

This programme is only offered at Barking & Dagenham College

Final award	<i>Higher National Certificate in General Engineering</i>
Intermediate awards available	<i>N/A</i>
UCAS code	Direct Application
Details of professional body accreditation	<i>N/A</i>
Relevant QAA Benchmark statements	<i>Engineering 2010 FHEQ National Level 4</i>
Date specification last up-dated	<i>January 2016</i>
Mode	<i>Full time</i>
Duration	<i>1 year</i>

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THE SUMMARY - programme profile

If you have a keen interest in how things work, problem solving, design, and your ambition is to work in the field of engineering or to provide and maintain processes and services for the engineering industry, then this course will engage you in the design and developing process that engineered products and systems go through. You will focus on analytical techniques, design and practical investigation to help solve actual engineering problems.

The course provides a grounding in the key concepts (mechanical & electrical) and practical skills required in the modern engineering industry. You will have access to our excellent industry-standard software such as CAD (Computer Aided Design).

You will be stretched academically and where opportunities arise you will link with industry experts to see firsthand how they operate. You will explore and examine how engineering companies work within the constraints imposed by economic, legal, social, cultural and environmental consideration.

This one-year Higher National Certificate has a vocational emphasis and enables you to develop your skills in engineering; you will explore the science that underpins all engineering and will use mathematics at a high level to communicate parameters, models and optimise solutions.

You will be encouraged to think both creatively in design stages and balance this with the practicalities imposed by the assignment brief. You will test your theories and put these in to practice in our engineering department workshops and labs.

Throughout the course your progress will be monitored by means of tutorials, reviews and formative and summative assessments. These procedures are designed to support your independent study through critical feedback from the tutorial staff.

Workshops, tutorials, lectures, and seminars run throughout the course to support your work. Information technology and presentation skills are embedded throughout the course. Assessment is continuous and teaching methods include case studies, essays, presentations, assignments and projects (which are referred to as “coursework”).

ABOUT YOUR PROGRAMME-

What is the HNC in General Engineering?

The programme is delivered in a supportive environment working within small groups with excellent facilities and well qualified and experienced staff.

Satisfactory completion of the HNC General Engineering course will enable you to progress on to an HND or a BEng (Hon) Engineering course. Alternatively you may wish to progress directly into employment.

ENTRY REQUIREMENTS

For entry on to the course, you will be expected to:

- be at least 18 years of age by 1, September of the year of entry
- Successful completion of a National Diploma, Subsidiary or Extended Diploma in General Engineering, (this must also include Maths and Science at Level 3 as subjects).
- or have successfully completed a related Access course in Engineering or hold a Bridging Certificate in Engineering
- or hold equivalent, related qualifications
- or hold equivalent, related work experience
- Have IELTS level 6.5 or equivalent if English is not the first language.

Mature Students

We are committed to improving access to education for those without formal qualifications. We will consider applicants who can show evidence of experiential learning that is equivalent to the required formal qualifications and applicants with qualifications equivalent to the ones stated above. All students' equivalent skills will be assessed and their skills matched against the courses requirements. You will also be asked to undertake an Initial Diagnostic assessment in English and Mathematics. You will need to have a practical aptitude as well as be able to work independently and be self-motivated. We will also be assessing your wider abilities and looking for evidence that you are likely to succeed on this course.

Suitable candidates

The College welcomes applications from all ages and backgrounds.

Interview

You will be invited for a formal interview. At this interview the staff will look at your current experience as well as qualifications. The staff will be looking to evidence a genuine interest and ability to study at level 4 and will ask questions in order to understand your depth of understanding of engineering. You are likely be assessed on your basic skills in literacy and numeracy.

Applications

Applications to this course are made through UCAS and the college code is B11. Students are able to apply for a fee loan and maintenance loan (where eligible) through Student Finance England.

PROGRAMME STRUCTURE

This is a one year programme with each year divided into three terms. You will be required to study for a minimum of 35 hours per week – this will be made up of a mixture of lectures, seminars, practical workshops, independent study, research and project work. Considering the nature of this course some of these hours may be spent on location visits.

This HNC covers a broad range of subjects including – Project management, Electronics, Mechanical engineering, Microcontrollers, Engineering science and materials

Learning environment

Your programme will be delivered in workshops and classrooms as well as design suites and labs. You will also be working in our regional Gazelle Science, Technology, Engineering & Maths (STEM) Centre which opened in September 2013.

Assessment

The programme will cover a range of units that will have a total credit value of 120. 50 of these credits will be made up from the Mandatory Core Units. The BTEC Level 4 HNC programme must contain a minimum of 65 credits at level 4. The standard of your work will be assessed through practical and written assignments, “coursework”.

