

Hertfordshire Higher Education Consortium

# Computing Technologies

- Foundation Degree



## Foundation Degree

### What is a Foundation Degree?

Foundation Degrees are university level degree courses that offer an exciting work-based alternative to the traditional university route. They are:

- A stand-alone recognised qualification.
- Equivalent to studying the first two years of an honours degree programme.
- Highly valued by employers.

### How does this work?

Foundation Degrees in Hertfordshire are accessible through your local college, as part of the Hertfordshire Higher Education Consortium\*. On graduation you will be awarded a University of Hertfordshire validated degree, and depending on your chosen course you even get letters after your name... FdA, FdSc.

### Benefits to studying a Foundation Degree

- **real-life projects** which enable you to gain valuable work experience whilst allowing you to apply your skills and knowledge.
- **support** that's available throughout your course from tutors and advisors in College and mentors in your place of work.
- **affordable** because you can choose from one of four colleges to study at you will never be far from home, saving you money on living costs.
- **funding** through student tuition fee loans will cover the cost of your programme – so there's nothing to pay up front.

### Who can study a Foundation Degree?

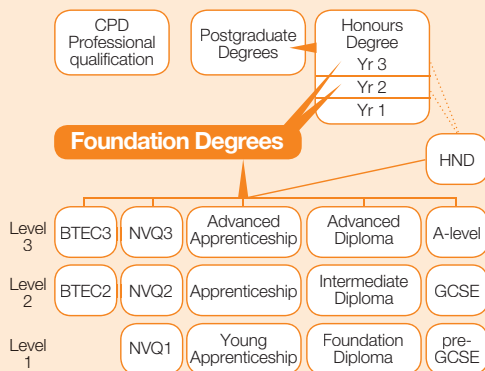
Foundation Degrees are suitable for all kinds of candidates including:

- Those with Level 3 qualifications (eg A Levels, Advanced Apprenticeships, BTECs, Access to Higher Education or City & Guilds).
- Those looking for a change in career.
- Those already employed but wanting to gain a Higher Education qualification either to progress their career or other aspirations.

### What can I do with my Foundation Degree?

That really is up to you! Your degree will ensure that you are well equipped to start your career path and research shows that those with a Higher Education qualification earn 25% more than those without! However, if you have a taste for learning you can 'top-up' your Foundation Degree to a BA or BSc honours degree.

### How do Foundation Degrees fit with other qualifications?



### Hertfordshire Higher Education Consortium\*

The Hertfordshire Higher Education Consortium is a partnership between the University of Hertfordshire, Hertford Regional College, North Hertfordshire College, Oaklands College and West Herts College.

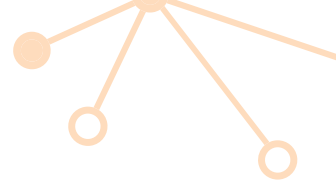
The consortium provides innovative, high quality courses that support vocational higher education. Students get the best of both worlds – the benefits and support of studying at college, and access to University facilities including the libraries (LRCs), athletic and student unions all social activities, careers support and much, much more.



The table shows the structure of the Foundation Degree in Computing Technologies – Illustrated as a full-time course.

Year One	Semester A	Developing Professional and Employability Skills (30 credits)	Computer Systems Architecture (15 credits)	Systems Analysis (15 credits)	Understanding Programming (15 credits)
	Semester B		Computer Network and Introduction to Wireless (15 credits)	Understanding Databases and Data Analysis (15 credits)	Further Programming (15 credits)
Year Two	Semester A	Work Based Learning Project (30 credits)	Designing for User Experience (15 credits)	Advanced Programming and Paradigms (15 credits)	Specialist pathway module 1 (15 credits) (Software Development 1) (Entertainment Systems 1) (Advanced Networking 1)
	Semester B		Web Applications and Mobile Technologies (15 credits)	Computing	Specialist pathway module 2 (15 credits) (Software Development 2) (Entertainment Systems 2) (Advanced Networking 2)





## What will I study in my first year?

In the first year you will study modules that give you a good grounding in computing technologies. These modules are common to all students regardless of what pathway you have chosen.

