Programme specification

(Notes on how to complete this template are provide in Annexe 3)

1. Overview/ factual information

Programme/award title(s)	FD in Data Analytics and Visualisation
Teaching Institution	Ada, National College for Digital Skills
Awarding Institution	The Open University (OU)
Date of first OU validation	January 2019
Date of latest OU (re)validation	n/a
Next revalidation	June 2023
Credit points for the award	240
UCAS Code	N/A
HECoS Code	N/A
LDCS Code (FE Colleges)	Not used
Programme start date and cycle of starts if appropriate.	October 2023
Underpinning QAA subject benchmark(s)	QAA Characteristics Statement Foundation Degree 2020 https://www.qaa.ac.uk/docs/qaa/quality-code/foundation-degree-characteristics-statement-2020.pdf?sfvrsn=6fc5ca81_10
Other external and internal reference points used to inform programme outcomes. For apprenticeships, the standard or framework against which it will be delivered.	IfA&TE* Level 4 Apprenticeship Standards for Data Analyst https://www.instituteforapprenticeships.org/apprenticeship-standards/data-analyst-v1-0 *Institute for Apprenticeships & Technical Education
Professional/statutory recognition	ESFA (Education & Skills Funding Agency)
For apprenticeships fully or partially integrated Assessment.	n/a
Mode(s) of Study (PT, FT, DL, Mix of DL & Face-to-Face) Apprenticeship	Mix of Face to Face* & Work Integrated (on-the-job) Learning (FT Apprenticeship)

Duration of the programme for each mode of study	Two Years
Dual accreditation (if applicable)	n/a
Date of production/revision of this specification	May 2023

Please note: This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if s/he takes full advantage of the learning opportunities that are provided.

More detailed information on the learning outcomes, content, and teaching, learning and assessment methods of each module can be found in student module guide(s) and the students handbook.

The accuracy of the information contained in this document is reviewed by the University and may be verified by the Quality Assurance Agency for Higher Education.

2.1 Educational aims and objectives

The general educational objectives of the programme are to:

- Provide knowledge and understanding in the theory, practice of statistics as well as the use of statistical software and programming skills to enable students to start a career in data analytics.
- Foster knowledge and understanding of a modern range of data visualisation and analytics topics, techniques and skills, enriched by the expertise of a broad staff base and industrial links.
- Provide an awareness of the power, breadth, range of applications and limitations of data visualisation and analytics concepts.
- Develop students' abilities to apply independent critical thinking, communication skills and self-management skills to identify problems in their organisations and formulate and implement effective solutions.

- Equip students with the ability to apply methods of statistics that are fundamental to Data Analytics.
- Provide a basis for progression in career and educational development through additional study for a BSc (Hons.) Degree.
- Prepare students with professional attitudes with awareness of ethical, legal, and social issues, interpersonal and entrepreneurial skills required in industry.

2.2 Relationship to other programmes and awards

(Where the award is part of a hierarchy of awards/programmes, this section describes the articulation between them, opportunities for progression upon completion of the programme, and arrangements for bridging modules or induction)

The degree offers students progression from Level 4 through to Level 5 and incorporates the CertHE exit award, and culminates in the Foundation Degree.

Upon the successful completion of the Foundation Degree, students will have the opportunity to top-up for the BSc(Hons.) Degree in Digital and Technology Solutions.

2.3 For Foundation Degrees, please list where the 60 credit work-related learning takes place. For apprenticeships an articulation of how the work based learning and academic content are organised with the award.

Authentic and innovative work-based learning is an integral part of foundation degrees and their design. It enables learners to take on appropriate role(s) within the workplace, giving them the opportunity to learn and apply the skills and knowledge they have acquired as an integrated element of the programme. It involves the development of higher-level learning within both the higher education provider and the workplace. It is a two-way process, where the learning in one environment is applied in the other. Work-based Learning and engagement with employers have been embraced accordingly in this programme through a number of modules but principally in the Level 5 Work- based Project module.

Work-based Project (WBP)

The work-based project (WBP) is a part of the Foundation degree which contributes to the final mark (i.e. classification) of the degree. The details of the assessment are contained in the respective module descriptor as well as the student handbook. The WBP is a substantial piece of work to be undertaken at level 5, during the second year of the degree.

The project must bring together elements of learning from different parts of the programme and show evidence of accumulated knowledge and understanding of management, and the application of these within their organisation. The project must meet the Standard and demonstrate the approach taken to the planning and completion of the project.

