

BTEC First Diploma in Engineering (Electronics) BTEC First Certificate in Engineering

Available from September 2006

advancing learning, changing lives

Firsts

Features

- ◆ QCA accredited NOF Level 2 work-related qualifications
- ◆ Mapped to QCA's guidelines on work-related learning at Key Stage 4: [more details](#)
- ◆ Available in schools for pre-16 learners and further education colleges for post-16 learners
- ◆ BTEC First Certificate equivalent to 2 GCSEs grades A*-C
- ◆ BTEC First Diploma equivalent to 4 GCSEs grades A*-C

Advantages

- ◆ Prepares learners to enter employment in the engineering sector or to progress to further education vocational qualifications
- ◆ Provides education and training specifically in the areas of electronics, maintenance and manufacturing which is directly relevant to the changing needs of employees, employers and the professions
- ◆ Motivates learners via applied learning and assessment
- ◆ BTEC qualifications are recognised by employers and education institutions
- ◆ Provides a good progression route to more advanced qualifications eg BTEC Nationals
- ◆ Esteem of working in a sector of choice

Benefits

- ◆ Publicly funded on DfES Section 96 and Section 97
- ◆ Listed on the DfES Achievement and Attainment Tables
- ◆ Allows flexible delivery for teachers
- ◆ Availability of detailed support material for new centres

Centres must have approval from Edexcel to offer these qualifications.

For information on how to get approval, please call Edexcel Customer Services on 0870 240 9800 or alternatively see the following link: <http://www.edexcel.org.uk/sfc/forms/approval/>

QAN Number: Certificate: 100/5670/1; Diploma: 100/5671/3

Current accreditation from: 1 September 2006 to 31 August 2009

Current certification end date: 31 August 2011

For accreditation information, please visit the National Database of Accredited Qualifications by clicking here: [Certificate](#) and [Diploma](#).

Structure

BTEC First Diploma in Engineering (Electronics)	BTEC First Certificate in Engineering
Four core units	Two core units
<ul style="list-style-type: none"> Working Practices in Engineering (30 GLH) Using and Interpreting Engineering Information (30 GLH) Applied Electrical and Mechanical Science for Technicians (30 GLH) Mathematics for Engineering Technicians (30 GLH) 	<ul style="list-style-type: none"> Working Practices in Engineering (30 GLH) Using and Interpreting Engineering Information (30 GLH)
Specialist units (select units to a value of at least 120 GLH from Group A)	Specialist units
<p>Group A</p> <ul style="list-style-type: none"> Electronic Devices and Communication Applications Electronic Circuit Construction and Testing Telecommunications Technology Application of Digital Networks Personal Computer Hardware and Software Installation Installing and Maintaining Home Entertainment Systems <p>Group B</p> <ul style="list-style-type: none"> Selecting Engineering Materials (30 GLH) Engineering Assembly Techniques (30 GLH) Using Computer Aided Drawing Techniques in Engineering Electronic Maintenance Fundamentals Mobile Communications Technology (30 GLH) 	<ul style="list-style-type: none"> Applied Electrical and Mechanical Science for Technicians (30 GLH) Mathematics for Engineering Technicians (30 GLH) Engineering Maintenance Procedures and Planning (30 GLH) Preparing and Controlling Engineering Manufacturing Operations (30 GLH) Electronic Devices and Communication Applications Selecting Engineering Materials (30 GLH) Using Computer Aided Drawing Techniques in Engineering Selecting and Using Secondary Machining Techniques to Remove Material Programming CNC Machines Electronic Circuit Construction and Testing

Unit Combinations

For the **BTEC First Certificate** the learner is required to complete both core units and enough specialist units from the list provided for a combined total of 180 guided learning hours (GLH) to complete the qualification.

For the **BTEC First Diploma** the learner is required to complete the four core units and enough specialist units from the list provided for a combined total of 360 guided learning hours (GLH) to complete the qualification.

Specification and Guides

- Specification (BF017262)

These materials can be ordered from:

Edexcel Publications

Adamsway

Mansfield, Notts. NG18 4FN

Tel: 01623 467 467

Email: publications@linneydirect.com

An electronic version of the specification is available on the Edexcel website. To access please see: <http://www.edexcel.org.uk/quals/first/eng/btec-fc-sep-2006/btec-fc-eng/>

DfES Achievement and Attainment Tables

For more information and to view these please [click here](#)

Student Progression

BTEC First Diplomas and Certificates offer direct progression on to BTEC National programmes. On completion of a BTEC National, students can progress to a BTEC Higher National or BTEC Foundation Degree programme.

