

# Birmingham City University Technology Innovation Centre

## Foundation Year Programme

### Programme Specification including Student Guide and Employer Guide

## BSc Computer Technology Foundation

Date of Course Approval/Review	Version Number	Version Date
20 April 2005	2.01	20 April 2005



# CONTENTS

Definitive Documents and Version Control.....	1
PROGRAMME SPECIFICATION.....	2
Student's Guide .....	13
Employer's Guide .....	15

## Definitive Documents and Version Control

This document has a version number and reference date in the footer. Documents originating from the 1999 scheme follow the sequence 1.01, 1.02, 1.03 etc. Documents originating from the 2005 scheme begin with 2.01 as the first released version and follow the same sequence.

The process leading to introduction of new courses, and major changes to courses follows **tic** procedure QA 1 and culminates in approval by the University's Senate.

The process leading to introduction of minor changes to modules and courses follows **tic** procedure QA 5 and culminates in approval by the Dean.

The reference date will be that of the validation event, minor changes board, or other meeting at which formal consideration was given.

Further details about the course and document development may be obtained from minutes of the validation, or minor changes board. A history of the document is summarised in the table below and further information relating to past versions can be obtained from the **tic** Registry.

<b>BSc Computer Technology Foundation Programme Specification, Student and Employer Guides</b>			
<b>Version</b>	<b>Event</b>	<b>Date of event</b>	<b>Authorised by</b>
2.01	Review & Re-Approval	20 April 2005	Dean of Faculty

# BSc Computer Technology Foundation

## PROGRAMME SPECIFICATION

**NOTE:** This specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if s/he takes advantage of the learning opportunities that are provided. More detail on the specific learning outcomes, indicative content and the teaching, learning and assessment methods of each module can be found (1) at <https://web.tic.ac.uk> , (2) in the Module Specification Handbook, and (3) in the Student Handbook. The accuracy of the information contained in this document is reviewed by the University and may be checked within independent review processes undertaken by the Quality Assurance Agency.

The information from this specification may be selectively extracted and included in documents that are more appropriate for students, intending students and employers.

<b>1</b>	<b>Awarding Institution / Body:</b>	<b>Birmingham City University</b>
<b>2</b>	<b>Teaching Institution:</b>	<b>Technology Innovation Centre</b>
<b>3</b>	<b>Programme accredited by:</b>	
<b>4</b>	<b>Final Award:</b>	<b>Foundation Certificate</b>
<b>5</b>	<b>Programme Title:</b>	<b>Computer Technology Foundation</b>
<b>6</b>	<b>UCAS Code:</b>	<b>H618, H139, H608, GHK6, HGP6, H778</b>
<b>7</b>	<b>QAA Benchmarking Group:</b>	<b>Engineering</b>

## **8 Aims of the programme**

The programme aims to provide learners with :

1. A broad and stimulating curriculum that offers an introduction to the study of technology, computing and business, leading a range of computer technology related BSc courses at the *tic*.
2. A route to a Higher Education for school leavers who do not have the required qualifications for normal direct entry and for mature students who have the potential to study at a Higher Education but may not have the required formal qualifications.
3. Teaching techniques which place emphasis on active and participative learning and the acquisition of effective study skills
4. Knowledge and transferable skills that are also generally applicable for employment for those not continuing to degree level.

**9 Intended learning outcomes and the means by which they are achieved and demonstrated: the programme provides learners with opportunities to develop and demonstrate knowledge and understanding, skills and other attributes as follows:**

**Knowledge and understanding**

<p><b>Knowledge and understanding of:</b></p> <ol style="list-style-type: none"> <li>1. Fundamentals of computers, microprocessors and interfaces for controlling systems.</li> <li>2. Low-level computer concepts and various programming paradigms.</li> <li>3. Fundamentals of science, electrical and electronic technology and systems design.</li> <li>4. Mathematical methods for solving problems and analysing data for applications related to science, technology, business and computing.</li> <li>5. Basic economic theory, company accounts, marketing and project management techniques.</li> <li>6. A range of IT systems (word processors, spreadsheets and databases) for analysing and communicating information.</li> </ol>	<p><b>Teaching, learning and assessment methods used:</b></p> <p>Knowledge and understanding are acquired through formal lectures, tutorials, laboratory and computer practical work and directed independent learning activities using IT, library and Learning Centre resources .</p> <p>Knowledge is assessed, formatively and summatively, by a number of methods, including seminars, coursework, examinations (seen and unseen, open- and closed- book), presentations, and practical project work.</p> <p>A range of assessment methods are employed such as practical project work, individual and group presentations, written coursework, laboratory experimentation, examinations (seen and unseen, open- and closed- book). The criteria for each module being published within each specified module guide.</p>
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## Skills and other attributes

