





DREAM & H DEMONT

DeMont Institute of Management and Technology is among the first Technical and Vocational Education and Training (TVET) providers in the UAE. DeMont offers NCFE, CMI, and Pearson programs that are accredited by Knowledge and Human Development Authority (KHDA). We have mastered the art, science, and practice of providing quality UK education with optimum result-centric teaching models that include pedagogical and blended forms of learning. Imparting quality education, offering accredited certifications, and delivering lessons that will alter our students' experience for the better is at the core of our institution's value. DeMont aspires to pave a promising career pathway for all those who walk through the doors of the institution with the desire to learn and grow.



About Pearson

Pearson Education is a British-owned educational publishing and appraisal service for educational institutions and corporations. They offer academic and vocational qualifications that are globally recognized and benchmarked, with educational excellence rooted in names like Edexcel, BTEC, EDI, and LCCI. It integrates world-class educational content and evaluation, driven by services and technology, to allow more efficient teaching and customized learning.



Introduction to BTEC

BTEC is one of the world's most successful brands, that engages students in practical, interpersonal and thinking skills. BTECs are work-related qualifications for students taking their first steps into employment, or for those already in employment and seeking career development opportunities. BTECs provide progression into the workplace either directly or via study at university and are also designed to meet employer's needs. Therefore, Pearson BTEC Higher National qualifications are widely recognised by industry and higher education as the principal vocational qualification at Levels 4 and 5.

There is now a greater emphasis on employer engagement and work readiness. The new Pearson BTEC Higher National qualifications in Computing are designed to reflect the increasing need for high quality professional and technical education pathways at Levels 4 and 5, thereby providing students with a clear line of sight to employment and to progression to a degree at Level 6.

Why choose Pearson BTEC Higher Nationals?

Pearson BTEC Higher Nationals are designed to help students secure the knowledge and skills needed to succeed in the workplace. They represent the latest in professional standards and provide opportunities for students to develop behaviours for work, for example by undertaking a group project, or responding to a client brief.

A student may even achieve exemption from professional or vendor qualifications, or student membership of selected professional bodies, to help them on their journey to professional competence.

At the same time, the BTEC Higher Nationals are intended to keep doors open for future study should a student wish to progress further in their education. They do this by allowing space for the development of higher education study skills, such as the ability to research. Clear alignment of level of demand with the Framework for Higher Education qualification descriptors at level 4 and 5 means that students wishing to progress to level 6 study should feel better prepared. The Pearson BTEC Higher Nationals address these various requirements by providing:

- A range of core, and specialist units, each with a clear purpose, so there is something to suit each student's choice ofprogramme and future progression plans.
- Fully revised content that is closely aligned with the needs of employers, professional bodies, vendors and higher education for a skilled future workforce.
- Learning Outcomes mapped against Professional Body standards and vendor accreditation requirements, where appropriate.
- An approach to demand at level 4 and 5 which is aligned with the Framework for Higher Education Qualifications (FHEQ).
- Assessments and projects chosen to help students progress to the next level.
- Support for student and tutors including Schemes of Work and Sample Assessment Briefs.

BTEC HND Who is this **Computing**

qualification for?

The Pearson BTEC Higher National Diploma International in Computing are aimed at students wanting to continue their education through applied learning. Pearson BTEC Higher Nationals provide a wide-ranging study of the computing sector and are designed for students who wish to pursue or advance their career in computing. In addition to the knowledge, understanding and skills that underpin the study of the computing sector, Pearson BTEC Higher National Diploma International in Computing give students experience of the breadth and depth of the sector that will prepare them for further study or training.

Key Pearson BTEC Higher National Diploma International in Computing offer:

A stimulating and challenging programme of study that will be both engaging and memorable for students

The essential subject knowledge that students need to progress successfully into further study or the world of work.

A simplified structure: students undertake a substantial core of learning in the BTEC Higher National Certificate and can build on this in the BTEC Higher National Diploma, with specialist and optional units linked to their area of study.

