Programme Specification
HNC/D in Cloud Computing

Date of Publication to Students: September 20/21 onward

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 details on the specific learning outcomes, indicative content and the teaching, learning and assessment methods of each module can be found in the Module Specifications and in the Course Handbook.
The accuracy of the information contained in this document is reviewed by the College and may be checked within independent review processes undertaken by the Quality Assurance Agency.

Awarding Body: Pearson / Edexcel
Teaching Institution: Birmingham Metropolitan College (Sutton Coldfield College)
Final Award: HNC in Cloud Computing (120 credits at Level 4), HND in Cloud Computing (120 credits at Level 5)
Fall back Award: NA
Title: HNC/HND Cloud Computing
Main fields of Study: Computer Science
Modes of Study: Blended Learning
Language of Study: English
UCAS Code: TBC
JACS Code: NA
HECOS Code: TBC

Programme philosophy and aims

The course will give BMet students the latest knowledge and experience within the IT sector and growing industry reliance on Cloud technologies. Giving them the advantage into the world of work, by gaining a specialised qualification, as well as AWS certification, making them highly desirable as applicants in the job market. The course will give a comprehensive overview and thorough grounding in the main areas of modern computing, providing students with the real and practical skills needed in today's competitive environment. It develops an appreciation of the need to implement a structured approach to programme design, and the necessary skills. The course will also provide students with a sound foundation in programming, with a focus on object-oriented programming. It also provides a framework for sound technical and professional practices and an opportunity to develop both independent and co-operative work.

The aims of the programme are to:

To equip students with cloud computing skills, knowledge and the understanding necessary to be job ready in the cloud computing field.
To provide education and training for a range of careers in cloud computing, with specific emphasis on roles in cloud infrastructure, networking and cloud software development.
To provide opportunities for students to enter or progress in employment in cloud computing roles or to progress to higher education qualifications, such as an Honours degree in cloud computing or a related area and also to provide insight and understanding into international cloud computing operations and the opportunities and challenges presented by a globalised marketplace
The qualifications aim to widen access to higher education and enhance the career prospects of those who undertake them.

Intended learning outcomes and the means by which they are achieved and demonstrated:

At Level 4, students develop a broad knowledge and awareness of key aspects of the cloud sector through eight units, including a unit assessed through a Pearson-set assignment. The 8 units are:

Unit 1: Cloud Fundamentals
Unit 2: Networking in the Cloud
Unit 3: Security in the Cloud
Unit 4: Programming
Unit 5: Database Design and Development in the Cloud
Unit 6: Deploying and Operating in the Cloud (Pearson Set).
Unit 7: Website Design and Development in the Cloud
Unit 10: Computer Systems Architecture

At Level 5, students will expand their knowledge and awareness of key aspects of the cloud sector through seven, including a unit assessed through a Pearson-set assignment. The 7 units are:

12: Cloud Computing Research Project (Pearson Set)
13: Cloud Architecture Design
14: Operating Systems in the Cloud
15: Cloud Systems Integration
16: Information Security Management in the Cloud
21: Applied Programming and Design Principles
24: Data Structures & Algorithms
These units along with the delivery and use of Amazon Web Services(AWS) will allow students to attain local and cloud-based computing knowledge.

Transferable Skills:

- Active research skills
- Effective writing skills
- Analytical skills
- Critical thinking
- Creative problem-solving
- Decision making
- Team building
- Programming
- Networking
- Web design
- Aws/cloud technologies

Learning, teaching and assessment strategies and methods used:
Teaching methods:

The following teaching methods will be used:

- Holistic approach to and overall scenario/project in which the students will be planning and deploying into the cloud using AWS.
- Classroom-based learning supervised by a tutor
- Work-based learning supervised by a tutor
- E-learning supervised by a tutor in real time
- Independent and unsupervised research/learning
- Unsupervised e-learning
- Guided Learning

Summative Assessment Methods via Pearson or tutor set assignments and projects, this will be involved research and practical based tasks. Set within a world of work industry-based role/scenario to deliver a prototype/project demonstrating the contents of the unit in question.

Formative Assessment Methods via tutorials, classroom-based learning, remote based learning. Including, weekly tasks set to learn and demonstrate new programming or AWS based knowledge learnt. Consistent student feedback on their progression through each unit, focusing on their strengths and weaknesses within the unit to ensure they develop further.

Course structure and requirements, levels, modules, credits and awards:

With the 8 units that we deliver in HNC, we are looking at doing an overall project, in which a scenario is spanned across multiple units. Having the students plan of the cloud deployment and an introduction of the cloud in unit 1, to creating and deploying a website with a backend database in units 7 and 5 along with networking and security in the cloud with units 2 and 3.