Each project and assignment will have clear learning outcomes and guidance on what you need to do to be successful. The achievement of learning outcomes will contribute to your success in one or more units of study. Once all learning outcomes have been completed your achievement will be graded.

Work experience/placement opportunities

An important aspect of the Higher National Certificate is professional practice and a vocational context for your work. There are good links between the college and the engineering industry. You may also have opportunities to visit engineering companies and manufacturing plants. You will be encouraged to find opportunities to gain experience of working with others in order to prepare you for your career.

Project work

Your skills and understanding of Engineering will be developed through a planned series of practical skill based activities. Project based work is designed to allow the development of skills and explore ideas and develop creativity in your design work. You will participate in, and contribute to; peer group critique, reviews and that will enable you to identify areas for development and improvement. You will work on a team project and will take responsibility for the development of specific elements of project.

Added value

Barking & Dagenham College is situated within 15 miles of central London. This proximity enables you to build meaningful vocational links during your time at Barking & Dagenham College and enables staff to organise visits. Barking town centre receives regeneration funding and is within the exciting Thames Gateway development with planned expansion of the transport infrastructure, new housing, educational, employment and cultural opportunities.

IS THIS THE PROGRAMME FOR ME?

If you are interested in ...

- Engineering design and science
- Mechanical engineering
- Electronics
- Microcontrollers

If you enjoy....

- Developing creative ideas
- Problem solving
- Working in groups and as an individual
- Mathematics
- Working of engineering projects from design to completion
- Science
- Problem Solving

If you want....

- To develop and apply skills in the engineering industry
- To be equipped to join other practitioners within the field of engineering
- To participate actively in group working at college and in practice
- To be able to, potentially, contribute to engineering industry

Your future career

After completion of the course, you may wish to progress to employment in engineering, or as a technician. Alternatively, you may wish to undertake further study that will enable you to progress in related area. There is also the opportunity for students to progress to an HND (Top-Up) or BA (Eng) engineering courses. We have established relationships and can support your application and progression to university.

How we support you

You will be well supported through an effective tutorial system and staff will focus on your individual needs as a learner. A range of professional services are available including: careers advice: learning support: counselling and health advice. The college LRC provides study skills workshops and in addition to book and non-book resources you will have excellent access to ICT equipment including a range of high quality specialist facilities in media resources.

Bonus factors

- Close proximity to the Central London
- Opportunity to progress onto BEng (Hon) Engineering courses (direct access to 1 and 2 year possible)
- Excellent facilities and resources
- Real focus, encouragement and support for you to undertake real projects

PROGRAMME AIMS AND LEARNING OUTCOMES

What is this programme designed to achieve?

This programme is designed to give you the opportunity to:

- Develop practical and underpinning skills in engineering
- Provide a platform for students to access their imagination and develop engineering solutions
- Establish key transferable and employability skills and develop a multi-tasking and multi skills approach to professional practices.

What will you learn?

Knowledge

- Understanding of the general engineering industry and related work placements
- Historical, theoretical and ethical positions in response to engineering design
- Understand the relationship between traditional skills and developing technologies
- Understand the creative process of engineering design

Thinking skills

- Self-reliance and self-evaluation
- Self-reflection / analysis and critical awareness
- Creative thinking and convention
- Research skills

Subject-Based Practical skills

- Production methods
- Technical aptitude
- Pre planning and production organisation
- Presentational skills

Skills for life and work (general skills)

- Time management - participation and working to deadlines
- Working within groups and independently
- Work experience
- Interpersonal skills – engineering principles and processes

PROGRAMME UNIT CONTENT

HNC Award 120 Credits

50 Credits Mandatory Core + 70 Credits from specialist units = HNC Award

BTEC Higher Nationals, General Engineering units:

Mandatory Core Units:

Analytical Methods for Engineers
Engineering Science
Project Design Implementation and Evaluation

Specialist Units Group

Electrical and Electronic Principles
Health and Safety
Materials Engineering
Further mathematics
Principles and applications of micro controllers

TEACHING, LEARNING AND ASSESSMENT STRATEGIES

Your skills and understanding of processes will be developed through a planned series of practical skill based activities. Project based work is designed to allow the development of skills and explore conceptual ideas and develop your practical engineering skills. You will participate in, and contribute to, peer group critique and review of work-in-progress that will enable you to identify areas for development and improvement.

Assessment methods and Strategies

The standard of your work will be assessed through a completion of assignment work, practical project work and written assignments (referred to as “coursework”).