Six specialist pathways in the BTEC Level 5 Higher National Diploma, so there is something to suit each student's preference of study and future progression plans.

Refreshed content that is closely aligned with Professional Body, vendor, employer and higher education needs.

Assessments that consider cognitive skills (what students know) along with affective and applied skills (how they behave and what they can do, respectively)

Unit-specific grading and Pearson set assignments.

A varied approach to assessment that supports progression to Level 6 and also allows centres to offer assessment relevant to the local economy, thereby accommodating and enhancing different learning styles.

Quality assurance measures - as outlined in sections 6 and 7 of this Programme Specification - to ensure that all stakeholders (e.g. professional bodies, vendors, universities, businesses, colleges and students) can feel confident in the integrity and value of the qualifications.

A qualification designed to meet the needs and expectations of students aspiring to work in an international business environment.

Qualification Frameworks

Pearson BTEC Higher National qualifications are designated higher education qualifications in the UK. They are aligned to the Framework for Higher Education Qualifications (FHEQ) in England, Wales and Northern Ireland, and Quality Assurance Agency (QAA) Subject Benchmark Statements. These qualifications are part of the UK Regulated Qualifications Framework (RQF).

Programme Purpose & Objectives

The purpose of Pearson BTEC Higher National Diploma International in Computing is to develop students as professional, self-reflecting individuals able to meet the demands of employers in the computing sector and adapt to a constantly changing world. The qualifications aim to widen access to higher education and enhance the career prospects of those who undertake them.



Objectives of the Pearson BTEC Higher National Diploma International in Computing

- To equip students with computing skills, knowledge and the understanding necessary to achieve high performance in the global computing environment.
- To provide education and training for a range of careers in computing, including network engineering, software engineering, data analytics, security, intelligent systems, and applications development.
- To provide insight and understanding into international computing operations and the opportunities and challenges presented by a globalised market place.
- To equip students with knowledge and understanding of culturally diverse organisations, cross-cultural issues, diversity and values.
- To provide opportunities for students to enter or progress in employment in computing, or progress to higher education qualifications such as an Honours degree in computing or a related area.

- To provide opportunities for students to develop the skills, techniques and personal attributes essential for successful working lives.
- To provide opportunities for those students with a global outlook to aspire to international career pathways.
- To provide opportunities for students to achieve a nationally recognized professional qualification.
- To provide opportunities for students to achieve vendor accredited certifications.
- To offer students the chance of career progression in their chosen field.
- To allow flexibility of study and to meet local or specialist needs.
- To offer a balance between employability skills and the knowledge essential for students with entrepreneurial, employment or academic aspirations.



Total Credits

240

240 credits.

What could these qualifications lead to?

The Pearson BTEC Higher National Certificate provides a firm foundation in computing at Level 4, vendor-accredited certification and Professional Body membership, all of which students can build on should they decide to continue their studies beyond the certification stage. The Pearson BTEC Higher National Diploma allows students to specialise by committing to specific career paths and progression routes to degree level study. On successful completion of the Pearson BTEC Higher National Diploma at Level 5, students can develop their careers in the computing sector through:

- Entering employment
- Linking with the appropriate vendor accredited certificates
- Committing to Continuing Professional Development (CPD)

Progression to University

The Level 5 Higher National Diploma is recognized around the world as a qualification for entry to undergraduate degree course. Pearson BTEC Higher Nationals are intended to keep doors open for future study if a student wishes to take their education further after completing a Higher National programme. The Level 5 Higher National Diploma is recognised by many universities as a qualification for entry to their undergraduate degree in computing-related courses, for example:

BSc (Hons) in Computer Science

BSc (Hons) in Applied Computing

BSc (Hons) in Business and Computing

UNIT DETAILS



Programming

This unit introduces students to the core concepts of programming with an introduction to algorithms and the characteristics of programming paradigms. Among the topics included in this unit are: introduction to algorithms, procedural, object-orientated & event-driven programming, security considerations, the integrated development environment and the debugging process.