### Core Modules

#### Developing Professional and Employability Skills (30 credits)

This module is designed to prepare you for the course and for your future workplace. It will enable you to identify your academic and personal skills, and assist in the development of strategies for building on areas of strength and for identifying and addressing areas for improvement.

The module will emphasise key study skills including note-taking, writing, presentation skills, critical thinking, formulation of an argument, finding and using sources of information and referencing.

#### Understanding Programming (15 credits)

This module will give you a firm grounding in programming techniques, equipping you with the ability to explain and apply fundamental concepts of procedural language programming and preparing you to progress on to more advanced programming techniques in later modules.

#### Further Programming (15 credits)

This module will provide you with the ability to explain and apply the more advanced concepts of programming, expanding on the knowledge gained in Understanding Programming and providing an opportunity for further study of more advanced programming in any programming language.

#### Computer Systems Architecture (15 credits)

You will study the architecture of computer systems and develop the skills to specify a computer system according to client requirements during this module.

### Entry requirements

The normal entry requirements for the programme are:

- 48 points, including one GCE A Level or equivalent
- GCSE English language and maths at grade 4 or above (or equivalent)
- If English is not your first language, you will need an IELTS score of 6.0 TOEFL of 80 (IBT) or equivalent.

### How to apply

Applications are to be made through UCAS – [www.UCAS.com](http://www.UCAS.com). Institutional Code: Herts H36.

### How is the programme assessed?

Assessment of the programme will be a combination of both coursework and examination. However, the main focus of assessment will be on coursework in the form of written assignments. Coursework may be based on both individual work and group work.

### What will I learn?

This Higher Education qualification can lead you to a wide range of careers within the computing industry allowing you to specialise in a particular area of study that interest you. It offers a creative mix of academic study, skills development and practical training, giving you the best possible platform for your career.

### Specialist Pathways

There are three specialist pathways for you to choose from, each with a different focus. All students on the Computing Technologies foundation degree will study the same modules in their first year before going on to specialise in their second year.

Pathways:

- Computing Technologies (Media Systems)
- Computing Technologies (Networks)
- Computing Technologies (Software Development)

### Where will I study

The Foundation Degree in Computing Technologies is offered at North Hertfordshire College and West Herts College.



You will select complete computer specifications from hardware components to operating systems on behalf of a client based on their specified requirements. You will also gain an introduction to low-level machine language and data representation during this module.

#### **Understanding Databases & Data Analysis (15 credits)**

This module will provide a good grounding in databases and data analysis. You will be equipped with the knowledge and skills to investigate the data requirements of a business problem and establish, through the use of data modelling tools, the structure of the database. You will design and develop a database as a part of this module.

#### **Computer Networks & Introduction to Wireless (15 credits)**

This module will outline the benefits of a computer network and enable you to explain those benefits to an organisation. You will explore a variety of network types and then design a network according to a specific set of requirements. You will also be introduced to the practical elements of networking.

#### **Systems Analysis (15 credits)**

This module will enable you to investigate a business related problem and identify system requirements. You will gain an introduction to various solution styles including transaction processing, management information, decision support and expert systems. You will complete a systems specification as part of this module.

#### **What will I study in my second year?**

Your second year provides an opportunity for you to take the general computing knowledge gained in your first year and build on it, while focusing in on the specific area of computing that interests you.

#### **Modules common to all pathways**

##### **Work based Learning Project (30 Credits)**

The Work Based Learning Project provides an opportunity to expand, develop and apply the knowledge, understanding and skills learnt in on the course in a work-related setting. You will be encouraged to develop the necessary employer links, with the help of the college, usually working with small or medium sized enterprises (SMEs) which could include charitable and voluntary organisations. Part-time students would normally be hosted by their employer and may dovetail their project into their work. Your project must be linked to your chosen specialist pathway.

## Advanced Programming & Paradigms

This module emphasises the practical application and underlying concepts of programming, without focussing on the details of a particular language. You will focus on the advantages of modularisation and design aspects. You will gain an introduction to a variety of broad concepts within this subject area, to enable you to design, implement, test and debug simple programmes in object-oriented language, apply design methodologies to develop object-oriented programs and apply basic principles to achieve reusability in programming.

## Designing for user experience

This module will introduce you to fundamental principles for effective design and provide opportunities to investigate in further detail the principles behind successful graphical interfaces. You will gain the knowledge and skills to enable you to design and develop simple web based systems using Rich Internet Technologies and examining issues associated with HCI.

