

PROGRAMME SPECIFICATION

for the award of

MSc Digital and Technology Solutions Specialist (Integrated Degree)

Managed by the Faculty of Technology, Design and Environment

delivered by School of Engineering, Computing and Mathematics

Date approved:	May 2019
Applies to students commencing study in:	2020

RECORD OF UPDATES

Date amended*	Nature of amendment**	Reason for amendment**
22/05/2019	Creation of the programme	

Extend list as necessary.

*Date of meeting of Faculty AESC, validation panel, or other authorised body at which changes were formally approved.

**Give brief outline of what has been updated and why (e.g. section 4.2 updated due to changes in PSRB requirements).

SECTION 1: GENERAL INFORMATION

Awarding body:	Oxford Brookes University
Teaching institution and location:	Oxford Brookes University, Wheatley Campus
Language of study:	English
Final award/s:	MSc Integrated Degree Apprenticeship
Programme title:	Digital and Technology Solutions Specialist(MSc)
Interim exit awards and award titles available:	Postgraduate Diploma Postgraduate Certificate
Brookes course code:	
UCAS code:	
JACS code:	I100
HECoS code:	100366
Mode of delivery: (Mode of Study given in brackets)	On campus (part-time)
Duration of study:	2 years MSc programme + 3 months End Point Assessment
Subject benchmark statement/s which apply to the programme:	Master's degrees in computing (2011) https://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/sbs-masters-degree-computing.pdf
Professional accreditation attached to the programme:	
Apprenticeship Standard:	Digital and Technology Solutions Integrated Degree Apprenticeship (ST0482) https://www.instituteforapprenticeships.org/apprenticeship-standards/digital-and-technology-solutions-specialist-integrated-degree/
University Regulations:	The programme conforms to the University Regulations for the year of entry as published/archived at: http://www.brookes.ac.uk/regulations/

SECTION 2: WHY STUDY THIS PROGRAMME?

The degree apprenticeship offers employers the opportunity to support their talented employees that already have a technical degree in a non-computing subject. The degree is mapped against the Software Engineering Specialist and will enable the apprentice to develop a sound knowledge of computer software development and become confident at investigating, designing, implementing, maintaining and evaluating complex software systems. The Digital and Technology Solutions integrated degree apprenticeship enables software development training based on real world applications.

This MSc apprenticeship programme is designed with the needs of the employers and apprentices in mind. The programme complements the daily work of the apprentices offering training and the possibility of converting their daily duties to practical work for their course. The blended learning offers flexibility and permits the apprentice to combine work with postgraduate studies.

Apprentices completing this MSc will have learned to professional design and develop software products. The final project and the end point assessment will provide an opportunity to put into practice and demonstrate the range of technical and professional skills and knowledge that have been acquired.

Please refer to the following link to view the staff profiles within the School of Engineering, Computing and Mathematics:

<https://www.brookes.ac.uk/ecm/about/staff/>

SECTION 3: PROGRAMME LEARNING OUTCOMES

On successful completion of the programme, graduates will demonstrate the following Brookes Attributes:

3.1 ACADEMIC LITERACY

A01	Create new complex software solutions by applying the key concepts and methodologies derived from an understanding of the fundamental principles of computing.
A02	Analyse and apply the processes and techniques necessary for the management and production of software products taking into consideration customer requirements, quality assurance, security, risk assessment and development schedules and costs.
A03	Critically evaluate the properties of computer systems to create efficient and secure solutions for given real world problems.
A04	Critically appraise emerging technologies and techniques and identify and assess the potential benefits for future systems.