LEARNING OUTCOMES

- Define basic algorithms to carry out an operation and outline the process of programming an application.
- Explain the characteristics of procedural, objectorientated and event-driven programming.
- Implement basic algorithms in code using an IDE.
- Determine the debugging process and explain the importance of a coding standard.



Networking

The aim of this unit is to provide students with wider background knowledge of computer networking essentials, how they operate, protocols, standards, security considerations and the prototypes associated with a range of networking technologies.

LEARNING OUTCOMES

- Examine networking principles & their protocols.
- Explain networking devices & operations.
- Design efficient networked systems.
- o4 Implement and diagnose networked systems.



Professional Practice

This unit provides a foundation for good practice in a variety of contexts. The ability to communicate effectively using different tools and mediums will ensure that practical, research, design, reporting and presentation tasks are undertaken professionally and in accordance with various communication conventions. In everyday life the ability to apply critical reasoning and solve problems are necessary skills to enable task resolution and facilitate effective decision-making. Working with others in a group environment academically or within the workplace is an integral part of everyday life.

LEARNING OUTCOMES

- Demonstrate a range of interpersonal and transferable communication skills to a target audience
- Apply critical reasoning and thinking to a range of problem-solving scenarios.
- Discuss the importance and dynamics of working within a team and the impact of team working in different environments.
- Examine the need for Continuing Professional Development (CPD) and its role within the workplace and for higher level learning.

Database Design & Development

The aim of this unit is to give students opportunities to develop an understanding of the concepts and issues relating to database design and development, as well as to provide the practical skills to translate that understanding into the design and creation of complex databases.

LEARNING OUTCOMFS

By the end of this unit students will be able to:

- Use an appropriate design tool to design a relational database system for a substantial problem.
- Develop a fully functional relational database system, based on an existing system design.
- Test the system against user and system requirements.
- Produce technical & user documentation.

Security

The aim of this unit is to give students knowledge of security, the associated risks and how it has an impact on business continuity. Students will examine security measures involving access authorisation and regulation of use. They will implement contingency plans and devise security policies and procedures. The unit also introduces students to detection of threats and vulnerabilities in physical and IT security, and how to manage risks relating to organisational security.

LEARNING OUTCOMFS

- Assess risks to IT security.
- Describe IT security solutions.
- Review mechanisms to control organisational IT security.
- Manage organisational security.

Planning a Computing Project

This unit aims to allow students to demonstrate the research skills required for developing a deeper understanding of a subject and the ability to use evidence to inform decisions. Students will undertake independent research, and investigation of a theme set by Pearson. They will investigate and research an industry sector as outlined in the centre-set project brief. Additionally, they will use the outcomes of their research to plan a computer-based project and to support recommendations for how the identified business could use the tools and technologies identified as part of their research.



LEARNING OUTCOMES

- Conduct small-scale research, information gathering and data collection to generate knowledge on an identified subject.
- Explore the features and business requirements of organisations in an identified sector
- Produce project plans based on research of the chosen theme for an identified organization.
- Present your project recommendations and justifications of decisions made, based on research of the identified theme and sector.

Software Development Lifecycles

The unit introduces students to lifecycle decision making at different stages of the software development process. They will examine various lifecycle models and learn to appreciate their particular characteristics in order to understand for which project environments they are most appropriate. Theoretical understanding will be translated into practical skills through an actual software development lifecycle project. Students will become confident in the use of particular tools and techniques relevant to a chosen methodology.



LEARNING OUTCOMES

- Describe different software development lifecycles.
- Explain the importance of a feasibility study.
- ⁰³ Undertake a software development lifecycle.
- Discuss the suitability of software behavioural design techniques.