Because of the significance of the project, the employer and college must work together with the apprentice to agree a project that is achievable within the employer's business constraints whilst meeting the needs of the Standard. The project should be conducted as part of the apprentice's normal work. The employer should make allowances, in terms of time and resource, for the project to be undertaken. Any elements which need to be undertaken outside of normal work should be agreed between the employer, apprentice and Provider so that apprentices are not disadvantaged in any way from performing their job and meeting the requirements of the project. Arrangements are agreed at a company level and are formalised in the Training Plan at the outset of the apprenticeship. Apprentices sign this document at the beginning of the course and the arrangements are repeatedly communicated to the apprentices through their quarterly reviews well in advance of the project.

The process begins with the apprentice submitting a proposal. Apprentices are strongly advised to consult with their line managers when preparing the proposal, to discuss /consider issues such as ethics, IP, data protection, confidentiality, etc.

The proposal requires approvals of both the college (academic standards) and the employer (workplace standards). This will be finalised through discussion between Ada, the employer and the student. (In some cases, the proposal is returned to the apprentice for minor/major changes based on the College/Employer feedback). Upon the approval of the proposal, apprentices will settle on their project, in conjunction with the employer and the academic team.

The requirements for the delivery of the work-based project are shown below:

Design

- A specification should be developed to show what must be delivered on completion of the project - this must include the outputs, project plans etc.

- Terms of reference must be developed by the apprentice and agreed by the college and employer early in the project, not later than week 7. This is ten weeks before the completion of the programme.

- The college must provide clear project assessment criteria including those for the terms of reference, approach to the problem, solution design and implementation, the final report and presentation.

- Apprentices must document their assumptions and highlight the consequences of these assumptions – enabling them to demonstrate their understanding of

commercial pressures and the application of their thinking and problem-solving skills.

- Agreement must be made between the apprentice, employer and college on what systems, tools and platforms will be required (if any) to complete the tasks and how these will be made available.

Delivery

- The College will work with the employer and apprentice to agree the project title and support arrangements required to enable the project to be undertaken.
- The project should normally be based on an agreed business problem that forms part of the apprentice's role.
- Suitable time should be set aside by the employer for the apprentice to plan, undertake and write up their project.
- The apprentice must first work out what is required and present terms of reference and an initial plan for agreement with the employer and Provider.
- The project should typically be undertaken at the employer's premises.
- The employer and the College must ensure that the apprentice has access to the tools and systems required to complete the tasks within the project.
- The apprentice must provide a signed statement to confirm the project is their own individual original work with no collaboration with any third-party.
- The project will be set and completed during the second year of the degree. The start of the project will be after the completion of the three taught modules, after week seven.

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Project Environment

- A suitable project environment should be provided ensuring access to all required tools and systems. This will be the apprentices' normal place of work.
- Someone responsible for managing the project from the employer perspective must be identified
- The Technical Skills Coach (TSC) from the College must oversee and provide support to the apprentice.

- The work-based project will contribute towards the achievement of the degree.

Threshold Requirements

Ada will take responsibility for the quality of the learning opportunities delivered via work-based project and will ensure individual and collective responsibilities of students, TSC and workplace mentors are clearly defined. The following provides an indicative list of what all parties required to do in work-based activities:

Students are required to:

- Engage fully during planned work-based project in order to achieve the stipulated learning outcomes.
- Inform the TSC of any issue that might prevent progress in, or satisfactory completion of the learning outcomes.
- Conform to the regulations and policies of the workplace organisation and expected standards of ethical behaviour.
- Maintain the confidentiality of any sensitive information concerning the organisation and its business.
- Submit the report within the specified deadline.
- Undertake any assessments which may be required to meet the programme learning outcomes.

The Technical Skills Coaches are required to:

- Meet with the students on a quarterly basis for assessment and provision of support.
- Oversee the assessment of students during the programme.
- Provide guidance and support on request and act as the initial college contact for students experiencing difficulties during work-based learning.
- Respond to student queries/concerns related to their work-based learning experience and assessment process.
- Provide feedback to link areas on student evaluations of their experience.
- Where applicable, invite the employer's mentor to attend training activities at the College to ensure the employers can manage the assessment of students in line with Ada College policies and procedures.

2.4 List of all exit awards
Level 4 :Cert HE Data analytics and Visualisation

3. Programme structure and learning outcomes

(The structure for any part-time delivery should be presented separately in this section.)

