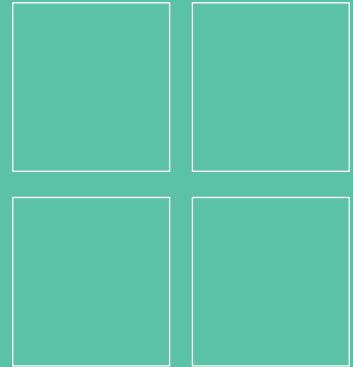
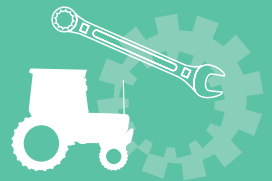


Agricultural Engineering

# Agricultural Engineering



2011





## College overview

The College of Agriculture, Food and Rural Enterprise (CAFRE) is the Centre of Excellence within Northern Ireland for education and training in food and land-based subjects. The College, with campus locations at Enniskillen, Greenmount (Antrim) and Loughry (Cookstown) offers a wide and unique range of courses in the areas of agriculture, horticulture, equine, food and rural studies.

An extensive range of full and part-time courses, and dedicated staff with strong industry links combine to ensure that our students gain the necessary skills and knowledge to succeed in challenging and rewarding careers in the agri-food and rural industries. If you wish to find out more, contact us to arrange a visit to view our superb range of resources and modern facilities.



Anyone familiar with modern agriculture will appreciate the crucial role that machinery plays in this industry. As machinery becomes more complex, for example a sophisticated potato harvester or a high specification combine harvester, specialists are required to operate, maintain and support it.

These specialists need to be well versed in conventional topics such as engine performance and transmissions but increasingly a knowledge of electronics, hydraulics and control systems is becoming essential in the operation and maintenance of machinery. Technicians in particular are now highly regarded and are commanding good salaries in line with their skills, knowledge and experience. Many of those who have senior roles in the industry were technicians who have progressed within their respective companies.



## **BTEC Level 3 Diploma/Extended Diploma in Land-based Technology**

(formerly known as the National Certificate/National Diploma in Land-based Technology)

### **Duration:**

Diploma-  
One year full-time  
(12 units).

or

First Diploma in Land-based  
Technology achieved with  
Distinction.

Extended Diploma-  
Two years full-time  
(18 units).

or

Where applicants are over  
18, length of relevant industry  
experience, performance in a  
multiple choice assessment  
and an interview may be  
used to determine suitability.

### **Location:**

Greenmount Campus.

### **Entry requirements:**

Normally four GCSE passes at Grade  
C or above including Mathematics  
and English.

Applicants may be required  
to undergo a practical  
competence assessment.



## **BTEC Level 3 Diploma/Extended Diploma in Land-based Technology** continued

### **How to apply:**

Direct application to the College.

### **Main areas of study:**

Units include engine technology, computer aided design (CAD) and machinery management.

### **Progression opportunities:**

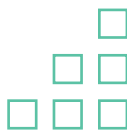
On completion of the Diploma course students may continue with their studies and obtain a BTEC Level 3 Extended Diploma at the end of the second year.

BTEC Level 3 Extended Diploma graduates may progress onto a Degree or Higher National Diploma.



### **Student's view: Andrew McConaghy**

"I achieved a First Diploma in Land-based Technology with Distinction and then progressed onto this year. I am finding the course very enjoyable, especially the practical content and my favourite subject is engine technology. I am looking forward to doing my work placement with a local agricultural mechanic. After completing the course I plan to work abroad before returning home to work as an agricultural contractor with my father. I would recommend this course as it has widened my skills and knowledge of agricultural machinery."



## **BTEC Level 2 Diploma in Land-based Technology** (formerly known as the First Diploma in Land-based Technology)

### **Duration:**

One year full-time including a four week work placement.

### **Location:**

Greenmount Campus.

### **Entry requirements:**

Normally two Grade Cs or three Grade Ds at GCSE. Applicants may be required to undergo a practical competence assessment.

### **How to apply:**

Direct application to the College.

### **Main areas of study:**

Principles of land-based machinery, workshop practice, routine vehicle maintenance.

### **Progression opportunities:**

NVQ Level 2 in Land-based Service Engineering (work-based), BTEC Level 3 Diploma or Extended Diploma in Land-based Technology.



### **Student's view: Matthew Gamble**

"I decided to complete this course as I knew it would give me a chance to develop my machinery operation and workshop skills. I enjoy the practical element of the course as I get to work on a range of equipment and also the opportunity to discover 'the real mechanic's experience'. I am looking forward to my work experience placement at my local Massey Ferguson dealership. I plan to further my knowledge by progressing onto the Level 3 course before I return to the family agricultural contracting business."





