Division of Technology

BTEC NATIONALS

ACE – North Road

Course Handbook

2007-2008
# Course Structure

<table>
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<tr>
<th>Originating School</th>
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<tr>
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<td>Applied Electronics &amp; Computing (ACE)</td>
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<tr>
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<td>BTEC National Diploma and Certificate (III)</td>
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<tr>
<td>Course titles</td>
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<td></td>
<td>IT Practitioners</td>
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<tr>
<td>Place of Delivery</td>
<td>Bournemouth and Poole College</td>
</tr>
<tr>
<td></td>
<td>North Road, Poole, Dorset</td>
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<tr>
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<tr>
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<td>Lesson Times</td>
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<td>9.00 am to 8.00 pm (part time)</td>
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<tr>
<td>Course Tutors</td>
<td>R Averill – Diploma (full time)</td>
</tr>
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<td>P Deacon – Certificate (part time)</td>
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<td>Bob Averill</td>
</tr>
<tr>
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<td>Richard Chamberlin</td>
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<td>Peter Deacon</td>
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<td>Carole Hawkes</td>
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<td>Steve Kirkham</td>
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<td>Tony Manton</td>
</tr>
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<td>Geoff Wingfield</td>
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1 - INTRODUCTION

1.1 Documentation

1.1.1 The aim of the document is to define the course structure, the assessment criteria and to act as a generalised document outlining all aspects of your course you need to know. The document also outlines all regulations to achieve a successful outcome.

1.2 Background

1.2.1 BTEC’s consist of a range of courses set out by the awarding body EDEXCELL and form a series of qualifications accredited to the National Qualification Framework (NQF). BTEC Nationals are split into two categories. The National Diploma, and the National Certificate. The National Diploma consists of 18 units (subjects) studied over 2 years. The same applies for the Certificate, except 12 units are studied. For both courses 6 units are core units which apply to all BTEC Nationals in Engineering. The other units are chosen to suit individual course requirements. Added to these units will be a tutorial (full time only) and key skills (Application of Number, Communications and Information Technology).

1.2.2 The course is delivered over 2 years and will be introduced to you during the induction period at the start of the course. Each year consist of half the required units and are delivered by formal lessons and practical sessions.

Each lesson is approximately 1 hour 30 minutes and are taught by full and part time teaching staff. Lesson times may vary from day to day, but a total of about 18 hours is undertaken each week, usually over a 3 day period.

1.2.3 All groups will be assigned a personal tutor responsible for their wellbeing on the course. Each personal tutor will draw up an action plan to check progress and learning (value added). All full time students will be assigned 1 hour per week for tutorial activities. Part time groups will have tutorial activities built into their weekly program.

1.3 Progression

1.3.1 On successful completion of the course there are three commonly chosen routes. Employment, University or Foundation Degree at the college. Each route suits individual requirement and are generally discussed with your personal tutor.
2- AIMS AND OBJECTIVES

2.1 AIMS

2.1.1 This vocational course aims to equip students with:

- an understanding of electronic components and systems
- an understanding of electronic and mathematical principles
- an understanding of computer hardware and maintenance
- an understanding of computer software and applications
- an understanding of data networks and communications
- a good working knowledge of industrial practices
- a basis for making sound and scientific informed qualitative and quantitative professional judgements on electronic and computer systems.
- practical skills and underpinning knowledge to enable them to gain employment or for further academic study.
- transferable skills for those who seek employment.

2.2 Objectives

2.2.1 Having successfully completed this course of study the student will be able to:

- demonstrate an understanding of the relationship between electronic systems and computer specifications
- demonstrate an understanding of electronic components and electronic systems, both digital and analogue in nature.
- demonstrate an understanding of computer hardware and microsystems both practically and theoretically.
- demonstrate an understanding of computer software in terms of programming techniques, web design and standard Microsoft Office applications.
• demonstrate an understanding of data communications networks as used by computer network and telecommunications systems.

• make well formulated and founded mathematical decisions for effective circuit understanding.

• successfully complete the assigned projects and communications topics as issued by EDEXCEL.

• Undertake a successfully tutorial program, completing and acting on discussions made in action plans.