3.2 RESEARCH LITERACY

R01	Demonstrate self-direction, leadership and originality in planning and managing a professional project, synthesising relevant research based materials in the organisation and planning of the professional work
R05	Demonstrate a systematic understanding of knowledge of current problems and/or new insights, much of which is at, or is informed by, the forefront of digital technologies or relevant area of professional practice

3.3 CRITICAL SELF-AWARENESS AND PERSONAL LITERACY

C01	Evaluate and reflect on the evolution of their strengths and weaknesses across the range of subject based competences involved in the domain.
C02	Participate in and direct group activities and recognise and evaluate the importance of

	teamwork, time management, initiative, personal responsibility and accountability in delivering successful solutions
C03	Create solutions to problems, acting autonomously and making decisions in challenging situations in planning and implementing tasks and delivering on a given time scale

3.4 DIGITAL AND INFORMATION LITERACY

D01	Identify digital information sources and from which, acquire information for further analysis
D02	Demonstrate effective skills and practices necessary to become a confident, agile adopter of a range of technologies for personal, academic and professional use.
D03	Create a solution to a complex problem using existing appropriate software tools.

3.5 ACTIVE CITIZENSHIP

G01	Identify and analyse risk, reliability, legal, social, environmental, professional and ethical issues relevant to research and problem solving in the domain
G02	Evaluate the impact of the development, use and maintenance of computer and communication systems in economic, political, cultural and social contexts in both national and international settings

SECTION 4: CURRICULUM CONTENT & STRUCTURE

4.1 PROGRAMME STRUCTURE AND REQUIREMENTS:

Code	Module Title	Credits	Level	Status	Coursework: Exam ratio
PDTS01	Object Oriented Software Development	20	7	Compulsory	100% coursework
PDTS02	Data Science	20	7	Compulsory	100% Coursework
PDTS03	Software Engineering	20	7	Compulsory	100% Coursework
PDTS04	Professional Development and Research Methods	20	7	Compulsory	100% Coursework
PDTS05	Secure Computer Systems	20	7	Compulsory	100% coursework
PDTS06	Big Data and The cloud	20	7	Compulsory	100% coursework
PDTS07	Professional Project	60	7	Compulsory	100% Coursework

Code	End Point Assessment - title and description	Integrated	Non integrated
DTSEPA	Digital & Technology Solutions Specialist Assessment of Professional Competence	Y	N