## Computing in Business

This module will explore the activities that constitute e-business and its importance to businesses as an alternative or sole channel for their operations. You will have the opportunity to reflect on the impact of e-business in organisations and on society. You will cover a range of topics including information needs within an organisation and how it impacts on performance, sales as a means of extending marketing and web design criteria.

## Web Applications & Mobile Technologies

You will explore the design and creation of interactive web pages within this module gaining a fundamental understanding of web design and web operation servers. You will develop your knowledge and skills in the area of scripting and web tools required for implementation. During this module you will use the skills learned in some first year modules to design and implement an active database component to be processed by the client.

“ It was a real advantage to be able to study at a college close to home but still be a university student – I’d never have been able to afford a university qualification otherwise. ”

*Emma Obichukwu, IT & Business foundation degree graduate.*

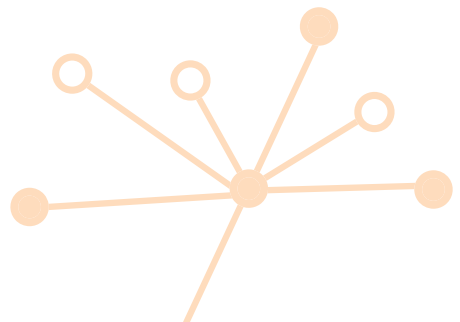
## Modules specific to your specialist pathway Media Systems

### Entertainment Systems (1)

This module will explore the representation, storage and transmission issues that arise when bringing different digital forms together along with design issues and the use of specific tools in image development and reinforcement. You will gain an understanding of issues of combining media in different forms and the technical foundation of digital multimedia.

### Entertainment Systems (2)

You will study the historical development of games, educational learning and e-commerce and how things have developed, during this module. You will also study the planning process for multimedia projects, how to manage multimedia information as well as all aspects of creating and packaging an entertainment product for market.





## Software Development

### Software Development (1)

During this practical module you will study current and emerging technologies in software development along with an understanding of industry standards and current best practice tools. You will use models, including the Unified Modelling Language, to produce models of a system at various stages illustrating how a software project can be elaborated from design to implementation and deployment. You will develop your expertise in appropriate software development tools.

### Software development (2)

This module will expand the understanding, knowledge and skills you have developed in the software and programming parts of the course. You will be given a project specification designed to allow you to use this knowledge as well as providing some scope for creativity and the opportunity to extend your programming knowledge. You will be judged on your management of the project according to “good practice” as well as the practical use of the principles and characteristics of good software design.

## Networks

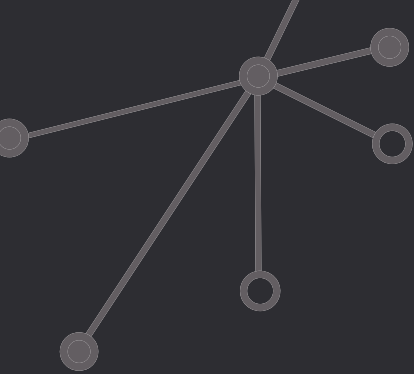
### Advanced Networking (1)

This module will give you an excellent grounding in routing and switching devices in an enterprise network. You will develop an ability to analyse and evaluate several functions related to routing and packet forwarding as well as how to troubleshoot routing issues and the design and configuration of a routed network.

### Advanced Networking (2)

The focus of this module is on the architecture, components, and operations of routers and switches in a large and complex enterprise network. You will learn how to configure routers and switches for advanced functionality. You will be able to develop an understanding of DHCP and DNS operations, complex routed network operations for IPv4 and IPv6, redundant network designs, STP and RSTP operations in a switched network, link aggregation, EtherChannel and wireless operations in an enterprise LAN. You will also be able to plan and configure single-area and multi-area OSPF, advanced features of EIGRP, VLAN Trunking Protocol and Wireless LAN Security.





## For further information

### **North Hertfordshire College**

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[www.nhc.ac.uk](http://www.nhc.ac.uk)

### **West Herts College**

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[www.westherts.ac.uk](http://www.westherts.ac.uk)

### **University of Hertfordshire**

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