Internet of Things

This unit introduces students to the role, basic concepts and benefits of IoT in the design and development process of computer applications. The unit aims to enhance understanding of the methodology, terminology and benefits of IoT in the design and development of software applications. Among the topics included in this unit are: the classification and terminology of IoT, the hardware, software, data, platforms and services used to enable IoT, common architecture, frameworks, tools, hardware and APIs that can be utilised to design IoT-enabled objects, problems and solutions resulting from widespread deployment and adoption of IoT, software application methodology for IoT-specific software application design and development, data models, network complexity, security, privacy, enabling technologies and how to simulate and test an IoT concept.

LEARNING OUTCOMES

- Analyse what aspects of IoT are necessary and appropriate when designing software applications.
- Outline a plan for an appropriate IoT application, using common architecture, frameworks, tools, hardware and APIs.
- Develop an IoT application using any combination of hardware, software, data, platforms and services.
- Evaluate your IoT application and the problems it might encounter when integrating into the wider IoT ecosystem.



Business Process Support

This unit introduces students to a range of tools, techniques and technologies used for acquiring data and processing it into meaningful information that can be used to support business functions and processes. Students will examine how data and information support business processes, and the mechanisms to source and utilise data and turn it into usable, and valuable, information output. Students will explore real-world business problems, the emergence of data science and how the application of data science can be used to support business processes. Finally, students will demonstrate the practical application of data science techniques to support real-world business problems.

LEARNING OUTCOMFS

- Discuss the use of data and information to support business processes and the value they have for an identified organization.
- Discuss the implications of the use of data and information to support business processes in a real-world scenario.
- Explore the tools and technologies associated with data science and how it supports business processes.
- Demonstrate the use of data science techniques to make recommendations to support real-world business problems.

Operating Systems

This unit introduces students to different operating systems such as DOS, Windows, UNIX and Linux. The topics covered are the tasks of operating systems such as controlling and allocating memory, prioritising system requests, controlling input and output devices, facilitating data networking and managing files, including security and protection. Among the topics included in this unit are: the history and evolution of operating systems; the definition of an operating system; why operating systems are needed; how operating systems started and developed; operating systems management roles; management of memory, processes, processors, devices and files; security and protection: user security, device, application and process protection; inter-process communication; comparison of operating systems; distributed and networked systems; concurrent systems; multi-user systems; graphical interface systems; and practical application of operating systems: user interface commands of major operating systems; installations and extensions of operating systems.

LEARNING **OUTCOMFS**

By the end of this unit students will be able to:

- Investigate different operating systems, their functions and user interfaces
- Explore the processes managed by an operating system.
- Demonstrate the use of DOS, Windows, UNIX and Linux.
- Analyse appropriate techniques and technologies used in distributed and concurrent systems.

E-commerce and Strategy

This unit gives students an understanding of how and why businesses and organisations develop E-Commerce strategies to remain competitive in the global market. Students will gain an appreciation of the elements and resources required to set up an E-Commerce site. They will engage in the design and implementation of strategies that would, in reality, form part of a secure F-Commerce site.

LEARNING OUTCOMFS

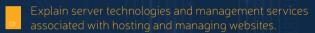
- Examine E-Commerce strategies and their impact on business organisations.
- Review the hardware, software, web-based and database technologies involved in setting up a secure E-commerce site.
- Design an E-Commerce strategy based on a given end-user requirement or specification.
- Implement an E-Commerce strategy based on a given end-user requirement or specification.

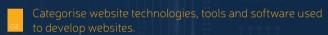
Website Design & Development

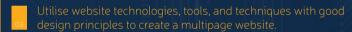
This unit introduces students to the underpinning services required to host, manage and access a secure website before introducing and exploring the methods used by designers and developers to blend back-end technologies (server-side) with front-end technologies (client-side). To help ensure new designers are able to design and deliver a site that offers an outstanding User Experience (UX) supported by an innovative User Interface (UI) this unit also discusses the reasons, requirements, relationships, capabilities and features of the systems they will be using and gives them an opportunity to explore various tools, techniques and technologies with 'good design' principles to plan, design and review a multipage website.