Programme Structure - LEVEL 4

Compulsory modules	Credit points	Optional modules	Credit points	Is the module compensatable?	Semester runs in
Data Analysis Concepts and Project Management (DAC & PM) Programming for Data Analysis Database Systems Cloud Computing Statistics for Data Analysis	30 30 30 15 15	None		No	Please see below table

Mode of Study		When	How long (No. days)	What (Module)
Ada Attendance	Launchpad	Weeks 1	5	DAC & PM (Part I)
		Weeks 2, 3, and 4	15	Programming for Data Analysis
		Week 5	5	DAC & PM (Part II)
Six weeks of Work placement		0.5 a day a week *	3	Self-Study
Ada Attendance		Week 6	5	Database Systems
Six weeks of Work placement		0.5 a day a week *	3	Self-Study
Ada Attendance		Week 7	5	Database Systems
Six weeks of Work placement		0.5 a day a week *	3	Self-Study
Ada Attendance		Week 8	5	Cloud Computing

Six weeks of Work placement	0.5 a day a week *	3	Self-Study
Ada Attendance	Week 9	5	Statistics for Data Analysis
Six weeks of Work placement	0.5 a day a week *	3	Self-Study
Ada Attendance	Week 10	5	Reflective Statements of work-based learning
Six weeks of Work placement	0.5 a day a week *	3	Self-Study
	Total	68	

* Learners have pre-work and assignments to complete during their time at work which equates to 0.5 days a week.

Intended learning outcomes at Level 4

On successful completion of Level 4, the students should be able to:

Learning Outcomes – LEVEL 4	
3A. Knowledge and understanding	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
A1 Demonstrate knowledge of the underlying concepts and principles associated with collection, management and storage of data. **A2** Relate the understanding of basic algorithmic, statistical and mathematical techniques to the analysis of well-defined small-scale problems and the design of their solutions.	Knowledge and understanding are developed through a combination of methods, including: lectures, and self-directed study using resources and virtual learning environment (VLE). Learning will be applied to the organisational context and apprentices will be supported by a workplace mentor, in addition to regular formative feedback module tutors.

Learning Outcomes – LEVEL 4	
3A. Knowledge and understanding	
A3 Show awareness of the legal and ethical issues involved in data life cycle. **A4** Explain the fundamental concepts of the cloud infrastructure and demonstrate knowledge of security issues in cloud environments	The assessment strategy for each module is detailed in the module specification and indicates the nature of the assessment. Apprentices will receive additional information and support from assessment briefs given by tutors. All module outcomes are assessed. A range of appropriate assessment methods are utilised throughout, with a significant focus placed upon appropriateness to the sector within which the apprenticeship is located.

3B. Cognitive skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
B1 Identify and use an appropriate range of programming languages and algorithms and develop models for data manipulation, analysis, visualisation, and system integration. Develop reproducible analysis and robust code, working in accordance with software development standards. **B2** Describe, create and manipulate simple data collections to store organisational data and business rules, recognising limitations of their underlying representation.	Cognitive skills will also draw on a range of learning and teaching methods appropriate to the demands of the module. These include: Lectures, formative peer-to-peer and tutor feedback and reflective practice relating to the Project Management project. The intellectual and cognitive skills will be acquired through directed reading, supported by focused questioning and critical discussion, project and assignment work relating theory to practise. Tutorial support and formative assessment provide the opportunity for guidance in the development of these skills.

3B. Cognitive skills	
B3 Validate and report on the outcomes of mathematical and statistical analysis to ensure they are suitable for their intended use. **B4** Apply appropriate methods and techniques to model, store and query structured and unstructured data sources.	Skills will be assessed through written and oral evaluations of work. Learning will be applied to the organisational context and apprentices will be supported by a workplace mentor, in addition to regular review of work-based learning and assessment by their College tutor.

3C. Practical and professional skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
C1 Apply the concepts and techniques of abstraction, reification, logical structure and modelling that pervade Computer Science, Mathematics and Software Engineering to specify, design, implement and test data management and processing systems. **C2** Use project management techniques to identify organisational problems, gather requirements, identify solutions, apply scientific methods, deliver results and make decisions by seeking feedback from stakeholders. **C3** Use a range of established techniques to demonstrate how information is modelled, persistently stored, manipulated and retrieved, as data, to serve scalable solutions to medium-scale business problems.	Practical and professional skills will be developed through workshops, lectures, presentations, formative feedback during tutorials and work integrated projects. Apprentices will also study independently, including critical evaluation of current practice. The prescribed total hours for the self-study in-work application are set in the module specification as 80 and 120 hours, respectively Close links will be made to the workplace context of each apprentice, with input from workplace contacts supporting tripartite contextualization of specific tasks identified within individual modules. It is anticipated that apprentices off the job and work integrated learning will also play a significant role in the development of practical and professional skills. Assessment methods will be appropriate to the particular module but include tutor assessment of observed activities and written work. All

3C. Practical and professional skills	
C4 Implement data solutions using relevant software engineering architectures (on premise and cloud), project delivery techniques and collaborative relationships to achieve organisational goals.	practical work is linked to a method for evaluating the work and demonstrating understanding of the underlying theories.

