

Mandatory units

- Maths
- Science
- Communications and business systems for technicians
- Project

Optional units (choose 6 from)

- CAD
- CAM
- Programmable controllers
- Electrical & electronic principles
- Production planning & scheduling
- Primary performing processes
- Engineering materials
- Engineering drawing
- Engineering design
- Quality assurance & control
- Further maths
- Engineering workplace practices
- Health, safety and welfare

HOW WILL I BE ASSESSED?

You will be assessed by assignments and formal tests. You will complete a practical project in Year 2.

WHAT ARE THE ENTRY REQUIREMENTS?

You will need to have one of the following:
4 GCSEs at grade C or above
OR GNVQ Intermediate in Engineering.

HOW LONG?

2 years.

WHAT NEXT?

HNC/D in Engineering, a Degree at University or a career as a Design Engineer.



MANUFACTURE ENGINEERING

VRQ NVQ - LEVEL 2

REF: 2313

WHICH CAMPUS?

Broadway Campus

WHAT WILL I STUDY?

This course is suitable for you if you want to pursue a career in Production Engineering and gain recognised qualifications. On this course you will study:

- Performing engineering operations
- Health & safety
- Reading technical information
- Measuring
- Marking out
- Basic CAD
- Turning
- Milling
- IT
- Key skills

If you obtain employment during the course you may transfer to an Apprenticeship programme.

HOW WILL I BE ASSESSED?

You will be assessed in a variety of ways including practical and knowledge assessments and examinations.

WHAT ARE THE ENTRY REQUIREMENTS?

You will need 3 GCSEs at grade D or above in Maths, Science and English or equivalent vocational qualification, and an aptitude for Computing.

HOW LONG?

1 year.

WHAT NEXT?

Apprenticeship or Advanced Apprenticeship, Level 3 Manufacturing or a career in engineering manufacture.

OPERATIONS & MAINTENANCE

VRQ - LEVEL 3

REF: 3066

WHICH CAMPUS?

Broadway Campus

WHAT WILL I STUDY?

This Vocational Related Qualification (VRQ) focuses on performance using practical skills, knowledge and understanding. This ensures that on completion you have gained practical experience and have some expectation for situations that you could face in a job role within the engineering sector.

To achieve the VRQ Level 3 you are required to complete the following eight units:

Two Mandatory Units:

- Engineering and Environmental Health & Safety
- Organisational Efficiency and Improvements

Six Multi-Skill Option Units - Maintenance Route:

- Electrical and Electronic Principles
- Programmable Logic controllers
- Maintenance of Mechanical Systems
- Maintenance of Hydraulic Systems and Components
- Maintenance of Pneumatic Systems and Components
- Advanced Mechanical Engineering Principles.

Additional Option Unit for pathway to Higher Education:

- Advanced Mathematics
- Advanced Electrical and Electronic Principles
- Advanced Engineering Science.

HOW WILL I BE ASSESSED?

You will be assessed via external and internal examinations and practical assignments for each unit.

WHAT ARE THE ENTRY REQUIREMENTS?

You should have Technical Certificate Level 2 and/or relevant industrial experience.

HOW LONG?

1 year.

WHAT NEXT?

HNC Engineering (Operations Maintenance).

Career options: Aeronautical, Marine or Automotive Engineer.

OTHER COURSES AVAILABLE

APPRENTICESHIPS

(SEE APPRENTICESHIPS SECTION FOR INFO)

Engineering Apprenticeship &
Advanced Apprenticeship NVQ -
Level 2 & 3 (REF: 641)