With the 7 units delivered in HND, we are looking at doing an overall project, in which a scenario is spanned across multiple units, similar approach to HNC. Having the students plan to develop the cloud computing architecture and deploy an operating system and develop a cloud-based application based on given scenario.

Course Modules, Level and Credit Values
Level 4 Units

Pearson BTEC Level 4 Higher national Certificate in Cloud Computing	Unit Credits	Level
Unit 1: Cloud Fundamentals	15	4
Unit 2: Networking in the Cloud	15	4
Unit 3: Security in the Cloud	15	4
Unit 4: Programming	15	4
Unit 5: Database Design and Development in the Cloud	15	4
Unit 6: Deploying and Operating in the Cloud (Pearson Set).	15	4
Unit 7: Website Design and Development in the Cloud	15	4
Unit 10: Computer Systems Architecture	15	4

Level 5 Units

Pearson BTEC Level 5 Higher national Diploma in Cloud Computing	Unit Credits	Level
12: Cloud Computing Research Project (Pearson Set)	30	5
13: Cloud Architecture Design	15	5
14: Operating Systems in the Cloud	15	5
15: Cloud Systems Integration	15	5
16: Information Security Management in the Cloud	15	5
21: Applied Programming and Design Principles	15	5
24: Data Structures & Algorithms	15	5

Support for Learning including Personal Development Planning (PDP) :

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

- An induction programme providing dissemination of essential information.
- A Learning and Resource Centre providing access to a variety of learning resources, with support from staff
- A Student Handbook containing important information including tutors, staff responsibilities, contacts and regulations and requirements of the course.
- Access to the College IT facilities
- Access to the College Student Services and Careers Advisor
- Access to a Student Counsellor
- Regular group personal development sessions
- A minimum of a one-to-one per term
- Consultation with tutor by email, telephone, VLE and other electronic sources

Students will produce their own Personal Development Plans and have periodic reviews with their Personal Tutor.

Criteria for admission

ACADEMIC REQUIREMENTS:

- UCAS Tariff Points: 32 points

The tariff points can be made up of:
A Levels (GCE and VCE): 1 A Level at Grade C
BTEC Extended Diploma: Grade PPP
BTEC Diploma: Grade PP
BTEC 90 Credit Diploma: Grade MP
Access to HE: Grade P45.
All level 3 qualifications should be in a computing, engineering, ICT, maths and science related subject.

- Minimum number of GCSEs at Grade C/4 or above:
2 which must include:
GCSE English: Grade C/4
GCSE Maths: Grade C/4

  Are Level 2 equivalents accepted? Yes, all students will be required to sit an English diagnostic assessment equivalent to Level 2. This is to establish if students require support and is used as a supportive tool only. Students whose first language is not English must have a minimum standard of English at IELTS Level 5.5 with no element below 5.0.

NON-ACADEMIC REQUIREMENTS:

We encourage applications from students who do not meet the entry requirements outlined but can demonstrate ability through work experience, professional qualifications from their work sector, portfolio of evidence or successful interview.
If you do not hold a Level 2 English and/or Maths qualification you may be required to undertake an initial assessment to ascertain your current literacy and/or numeracy levels and/or a free writing assessment.
Mature learners may present a more varied profile of achievement that is likely to include extensive work experience and/or achievement of a range of professional qualifications in their work sector.

Methods for evaluation and enhancement of quality and standards including listening and responding to views of students:

The quality of the programme will be closely monitored by all staff involved in its delivery. The Course Leader/ Departmental Manager is the local Manager who will oversee the delivery of the programme. The Vice Principal with responsibility for Higher Education and the Vice Principal for Curriculum and Quality monitor the overall effectiveness and quality through a robust College-wide quality control process. The programme will also adhere to the College's regulations and processes.
The College quality process applied to this programme includes:

- Regular teaching observations and reviews
- Staff skills updating as required
- Regular delivery team meetings
- Standardisation meetings and thorough internal verification process
- Course management meetings involving student representatives and course delivery team
- Seeking of student views during group tutorials, one to one tutorials and by formal College survey completion and national surveys.
- Termly Review Boards to review course performance on a regular basis.
- Production of programme Annual Monitoring Reports which detail the performance of the students and programme.
- End of module/programme Examination Boards, attended by an External Examiner where possible.
- A robust system for dealing with complaints or issues, should they arise.

Students will have regular opportunities to present their views to subject tutors during taught sessions, during tutorials and during one-to-one tutorials with teaching staff (by appointment). They will also be able to express their views to the Course Leader and express their views via the student Course Representative who will convey views to the course team, at termly Course Management Meetings.
The Course Management Meetings are attended by the course team and student representatives and where possible an employer. Minutes of the meeting are recorded, and an action log produced.
Students are given the opportunity to participate in both internal and external Higher Education Surveys.