A BTEC First also prepares students for employment in their chosen career.

Units

Core Units

Unit 1: Working Practices in Engineering (30 GLH)

The aim of this unit is to deal with the essential working practices of engineering to ensure that learners appreciate potential hazards.

Unit 2: Using and Interpreting Engineering Information (30 GLH)

Will enable learners to understand how to make effective use of textual, numeric and graphical information when working with engineering drawings, technical manuals, reference tables, specifications, charts or electronic displays, in accordance with approved procedures.

Unit 3: Applied Electrical and Mechanical Science for Technicians (30 GLH)

Learners will build on their experience of responding creatively to briefs gained in their chosen specialist units.

Unit 4: Mathematics for Engineering Technicians (30 GLH)

Will provide the learner with the underpinning knowledge and skills to solve problems that are faced by engineers that require the use of mathematical formulae and equations.

Specialist Units

Unit 6: Preparing and Controlling Engineering Manufacturing Operations (30 GLH)

Provides learners with a broad understanding of the skills required when preparing and controlling a manufacturing operation in a particular set of circumstances.

Unit 7: Electronic Devices and Communication Applications (60 GLH)

Develops learners' knowledge and understanding of the core topics embracing electrical, electronics and communications technology, thus enabling progression to further study in the areas of electronics and communications engineering.

Unit 8: Selecting Engineering Materials (30 GLH)

This unit aims to provide the learner with an understanding of a range of common materials encountered in engineering, their properties, uses and availability.

Unit 9: Engineering Assembly Techniques (30 GLH)

Learners' will be provided with the necessary skills and knowledge to use tools to carry out a range of relevant assembly methods and techniques on engineering equipment.

Unit 10: Using Computer Aided Drawing Techniques in Engineering (60 GLH)

Provide the learner with an introduction to CAD and to enable learners to produce engineering drawings to given industry standards.

Unit 13: Electronic Maintenance Fundamentals (60 GLH)

Demonstrates the aspects of electronic engineering that a maintenance engineer is likely to be involved in.

Unit 14: Selecting and Using Secondary Machining Techniques to Remove Material (60 GLH)

Provides a detailed understanding of manufacturing processes that are mainly associated with generating and forming of shapes through machining techniques.

Unit 15: Programming CNC Machines (60 GLH)

This unit will provide the learner with an introduction to CNC part programming, and to enable them to interpret part programs in terms of storage, transferability and flexibility

Unit 19: Electronic Circuit Construction and Testing (60 GLH)

Learners will be introduced to some of the skills and related theory required when using simple circuits and working as an electronics technician

Unit 20: Telecommunications Technology (60 GLH)

Will provide a clear introduction to the concepts and technology involved in telecommunication networks.

Unit 21: Application of Digital Networks (60 GLH)

Learners will gain the practical skills needed to recognise the network hardware building blocks and the software roles and features required to make the communication system function.

Unit 24: Personal Computer Hardware and Software Installation (60 GLH)

The aim of this unit is to provide learners with the underpinning knowledge and understanding of the fundamental assembly and configuration of personal computers.

Unit 27: Installing and Maintaining Home Entertainment Systems (60 GLH)

This is aimed at those who wish to increase their knowledge of the practical aspects of home entertainment systems including radio, television and audiovisual (AV) systems.

Unit 29: Mobile Communications Technology (30 GLH)

This shows the learner the different (and often competing) wireless technologies which are currently available, the mobile devices which benefit them and how these can be used to offer solutions that would have previously been impossible or unthinkable.

*** GLH = guided learning hours**

A notional measure of the substance of a qualification. It includes an estimate of time that might be allocated to direct teaching, instruction and assessment, together with other structured learning time such as directed assignments or supported individual study. It excludes learner-initiated private study.

advancing learning, changing lives

Contact us

Edexcel
One90 High Holborn, London WC1V 7BH
Online enquiries: www.edexcel.org.uk/ask
Tel: 0870 240 9800
Fax: 020 7190 5700
www.edexcel.org.uk

edexcel 