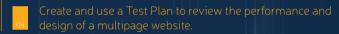
LEARNING OUTCOMES

By the end of this unit students will be able to:









Cloud Computing

This unit is designed to develop an understanding of the fundamental concept of Cloud Computing, cloud segments, cloud deployment models, and the need for Cloud Computing. Students will gain appreciation of issues associated with managing cloud service architecture and to develop a critical awareness of Cloud Computing based projects. Topics included in the unit are the paradigms of networking, fundamentals of cloud computing, cloud computing architecture, deployment models, service models, security, technological drivers and cloud service providers.

LEARNING OUTCOMES

By the end of this unit students will be able to:

Demonstrate an understanding of the fundamentals of Cloud Computing and its architectures.

Evaluate the deployment models, service models and technologica drivers of Cloud Computing and validate their use.

Develop Cloud Computing solutions using service provider's frameworks and open source tools.

Analyse the technical challenges for cloud applications and assess their risks.

Emerging Technologies

This unit introduces students to the role, benefits, disadvantages and potential outcomes that Emerging Technologies have in the development of software applications and business practices. The aim of the unit is to enhance the student's understanding of the current types, terminology, advantages, disadvantages, potential impact and benefits of Emerging Technologies.

LEARNING OUTCOMES

By the end of this unit students will be able to:

- Review which emerging technologies are necessary and appropriate when designing software applications for the future.
- Research an emerging technology and its impact on a given end-user group.
- Develop multiple iterations of an emerging technology solution based on requirements.
- Consider the ethical, social, economic and legal factors that play a role in the success of emerging technologies.

Computing Research Project

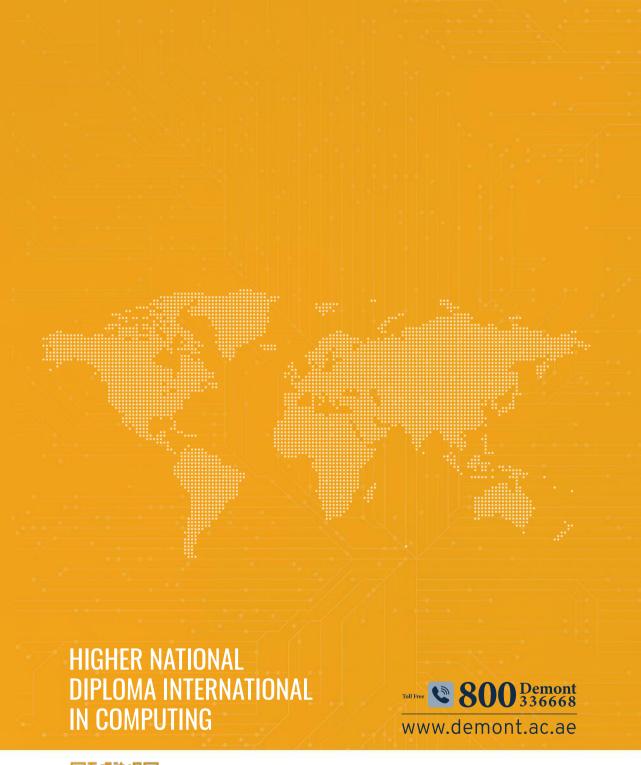
The aim of this unit is to give students the opportunity to engage in sustained research in a specific field of study. Students will be able to demonstrate the capacity and ability to identify a research theme, to develop research aims, objectives and outcomes, and to present the outcomes of such research in both written and verbal formats. Students are encouraged to reflect on their engagement in the research process, during which recommendations for personal development are key learning points.

LEARNING OUTCOMES

- Examine appropriate research methodologies and approaches as part of the research process.
- Conduct and analyse research relevant to a computing research project.
- Communicate the outcomes of a research project to
- Reflect on the application of research methodologies and concepts.



HND in Computing | 23





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