

# Engineering

From basic engineering and electronics courses to advanced work-related disciplines, FC has a large and dedicated engineering department where students learn on modern equipment designed to teach them the necessary skills for work. Equipment is industry standard, smaller classes mean that students get regular access to machine tools and other facilities.



## BTEC First Diploma in Manufacturing Engineering

### Course Details

This course provides a range of specialist optional units and is designed to meet the needs of technician learners. The BTEC First Diploma in Manufacturing Engineering is both an academic and practical work-related course.

The course is designed to equip students with the basic skills and understanding of mechanical engineering.

The course is made up of six individual units including three core units. The three specialist units allow you to study particular areas in depth.

Assessment is largely by coursework with one externally set assignment.

### Course Duration: One year

### Further Study & Career Options

The course may be studied alongside an appropriate GCSE depending on initial qualifications and guidance from the course team. After completing the course you can choose whether to proceed directly to employment in the engineering sector or progression to further engineering courses.

## BTEC First Diploma in Electronics

### Course Details

This course provides a range of specialist optional units and is designed to meet the needs of technician learners. The BTEC First Diploma in Electronics is a practical, work-related course. It is designed to meet the work-related and progression needs of students in disciplines of electronics, maintenance and circuit construction and testing.

The course is made up of 4 core units and 7 specialist units. The specialist units allow you to study particular areas in depth including:

- Circuit construction and testing
- Electronic devices
- Communications applications
- Telecommunications Technology
- Electronic maintenance fundamentals

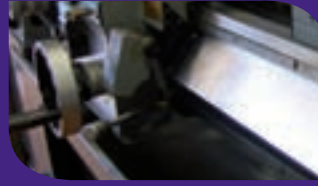
Assessment is largely by coursework with one externally set assignment.

### Course Duration: One year

### Further Study & Career Options

The course may be studied alongside an appropriate GCSE depending on initial qualifications and guidance from the course team. After completing the course you can choose whether to proceed directly to employment in the engineering sector or progression to further engineering courses.





## BTEC National Diploma in Electrical/Electronic Engineering – Electronic

### Course Details

The BTEC National Diploma in Electrical/Electronic Engineering is a practical, work-related course.

It is designed to meet the progression needs of students and local employers. The course is made up of 17 individual units including five core units, and it is equivalent to three A Levels.

The specialist units allow you to study particular areas in depth, including:

- Electrical applications
- Electronic circuit manufacture
- Electronic measurement and test
- RADAR systems
- Communication installation techniques

Assessment is largely by coursework.

### Course Duration: Two Years

### Further Study & Career Options

After completing the course you can choose whether to proceed directly to employment in the engineering sector or proceed into Higher Education.

## BTEC National Diploma in Aerospace Engineering – Mechanical

### Course Details

The BTEC National Diploma in Aerospace Engineering enables learners to make use of the engineering principles and the opportunity to develop a creative approach to problems. Students learn to apply academic principles for analysis, design, manufacturing and maintenance of aircraft mechanical systems.

The Aerospace Engineering student will develop knowledge and skills in:

- Sheet metalwork
- Airframe repairs
- Propulsion technology
- Aircraft systems
- Material properties
- Aircraft dynamics
- Communications

The course is made up of 17 individual units including five core units plus 12 specialist units. The 12 specialist units allow you to study particular areas in depth.

The course is equivalent to three A Levels. Assessment is largely by coursework.

### Course Duration: Two Years

### Further Study & Career Options

After completing the course you can choose whether to proceed directly to employment in the engineering sector or proceed onto Higher Education.

## BTEC National Diploma in Mechanical Engineering

### Course Details

The BTEC National Diploma in Mechanical Engineering enables learners to make use of the opportunity to develop a creative approach to problems. Students learn to apply principles of physics for analysis, design, manufacturing and maintenance of mechanical systems.

The Mechanical Engineering student will develop knowledge and skills in:

- Engineering science
- Testing techniques
- Material properties
- Analysis and evaluation
- Communication

The course is made up of 17 individual units including five core units plus 12 specialist units. The 12 specialist units allow you to study particular areas in depth.

The course is equivalent to three A Levels. Assessment is largely by coursework.

### Course Duration: Two Years

### Further Study & Career Options

After completing the course you can choose whether to proceed directly to employment in the engineering sector or proceed into Higher Education.

## Subject

## Level 1

## Level 2

## Level 3

Mechanical Engineering

Electrical/Electronic Engineering

Aerospace Engineering

Engineering

NVQ 1

BTEC First Diploma in Manufacturing Engineering

BTEC First Diploma in Electronics

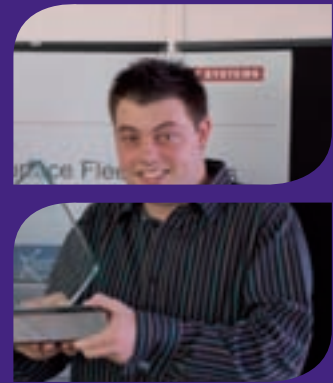
BTEC First Diploma in Manufacturing Engineering

NVQ 2

BTEC National Diploma in Mechanical Engineering

BTEC National Diploma in Electrical/Electronic Engineering (Electronic)

BTEC National Diploma in Aerospace Engineering (Mechanical)



## NVQ Level 1 Pre-Apprenticeship Course – Performing Engineering Operations

### Course Details

This is a one year full-time programme designed to provide you with an introduction to the knowledge and practical skills required by an Engineering Craftsperson or Technician.

The course includes 3 mandatory units:

- Working safely in an engineering environment
- Working efficiently and effectively in engineering
- Using and communicating technical information

...Plus selection of 2 optional units from:

- Making components using hand tools and fitting techniques
- Using lathes for turning operations
- Using milling machines

**Course Duration: One year**

### Further Study & Career Options

Satisfactory completion of the course should enable young people to demonstrate to employers that they have the potential to successfully follow a craft or technician modern apprenticeship. Those not gaining employment can progress to Performing Engineering Operations NVQ Level 2 if all of the criteria have been met.

### Other Relevant Information

Equipment required will include general writing and drawing equipment including a lever-arch file.

Students will also be required to purchase overalls, steel toe capped safety shoes and safety spectacles.

## NVQ Level 2 Pre-Apprenticeship Course – Performing Engineering Operations

### Course Details

Progression onto the NVQ 2 is dependent on successful completion of the NVQ 1 course. The NVQ 2 will teach more advanced engineering techniques.

The course includes 3 mandatory units:

- Working safely in an engineering environment
- Working efficiently and effectively in engineering
- Using and communicating technical information

...Plus selection of 3 optional units from:

- Producing mechanical engineering drawings using a CAD system
- Producing components using hand fitting techniques
- Preparing and using lathes for turning operations
- Preparing and using milling machines

**Course Duration: Two years**

### Further Study & Career Options

Satisfactory completion of the course should enable young people to demonstrate to employers that they have the potential to successfully follow a craft or technician modern apprenticeship.

### Other Relevant Information

Equipment required will include general writing and drawing equipment including a lever-arch file.

Students will also be required to purchase overalls, steel toe capped safety shoes and safety spectacles.

