

HIGHER EDUCATION COURSES BTEC HNC - HIGHER NATIONAL CERTIFICATE

OPERATIONS ENGINEERING

Entry Qualifications: Level 3 diploma in Engineering/Operations Maintenance or equivalent

Our flexible Higher Education delivery model includes:

- Face-to-face tutorials
- Flexible day delivery to minimise effect on employer
- Opportunities to develop workplace projects within employers
- Study at Blackburn

Our enhanced HNC in Operations Engineering is obtained by studying up to six units per year – enhancing your career opportunities.

If a learner completes the HNC with us, they can top up to a HND in one year.



YEAR ONE:

ENGINEERING MATHS

The aim of this unit is to develop students' skills in the mathematical principles and theories that underpin the engineering curriculum. Students will be introduced to mathematical methods and statistical techniques in order to analyse and solve problems within an engineering context.

ENGINEERING SCIENCE

This unit introduces students to the fundamental laws and applications of the physical sciences within engineering and how to apply this knowledge to find solutions to a variety of engineering problems. Among the topics included in this unit are: international system of units, interpreting data, static and dynamic forces, fluid mechanics and thermodynamics, material properties and failure, and A.C./D.C. circuit theories.

ENGINEERING DESIGN

The aim of this unit is to introduce students to the methodical steps that engineers use in creating functional products and processes; from a design brief to the work, and the stages involved in identifying and justifying a solution to a given engineering need.

MANAGING A PROFESSIONAL ENGINEERING PROJECT

This unit introduces students to the techniques and best practices required to successfully create and manage an engineering project designed to identify a solution to an engineering need. While carrying out this project students will consider the role and function of engineering in our society, the professional duties and responsibilities expected of engineers together with the behaviours that accompany their actions.

MECHANICAL PRINCIPLES

The aim of this unit is to introduce students to the essential mechanical principles associated with engineering applications. Topics included in this unit are: behavioural characteristics of static, dynamic and oscillating engineering systems including shear forces, bending moments, torsion, linear and angular acceleration, conservation of energy and vibrating systems; and the movement and transfer of energy by considering parameters of mechanical power transmission systems.

YEAR TWO:

MAINTENANCE ENGINEERING

This unit introduces students to the importance of equipment maintenance programmes, the benefits that well-maintained equipment brings to an organisation and the risk factors it faces if maintenance programmes and processes are not considered or implemented. Topics included in this unit are: statutory regulations, organisational safety requirements, maintenance strategies, safe working and maintenance techniques.

OPERATIONS AND PLANT MANAGEMENT

The underlying aims of this unit are to develop the students' knowledge of the engineering fundamentals that augment the design and operation of plant engineering systems, and to furnish them with the tools and techniques to maintain the ever more technological equipment.

ELECTRO, PNEUMATIC AND HYDRAULIC SYSTEMS

The aim of this module is to develop students' knowledge and appreciation of the applications of fluid power systems in modern industry. Students will investigate and design pneumatic, hydraulic, electro-pneumatic and electro-hydraulic systems. This unit offers the opportunity for students to examine the characteristics of fluid power components and evaluate work-related practices and applications of these systems.

CAD FOR MAINTENANCE ENGINEERS

The aim of this unit is to enable students to produce 2D CAD drawings (using industry standard CAD software), and to modify and construct electrical and mechanical drawings e.g. distribution systems, fire alarms, steam ranges, electrical and hydraulic circuits. This unit will support the development of the students' CAD abilities and build upon those skills to introduce the more advanced techniques that are used to create and modify schematic drawings quickly and efficiently. These techniques can be used to construct pre-prepared symbols for use in circuit diagrams, or be used to create unique symbols and symbol libraries.

FURTHER MATHEMATICS

The unit will prepare students to analyse and model engineering situations using mathematical techniques. Among the topics included in this unit are: number theory, complex numbers, matrix theory, linear equations, numerical integration, numerical differentiation, and graphical representations of curves for estimation within an engineering context. Finally, students will expand their knowledge of calculus to discover how to model and solve engineering problems using first and second order differential equations.

**COURSE COSTS
FOR 2019/20
ACADEMIC YEAR:
£2000
+ VAT**

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about booking a place:**

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