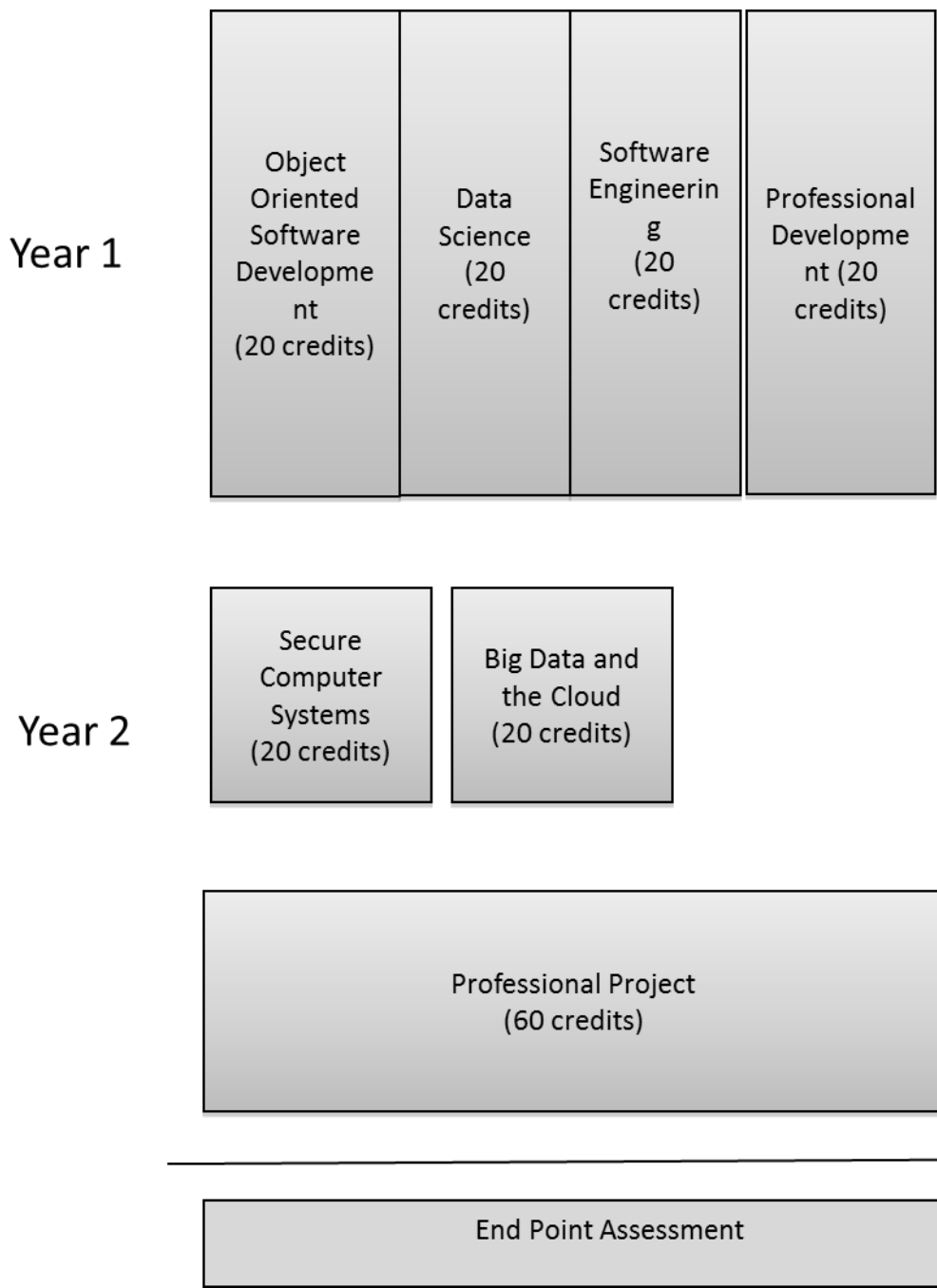


Figure 1: Academic Programme

4.2 PROGRESSION AND AWARD REQUIREMENTS

The Digital and Technology Solutions Specialist MSc academic programme has a normal duration of two academic years. To receive one of the postgraduate degree (PGCert, PGDip, or Master) the student shall have completed the specific module requirements within a maximum of five years of study after the initial registration date.

Progression Requirements

The apprentice is expected to follow the academic programme shown in Figure 1. However apprentice may require extending the completion date if modules are not passed in their corresponding year as follows:

- If the apprentice fails to pass all the four modules in year 1, the module (s) may be retaken in year 2 but the project will not start until May once all the taught module have been completed.
- If the apprentice fails a module in year 2, the project may start in January of that year but the module will need to be retaken in the following year and therefore the completion date will be extended to December of year 3.

- In the event that the apprentice fails the project, they will need to extend the completion date for one year.

MSc Integrated Degree Apprenticeship

To qualify for a degree apprenticeship, the apprentice must have successfully completed the MSc academic programme and the EPA (Pass, Merit, and Distinction)

Award of Postgraduate Diploma (PGDip)

To qualify for a postgraduate diploma, the student must complete a minimum of 120 credits.

Award of Postgraduate Certificate

To qualify for a postgraduate certificate, the student must complete a minimum of 60 credits.

4.3 PROFESSIONAL REQUIREMENTS

N/A

SECTION 5: TEACHING AND ASSESSMENT

Apprentices will complete the MSc degree in two years. Apprentices will attend lectures every fortnight during the academic year and will complete the remainder of their study and assessment through online learning. Following the completion of the academic programme, the apprentice will be supported by the University and the employer to prepare and complete the EPA.

In their first year of their studies the apprentice will attend lectures one full day every fortnight during the two academic semesters to acquire the knowledge and understanding of the key theoretical concepts in computing. During the second year the apprentice will attend lectures the first semester every fortnight to complete all the academic modules with on campus presence. During the last six months of the academic programme the apprentice will be working on the professional project. All the modules will have on campus presence with the exception of Professional Development that will be delivered online with on campus workshops and tutorials.

Practical elements of the course will enable students to practice essential skills in a variety of contexts, and build a wide set of experiences on which to reflect and develop professional expertise. For more technical skills, including programming, the practical elements will be based around laboratory classes on campus and online exercises.