Each project and assignment will have clear learning outcomes and guidance on what you need to do to be successful. The achievement of learning outcomes will contribute to your success in one or more units of study.

Once all learning outcomes have been completed your achievement will be graded.

Learning Support

During the course you will have regular personal tutorials during which you will agree personal learning goals and your progress through your individual learning plan will be monitored.

Teaching and learning

Knowledge is developed through

- Workshops and demonstrations
- Lectures, tutorials and seminars
- Professional practice talks
- Personal research and independent study
- Educational visits
- Using learning resources and the internet

Thinking skills are developed through

- Tutorials and seminars
- Independent work
- Project work
- Practical engineering

Practical skills are developed through

- Practical workshops
- Working on projects
- Professional practice talks
- Study visits
- Use of computers

Skills for life and work (general skills) are developed through

- Professional practice talks
- Work placements
- Group projects
- Personal and team presentations

Assessment

Knowledge is assessed by

- Presenting a body of coursework at the end of each unit
- Essays, reports and research folders at the end of each module
- Breadth and depth of research work

Thinking skills are assessed by

- Presenting a body of coursework at the end of each unit
- Essays, reports and research folders at the end of each unit
- Innovation and lateral thinking displayed in realisation of work in relation to project briefs

Practical skills are assessed by

- Continuous monitoring of practical skills
- Presentation of assignment work at the end of the unit

Skills for life and work (general skills) are assessed by

- Participation in workshops, seminars, tutorials and meetings
- Time management in relation to meeting project deadlines
- Engagement in professional practice components of the programme, work placement, and group activities

HOW WE ASSURE THE QUALITY OF THIS PROGRAMME

Before this programme started

Before this programme started the following were checked

- there would be enough qualified staff to teach the programme
- adequate resources would be in place
- the overall aims and objectives were appropriate
- the content of the programme met national benchmark requirements
- the proposal met other internal quality criteria covering a range of issues such as admissions policy, teaching, learning and assessment strategy and student support mechanisms

This is done through a process of course approval

How we monitor the quality of this programme

The quality of this programme is monitored each year through evaluating:

- external examiner reports (considering quality and standards)
- statistical information (considering issues such as the pass rate)
- student feedback

Drawing on this and other information, programme teams undertake the annual Course Review process which is co-ordinated across higher education and includes student participation.

The role of the programme committee

This programme has a programme committee comprising all relevant teaching staff, student representatives and others who make a contribution towards the effective operation of the programme (e.g. library/technical staff). The committee has responsibilities for the quality of the programme. It provides input into the operation of the course review process and proposes changes to improve quality

The role of external examiners

The standard of this programme is monitored by at least one external examiner. External examiners have two primary responsibilities:

- to ensure the standard of the programme
- to ensure that justice is done to individual students

External examiners fulfil these responsibilities in a variety of ways including:

- approving assignments
- attending examination boards
- reviewing samples of student work and marks awarded
- ensuring that regulations are followed

Listening to the views of students

The following methods for gaining student feedback are used on this programme:

- evaluations
- student representation on programme committees
- project critiques and tutorials

Students are notified of the action taken through:

- posting information regularly on the college's VLE (e-campus)
- circulating the minutes of the programme committee
- providing details on the programme notice board

Listening to the views of others

The following methods are used for gaining the views of other interested parties:

- conferences
- consultancy
- industrial liaison
- placements
- visits

WHERE YOU CAN FIND FURTHER INFORMATION

Further information about this programme is available from:

<http://www.barkingdagenhamcollege.ac.uk/>

4.10 Descriptor for a higher education qualification at level 4 on the FHEQ: Higher National Certificate

The descriptor provided for this level is for any Certificate of Higher Education, which should meet the descriptor in full. This qualification descriptor should also be used as a reference point for other qualifications aligned with level 4 of the FHEQ.

Certificates of Higher Education are awarded to students who have demonstrated:

- knowledge of the underlying concepts and principles associated with their area(s) of study, and an ability to evaluate and interpret these within the context of that area of study*
- an ability to present, evaluate and interpret qualitative and quantitative data, in order to develop lines of argument and make sound judgements in accordance with basic theories and concepts of their subject(s) of study.*

Typically, holders of the qualification will be able to:

- evaluate the appropriateness of different approaches to solving problems related to their area(s) of study and/or work*
- communicate the results of their study/work accurately and reliably, and with structured and coherent arguments*
- undertake further training and develop new skills within a structured and managed environment.*

And holders will have:

- the qualities and transferable skills necessary for employment requiring the exercise of some personal responsibility.*