• Undertake a structured key skills program in Communications, numeracy and IT.
3 - COURSE STRUCTURE

3.1 BTEC NATIONAL DIPLOMA – ELECTRONICS AND COMPUTING

3.1.1

1st Year

Mathematics I
Project
Electrical & Electronics Principles I
Electronics
Microelectronics
Electronic Circuit Manufacture
Software Development Methods 1
Data Communications
Web Design

2nd Year

Business Systems
Project
Communication

Core

Specialist

Digital & Analogue Electronics
Fault Finding
Electrical & Electronics Principles II
Mathematics II
PC Specs and Maintenance
Microcontrollers
Software Development 2
3.2 BTEC NATIONAL CERTIFICATE PART TIME
ELECTRICAL AND ELECTRONIC ENGINEERING

3.2.1

1\textsuperscript{st} Year

Mathematics I
Project
Electrical & Electronics
Principles I

Electronics
Electrical Applications

2\textsuperscript{nd} Year

Business Systems
Project
Communications

Electronic Fault Finding
Further Mathematics II
Further Electrical/Electronic
Principles
Microprocessors & Software
Development
3.3 BTEC NATIONAL DIPLOMA – IT PRACTITIONERS

3.3.1

1st Year

Information Systems
Computer Systems
Software Design and Development
IT System Analysis and Design

Communications Technology
Web Production
Digital Graphics and Computers
IT Trouble Shooting
Maths for IT

2nd Year

Communications
Event Driven Programming

IT Project
Controlling Systems using IT
Object Orientated Programming
Web Server Scripting
Computer Animation
Maintaining Computer Systems
3.4 BTEC FIRST DIPLOMA – IT PRACTITIONERS

3.4.1

**Year 1**

**Using IT to Present Information**

**ICT Project**
- Installing Hardware
- Software Development
- Intro to Computer Systems
- Networking Principles
- Numerical Applications
4 - STUDENT EXPERIENCE

4.1 Delivery and Student Experience

4.1.1 Both years of each program is based at The Bournemouth and Poole College, North Road, Poole.

4.1.2 During the course, students will experience:

- An Induction period at the start of the course to gain knowledge of the course and general information about the college and its facilities.
- Formal lectures, to introduce new subjects and impart information.
- Verbal, written and diagrammatic presentation of information and data.
- Workshops and practical sessions to test and apply the scientific techniques.
- Project-based work, to develop abilities in working both individually and as a member of a team.
- Industrial or site visits may take place to endorse certain technical aspects.
- Keyskills, to continue and develop knowledge based around communications numeracy and Information Technology.
- Tutorials to give pastoral and academic feedback.

4.1.3 Students will also experience a wide range of learning modes and assessment procedures during the taught components of the course. Formal lectures will be delivered by the course team and are generally assessed by either coursework, assignments, phase tests or a combination of all three. Each unit has set criteria to gain successful completion. These are listed in the course units and assessment criteria in section 9.0. Each unit is graded as pass, merit and distinction, and on completion your overall grade will be determined from the number of passes, merits and distinctions attained.
4.1.4 In order that students develop a portfolio of professional skills in addition to the core theory and practice the course will attempt to introduce students to:

- The use of IT with reference to Microsoft Office Applications.
- methods and skills required for planning and organisation everyday activities associated with the workplace.
- research skills using libraries and the internet.
- communication and interpersonal skills.
- the responsibilities of meeting time related deadlines.

4.1.5 The supervised project phase as determined by EDEXELL will allow students to:

- develop and refine individual and group research skills.
- demonstrate their application.
- develop group relationships and team work.
5 - ADMISSIONS

5.1 Entry Requirements

5.1.1 Applicants should be 16 years of age by 31st August in the year of entry.

5.1.2 BTEC National Diploma requires at least 5 grade “C” at GCSE or above. Preferably in the following areas of study from school:

- Mathematics
- English
- Science / Technology or equivalent
- IT / Computing or equivalent

5.1.3 BTEC National Certificate (Full Time) requires at least 4 grade “C” at GCSE or above. Preferably in the following areas of study from school:

- Mathematics
- English
- Science / Technology or equivalent
- IT / Computing or equivalent

- IT / Computing or equivalent

OR

equivalent industrial experience.
6 - COURSE REGULATIONS

6.1 General Conduct

6.1.1 The course requires that all students abided by the rules and regulations as laid down in the college wide handbook. This is outlined during induction period at the start of the course.

6.1.2 Any discipline problems or conduct problems will be dealt with reference to the students discipline procedure as listed in your college wide handbook.

6.2 Course Requirements

6.2.1 All work issued by tutors is required to be completed. Failure to do so will result in an unsuccessful completion of the specific unit.