<p><b>Intellectual / cognitive skills:</b></p> <ol style="list-style-type: none"><li>1. Apply mathematical techniques for analysis, communication and for solving technical and business problems.</li><li>2. Analyse and interpret data using statistical methods</li><li>3. Apply principles of electrical/electronic technology for systems design and solving problems.</li><li>4. Apply basic accounting and financial analysis techniques to data related to various business scenarios.</li><li>5. Apply IT, spreadsheet and database packages for analysis, communication and learning.</li><li>6. Generate simple designs using CAD and ECAD packages.</li><li>7. Gather information, use it selectively and communicate it rationally and coherently.</li><li>8. Implement simple programming constructs and devise tests for debugging programmes.</li></ol>	<p><b>Teaching, learning and assessment methods used:</b></p> <p>Intellectual skills are developed through teaching and learning programme previously outlined.</p> <p>Analytical and problem solving skills are developed using a range of appropriate 'real' and 'theoretical' case-studies and problem- and task-based learning scenarios.</p> <p>Assessment includes practical project work, individual and group presentations, written coursework, laboratory experimentation, examinations (seen and unseen, open- and closed- book).</p>
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**Practical, research and independent learning skills:**

1. Construct simple electronic/electrical assemblies
2. Use IT systems, the internet and electronic sources for research and communication.
3. Use laboratory and workshop equipment safely to undertake experiments.
4. Use various learning resources to gather business and technical information.
5. Use a range of research methods and sources such as digital library and web journals.
6. Undertake project work applying research methods and project monitoring and control techniques.

**Teaching, learning and assessment methods used:**

The acquisition of practical skills is central to the learning strategy of the programme along with building the confidence of students. Initiative and independence are fostered throughout, and should develop as the course progresses.

Learners are encouraged to plan their own work schedules and are required to meet deadlines. Diaries / logbooks are required to be kept in some modules. Learners undertake a group project as well as individual and group presentations..

<p><b>Transferable / key skills:</b></p> <ol style="list-style-type: none"> <li>1. Work and communicate effectively with others</li> <li>2. Manage time, prioritise workloads and work to deadlines.</li> <li>3. Make effective oral and written presentations.</li> <li>4. Access and make appropriate use of relevant numerical and statistical information.</li> <li>5. Use information and communications technologies, including word and data processing packages, the internet, and email.</li> <li>6. Reflect on personal development and begin to plan a career path.</li> </ol>	<p><b>Teaching, learning and assessment methods used:</b></p> <p>Transferable/key skills are developed as an integral part of the course.</p> <p>Appropriate information technology is used for learning and assessment for all modules.</p> <p>Assessment methods include practical work, presentations and coursework.</p>
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## 10 Programme structure and requirements, levels, modules, credits and awards

The structure of the course, the modules, levels and credit ratings, and the award which can be gained are shown below.

<b>Module number</b>	<b>Module name</b>	<b>Credit</b>
<b>FM0F15</b>	<b>Computer Technology</b> Data representation & number systems, data storage & retrieval, computer architecture, computer applications and programming, design, programming techniques, testing.	<b>24</b>
<b>FM0F30</b>	<b>Mathematics</b> Directed numbers, algebra, graphs, logarithms, exponential functions, trigonometry, statistics.	<b>24</b>
<b>FM0F31</b>	<b>Business &amp; Communications</b> Economic theory, microeconomics, accounting, the firm's costs, communications, definition of different economic systems, marketing, project planning.	<b>24</b>
<b>FM0F32</b>	<b>Information Studies</b> Report writing, word processing, spreadsheets, databases, presentation, project planning, web design.	<b>24</b>
<b>FM0F38</b>	<b>Electronics &amp; Design Technology</b> Physical science, electrical/electronic devices & basic circuits, systems design, computer aided design techniques.	<b>24</b>