## **NPTC Level 2 Diploma in Work-based Land-based Engineering Operations**

(formerly known as the NVQ Level 2 in Land-based Service Engineering)

### **Duration:**

Up to two years, depending on progress.

### **Location:**

Greenmount Campus.

### **Entry requirements:**

BTEC Level 2 Diploma in Land-based Technology.

Applicants must be employed as trainee service engineering technicians in the land-based sector.

Where applicants are over 18, length of relevant industry experience, performance in a multiple choice assessment and an interview may be used to determine suitability.

### **How to apply:**

Direct application to the College.

### **Main areas of study:**

Tractor and machinery repair, welding and fabrication.





## **NPTC Level 2 Diploma in Work-based Land-based Engineering Operations** continued

### **Progression opportunities:**

Graduates from this course may progress to service technician posts with their employers and undertake further qualifications.



### **Student's view: Russell Sloan**

"I completed a qualification in Land-based Technology last year and was given two choices with regard to progression. I could have gone back to Greenmount and completed an Extended Diploma but instead decided to enrol on the Level 2 Diploma in Work-based Land-based Engineering Operations. I made this decision because I feel that I learn more from working in practical hands on situations rather than from a classroom. It also means I am in paid employment which is very important nowadays."



## Careers in Agricultural Engineering

Working in this sector is not easy; hours can be long and sometimes work needs to be done outdoors in difficult conditions. However, demand is high for well-qualified technicians across the UK and Ireland and there are excellent progression opportunities for those wishing to pursue further qualifications. Work is challenging and varied and most of those in the industry derive a high level of satisfaction from their work.

There are many ways to secure a job in the sector. In general, those completing a Level 2 could expect to obtain a 'hands on' role while those who complete an Extended Diploma are more likely to move into a supervisory post. A Degree should lead to management roles. However, it is possible to progress through the ranks regardless of starting position or initial qualification.

### Service technician

A fully qualified service technician will normally have achieved a BTEC Level 3 Diploma in Land-based Technology. Those with a BTEC Level 2 award tend to work in support of fully qualified technicians. The work involves the service and repair of agricultural machinery, both in the workshop and in the field. More often than not, diagnosis of faults on modern equipment involves the use of complex diagnostic tools and IT equipment and there is strong demand for technicians with skills in this area.

### Contracts/Farm manager

Effective machinery management is essential to ensure the efficient utilisation of expensive machinery. Past students have been involved in the operation and management of machinery fleets on large-scale arable farms. Opportunities also exist with agricultural contractors.



## Careers in Agricultural Engineering continued

### Sales personnel

Many students completing the BTEC Level 3 Extended Diploma course have an interest in selling tractors and other machinery and a number of past students are currently employed in these roles. Similarly, there are openings for those who wish to get involved in after-sales support and service. The Extended Diploma course provides a useful foundation for someone intending to embark on a sales career.

### Product support technicians

Manufacturers of agricultural and horticultural machinery employ newly qualified graduates each year to provide product support to their dealer network. The work is varied and involves demonstrating equipment at a working event, troubleshooting for a specific machine, delivering technical training to dealership staff or sales management. A higher level qualification e.g. Foundation Degree is normally required.

### Design and manufacture engineers

A career in the design and manufacture of machinery usually requires someone with a relevant degree. The technology integrated in modern agricultural and horticultural machinery is at the highest level of sophistication, often away beyond that in cars or trucks. After appropriate training, design engineers will normally specialise in a given area such as engine performance, transmissions, hydraulics or electronics.

## Course contacts

For further information please refer to our prospectus or website or contact the relevant Course Managers:

Course Title: BTEC Level 3 Diploma/Extended Diploma  
in Land-based Technology

Course Manager: Kenneth Johnston  
Email: kenneth.johnston@dardni.gov.uk

Course Title: NPTC Level 2 Land-based  
Service Engineering

Course Manager: Derek McKinstry  
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BT80 9AA

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Freephone: 0800 0284291  
Tel from Rol: 048 9442 6921  
Textphone: 028 9052 4420  
Email: enquiries@cafre.ac.uk  
Website: www.cafre.ac.uk

Where a course is oversubscribed, CAFRE reserves the right to make offers to those who meet the entry criteria as detailed on our website and prospectus. Closing date for receipt of applications is 31st July for the intended year of entry.

If you require this leaflet in an alternative format please freephone College Administration on 0800 0284291 quoting: Agricultural Engineering 2011 entry.

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