6.2.2 All assignments issued to the students will be given a completion date. If work is late, individual penalties will apply. Such as a reduction in grade.

6.2.3 All questions given in a phase test must be completed to a pass standard. If any questions are not answered or insufficiently answered it will require a repeat (at least 1 week later). Continual failure will result in unsuccessful completion of the unit.

6.2.4 No percentages are ever issued. All marks will graded pass, merit or distinction with reference to the unit criteria and an overall grade will be issued using a points system as outline in section 7.

6.2.5 Any medical reasons for not following the regulations will require a medical note or parental acceptance.

6.2.6 Students will be expected to attend on a regular basis. If any lesson is missed for more than four consecutive periods a warning will be issued. This usually takes the form of a written letter, a copy of which will be forwarded to parents if deemed constructive.
7 – ASSESSMENT PRINCIPLES

7.1 Assessment

7.1.1 All assessment for BTEC Nationals is criterion-referenced, based on the achievements of specified outcomes. All units contributing to the programme carry either internal or external assessment. All units contain contextualised-grading criteria and will individually graded as pass, merit or distinction. To achieve a pass grade for the unit learners must meet the assessment criteria set out in the specifications.

The units in BTEC National qualifications all have a standard format which is designed to provide clear guidance on the requirements of the qualification for learners, assessors and those responsible for monitoring national standards.

7.2 Unit Format

7.2.1 Each unit is set out in the following way.

- **Unit title, learning hours and level.**

  The unit title is accredited by QCA and this form of words will appear on the learner’s Notification of Performance. In BTEC National qualifications each unit consists of 60 guided learning hours.

- **Description of Unit**

  A brief description of the overall purpose of the units is given, together with the key areas of study associated with the unit. The description also gives the mode of assessment.

- **Summary of learning outcomes**

  The outcomes of the unit identify what each learner must do in order to pass the unit. Learners should achieve all the outcomes in order to pass the unit.
• **Content**

This section picks up highlighted words from the outcomes and amplifies the content coverage required when addressing the outcomes. The contents section will often have a list of topic.

• **Assessment guidance**

Each unit contains statements of the evidence that each learner should produce in order to receive a pass, merit or distinction grade. It is important to note that the merit and distinction grading criteria refer to a qualitative improvement in the learners evidence. **Learners should not be asked to perform additional tasks or work to that required by all learners including those who achieve a pass grade.**

• **Keyskills**

This section identifies where there may be opportunities within the qualification for the generation of evidence to meet the requirements of key skills units.

7.3 **Assessment methods**

7.3.1 Internal Assessment

Internal assessment will take place by course tutors to ensure that effective learning of the content of each unit has taken place. Each unit will be assessed in one of three ways.

- Coursework
- Formal Assignments
- Phase/End tests

Each assessment will clearly state which criteria is being covered and how it is possible to achieve the respected grades of pass, merit and distinction.

An assessment guidance grid will be created for each student so that they can clearly track their progress throughout the year.
7.3.2 Internal Verification

The college has in place the process of internal verification (IV). This means all assessment methods, for each unit, are checked by a specified person.

Worked carried out by students is also internal verified at the sampling rate laid down by BTEC. This is typically 50%.

7.3.3 External Verification

At a time decided by the external verifier, a sample of students work will be looked at to compare the college's standard against that of similar establishments offering similar courses and the accepted national standards.

At the end of this process a report will be issued to the college highlighting any problems that require attention.
### 7.3.4. Overall Grading National Diplomas

<table>
<thead>
<tr>
<th>Size of unit (GLH)</th>
<th>Pass grade</th>
<th>Merit grade</th>
<th>Distinction grade</th>
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<tr>
<td>10</td>
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<td>2</td>
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**Grade boundaries and UCAS points (as of 1st January 2007)**

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<th>UCAS points</th>
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<td>36 - 59</td>
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<td>84 - 108</td>
<td>Distinction</td>
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<table>
<thead>
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<td>96 - 119</td>
<td>MP</td>
<td>120</td>
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<td>120 - 143</td>
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<th>Grade boundaries</th>
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7.3.4. Overall Grading First Diplomas

<table>
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<th>Distinction grade</th>
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<tr>
<td>120</td>
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The points are added together to give your final grades as follows:

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<th>Distinction grade</th>
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<td>60-83</td>
<td>84-95</td>
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