Apprentices working on their project will arrange periodically supervision sessions with their academic and company supervisors. It is expected that each student will contact their supervisors at least once every 2 weeks during the project period.

The apprentice progress is assessed in partnership with the employer. Apprentice will complete a portfolio detailing their professional development and reflecting about their progression in preparation for the EPA.

Two modules will include an element of team working (Professional Development and Secure Computer Systems), enabling apprentices to collaborate with their peers, and developing an awareness of their own abilities as reflected by feedback from others. Teamwork will also be used to assess the students' acquisition of personal and inter-personal skills, so important for this degree, and equally important for most career paths in the industry.

Academic literacy will be assessed through coursework, testing the students' ability to explain key concepts, and to apply them to practical problem solving.

Research literacy is assessed in Professional Development module and the project, but apprentices will have learned and practised these skills in a number of other modules and at work place.

Self-awareness and personal literacy will be supported through the on-going use of the portfolio and reflection as an assessed part of coursework. This culminates with the EPA where the apprentice must defend their portfolio in a professional discussion and write a project report.

Digital and information literacy is fundamental to the academic content of this degree, and will be a distinguishing feature of graduates from the programme. In particular, the use of software tools for system development will be taught and assessed throughout many of the modules, and part of the assessment for these modules will be based on the apprentice's ability to locate, read, and evaluate appropriate documentation for software tools, as well as their ability to document their own software and system artefacts.

Active Citizenship includes legal, social, ethical, sustainability and risk (LSESR) issues are addressed within the professional development module and developed and assessed across the programme culminating in the project. The strategy is to include a distinct element in appropriate coursework to allow a critically reflect on these issues in the context of the practical scenario at work place.

By paying due regard to the Oxford Brookes University Assessment Compact, the assessments on this programme have been designed to develop learning of technical skills, shaped by the underlying theory, and requirements of the industry. Assessment does not present students with a set of hurdles, but rather guides them through the staged acquisition of a complex set of professional skills. Feedback on the assessment tasks will be provided in a timely manner, emphasizing achievement of the learning outcomes of the modules and the programme. Apprentices will be encouraged to relate the assessment tasks with professional activities, and to relate their achievements with professional standards.

SECTION 6: ADMISSION TO THE PROGRAMME

6.1 ENTRY REQUIREMENTS

Apprentices must be employed in a suitable job role (see Section 6.3) and meet the academic entry criteria. Apprentices are offered places on the programme after a successful interview with the programme staff.

All candidates for admission to the MSc must meet the requirements below in terms of previous education and ability to work at postgraduate level in the English language and mathematic skills.

- Undergraduate degree 2:1 or higher preferable in a science or engineering degree. Applicants with industrial experience in part of the domain, but with a non-STEM qualifications may also be considered.
- GCSE or an equivalent level 2 qualification in English and Mathematics
- If the first language is not English evidence is required of a minimum of IELTS score of 6.0 or an equivalent English language qualifications acceptable to the University.

6.2 DBS AND OTHER PRE-COURSE CHECKS REQUIRED

N/A

6.3 JOB ROLE/EMPLOYER PROFILE (DEGREE AND HIGHER APPRENTICESHIPS)

The apprentice should be employed in a setting that requires the access and use of complex software systems. Over the course of their employment, the apprentice should have work-based opportunities to allow them to complete the apprenticeship

As part of his employment the software engineering apprenticeship will have the opportunity to:

- Use, run and test commercial software systems
- Develop and use databases
- Analyse and investigate the suitability of different software systems
- Design develop and update software systems

SECTION 7: PREPARATION FOR EMPLOYMENT

Graduates from the programme will be ideally equipped for a career in the computing industry. Graduates are employed across a whole range of careers from development roles in small software houses, to the activities of IT departments in large, multinational corporations, to more specialist roles for providers of IT and telecommunications services. These include technical roles, including software design and development, specialist product support, and infrastructure and security management roles. According to the Institute for apprenticeships, Software Engineering specialists are commonly employed in roles such as: software engineer, solution developer, analyst programmer, and senior software developer.