**Award Foundation Certificate (120 credits)**

## **BSc Computer Technology Foundation**

Mathematics  FM0F30	Electronics & Design Technology  FM0F38	Computer Technology  FM0F15	Business & Communicat- ions  FM0F31	Information Studies  FM0F32
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**The programme comprises five modules, each of 24 credits, giving a total of 120 credits.**

## 11 Support for Learning

Students are encouraged to identify and, with guidance, to reflect on their own learning needs and are offered the following support as appropriate to those needs:

An induction programme dealing with orientation and the dissemination of essential information.

A dedicated Learning Centre with open access learning materials, resources and full-time staff specialising in a variety of support areas.

A Student Handbook, containing information relating to the University, Faculty, course and modules.

Access to administrative staff and to academic staff, including the Tutors, Course Director and Head of Division, at reasonable times.

Support staff to advise on pastoral and academic issues, and to offer support and assistance with the keeping of Students' Progress Files.

Access to Faculty resources, including the Faculty Resource Centre, and a range of supported IT equipment.

Access to the services of the Learning Centre and IT support staff.

Access to the University's Student Services, including those offered by the careers service, financial advisers, medical centre, disability service, crèche, counselling service and chaplaincy.

## 12 Criteria for admission

Entry requirements are in accordance with section D of the University's Academic Regulations and Practices.

All applicants must have GCSE (grade C or above) in Mathematics, or equivalent. In addition, applicants should have one of the following, for which the typical tariff offer is 100 points for Curriculum 2000, or equivalent for other qualifications. Actual tariff offers may vary from 100 points.

<b>Qualification</b>	<b>Requirements</b>
Curriculum 2000, A Levels	Five GCSEs/GCEs including at least one subjects at A2 level. Points tariff can include AS level
Curriculum 2000, AVC.	Two 6-unit or one 12-unit AVCE.
Irish Leaving Certificate	Passes in three subjects at the higher grade.
Scottish Certificate of Education	Passes in three subjects at the higher grade.
BTEC/Edexcel National Certificate/National Diploma	
An appropriate Advanced General National Vocational Qualification	
A professional qualification of an appropriate standard	
A qualification deemed equivalent to one of the above	

Other learning and experience may be considered for entry to the programme. A student may be allowed entry to the course if he or she does not have the standard entry qualifications but can provide evidence of necessary knowledge and skills to successfully enter and complete the programme.

Students over the age of 21 years do not require formal qualifications. They must show some indication of mathematical achievement or potential. A pass at 'O' level or an equivalent CSE or GCSE grade in Mathematics is sufficient formal qualification. All mature students will be interviewed. All mature students will be required to sit a mathematics and English test before an offer of a place can be made.

UCAS applicants are invited to visit the **tic** during open days held through the academic year. Open day programmes include a tour of facilities and an introduction to the **tic**'s courses and activities. Meetings are arranged between course tutors and prospective students to ensure opportunity is provided for individual questions and clarification of the course content.

### 13 Evaluation and improvement of quality and standards

<p><b>Committees:</b></p> <p>Course Committee Board of Studies Examination Board Learning Management Committee Faculty Board Learning Quality Committee</p>	<p><b>Mechanisms for review and evaluation:</b></p> <p>Review and validation events Accreditation by professional bodies Annual Monitoring Report Student feedback questionnaires Annual staff appraisal External Examiners' Reports Course team meetings</p>
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### 14 Regulation of assessment

Details of the mechanisms and criteria for assessment in individual modules, and the means of determining final degree classifications, are published widely. Students are able to access the University's Standard Undergraduate Assessment Regulations on the Intranet and individual and collective guidance is given by academic staff on their operation at appropriate times throughout the course.

To qualify to proceed to year 1 of the follow-on honours degree, or for the Foundation Certificate award, a student must successfully complete all modules and obtain 120 credits. The pass-mark in all modules is 40%.

**External Examiners** are appointed. Their work includes:

- Reviewing coursework assignments and assessment criteria
- Approving examination papers
- Monitoring standards through moderation of completed assessments
- Attending Examination Boards
- Participating in the course review processes.

# BSc Computer Technology Foundation

## Student's Guide

This one year course has been designed as a gateway to the following technology and business related BSc courses:

- BSc (Hons) Computer Networks
- BSc (Hons) Computer Networks for Business
- BSc (Hons) Computer Networks and Security
- BSc (Hons) Information and Communications Technology
- BSc (Hons) Software Design and Networks
- BSc (Hons) Computing and Electronics
- BSc (Hons) Computer Aided Design
- BSc (Hons) Engineering Product Design
- BSc (Hons) Computer Aided Automotive Design

Whether you are interested in the application of computers to business, using information technology or designing with computers this one year course will give you an essential grounding in the key subjects needed for studying at degree level.

### What will you study?

The course has five key subject areas. Science and Electronics provide the theoretical background to understanding technology along with studying Computing. Maths is there to help support your studies in these areas. Business and Communications provide an understanding of how companies work and how to work effectively in a business environment. Information Studies will equip you with an understanding of how to use a range of up to date software packages to help you in your studies.

### How will you be taught?

The teaching is through a combination of lectures, tutorials and laboratories and will involve group working and student-led work as well so you will be involved in developing your learning.

### What help is there for your studies?

In addition to help from your tutors, the **tic** provides comprehensive learning support and information to assist you from the day you enrol. There is an induction programme to introduce you to the facilities such as the Learning Centre and a range of student services, as well as specialist support tutors who can provide supplementary assistance with subjects such as mathematics and computing. The **tic** intranet enables much of the general information including course content and delivery timetables and record of coursework handed-in, to be readily available both on and off-site.

## How to apply:

**University Faculty:** Birmingham City University  
Technology Innovation Centre  
Millennium Point, Curzon Street, Digbeth  
Birmingham B4 7XG  
Telephone: (+44) (0)121 331 5400  
<http://www.tic-online.com>

**Applications:** UCAS  
Rosehill  
New Barn Lane  
Cheltenham  
Gloucestershire GL52 3LZ  
Telephone (+44) (0)1242 223707  
<http://www.ucas.ac.uk/>

**UCAS code:** H 618

**Course Length:** 1 year full-time

**Location:** Millennium Point, Birmingham

**Enquiries:** Information Officer (at the above address)  
Telephone: (+44) (0)121 331 5400  
Email: [enquiries@tic.ac.uk](mailto:enquiries@tic.ac.uk)

# BSc Computer Technology Foundation

## Employer's Guide

The Technology Innovation Centre (*tic*), part of Birmingham City University, offers this one year course to prepare students for year 1 of the following BSc degree courses:

- BSc (Hons) Computer Networks
- BSc (Hons) Computer Networks for Business
- BSc (Hons) Computer Networks and Security
- BSc (Hons) Information and Communications Technology
- BSc (Hons) Software Design and Networks
- BSc (Hons) Computing and Electronics
- BSc (Hons) Computer Aided Design
- BSc (Hons) Engineering Product Design
- BSc (Hons) Computer Aided Automotive Design

Students passing the Foundation Year progress to their choice of first year of one of the above degree courses.

### Facilities

Students following the programme have access to the *tic*'s state-of-the-art technical and computing facilities and a dedicated team of tutors and technologist staff.

### Programme Aims

The programme aims to develop knowledge and stimulate interest in science, business studies and information technology and to develop an awareness of their fundamental role in business, economic and social terms. The course provides opportunities for mature students without formal qualifications and school leavers with inappropriate qualifications for normal direct entry, a route leading to BSc (Hons) degree courses.

The course also develops knowledge and transferable skills that are generally applicable for employment for those not continuing to degree level.

## **The Curriculum**

The content and structure of the course are designed to provide the fundamental knowledge and key skills required for success on a BSc degree course. There are five main topics:

Computer Technology  
Science, Technology and Electronics  
Business & Communications  
Mathematics  
Information Technology

## **Expected Outcomes**

On completion of the Foundation Year, students can be expected to have acquired knowledge and understanding appropriate for successful study at undergraduate level and for making an effective contribution in the workplace. Students should have gained important transferable skills including numerical, communication and IT skills and the ability to manage time, and work and relate effectively with others.