3D. Key/transferable skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
D1 Be effective in professional and interpersonal communication of information, problems, models and solutions to both specialist and non-specialist audiences. **D2** Manage the time and resources and appreciate the role of teamwork within the IT discipline. **D3** Give and receive feedback constructively and incorporate it into their own development and life-long learning. **D4** Reflect systematically on their solution and their own performance to further develop learning.	Key/transferable skills will be developed throughout the modules as content is related to the real-world context of each apprentice. Apprentices are also encouraged to take ideas back into their work environment from the course and implement them through their practice. Key/transferable skills are developed in the core modules which extend and enhance previously developed written skills, time management, reading, communication across a range of contexts, information retrieval and research skills. Specific models of practice used within individual workplaces will also be integrated into the working methods considered. The teaching methods include: lectures, workshops, formative feedback on written work and presentations. Apprentices are able to access, on demand or through referral, additional learning support for communication skills with the academic skills support available.

3D. Key/transferable skills	

[Cert HE Digital Innovation]

Programme Structure - LEVEL 4				
Compulsory modules	**Credit points**	**Optional Modules**	**Is the module compensatable?**	**Semester runs in**
Advance Programming for Data Analysis	30	None	No	Please see below table
Data Visualisation	30			
Applied Artificial Intelligence	30			
Work-based Project	30			

Level 5			
Mode of Study	When	How long (No. days)	What (Module)
Ada Attendance	Weeks 1	5	Advance Programming for Data Analysis
Six weeks of Work placement	0.5 a day a week *	3	Self-Study
Ada Attendance	Week 2	5	Advance Programming for Data Analysis

Six weeks of Work placement	0.5 a day a week *	3	Self-Study
Ada Attendance	Week 3	5	Data Visualisation
Six weeks of Work placement	0.5 a day a week *	3	Self-Study
Ada Attendance	Week 4	5	Data Visualisation
Six weeks of Work placement	0.5 a day a week *	3	Self-Study
Ada Attendance	Week 5	5	Applied Artificial Intelligence
Six weeks of Work placement	0.5 a day a week *	3	Self-Study
Ada Attendance	Week 6	5	Applied Artificial Intelligence
Six weeks of Work placement	0.5 a day a week *	3	Self-Study
Ada Attendance	Week 7	5	Work-based Project
Six weeks of Work placement	0.5 a day a week *	3	Self-Study
Ada Attendance	Week 8	5	Work-based Project
Six weeks of Work placement	0.5 a day a week *	3	Self-Study
Ada Attendance	Week 9	5	Work-based Project
Six weeks of Work placement	0.5 a day a week *	3	Self-Study
Ada Attendance	Week 10	5	Preparation for EPA Level 4 Data Analyst Apprenticeship
Six weeks of Work placement	0.5 a day a week *	3	Self-Study
	TOTAL	80	

Intended learning outcomes at Level 5 are listed below:

Learning Outcomes – LEVEL 5	
3A. Knowledge and understanding	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
A5 Demonstrate a conceptual understanding and ability to design, implement and optimise analytical algorithms – as prototypes. **A6** Demonstrate a conceptual understanding and awareness of key platforms for data and analysis in an organisation that enables learners to solve problems. **A7** Develop a critical understanding of principles and techniques of machine learning, statistics, and analytics.	Knowledge and understanding will be developed through a combination of methods, including: lectures, and self-directed study using resources and the virtual learning environment. Learning will be applied to the organisational context and apprentices will be supported by a workplace mentor, in addition to regular formative feedback and summative review of work-integrated learning and assessment by their course and module tutors.

Learning Outcomes – LEVEL 5	
3A. Knowledge and understanding	
A8 Demonstrate a systematic understanding of data governance, data security, data bias and ethics, and how Data Analytics can be applied to improve an organisation's processes, operations and outputs.	The assessment strategy for each module is detailed in the module specification and indicates the nature of both formative and summative assessment. Apprentices will receive additional information and support from assessment briefs given by tutors. All module outcomes are assessed. A range of appropriate assessment methods will be utilised throughout with a significant focus placed upon appropriateness to the sector within which the apprenticeship is located.

3B. Cognitive skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
B5 Apply data analytics tools and techniques to source, access, explore, profile, pipeline, combine, transform and store data, and apply governance to data. **B6** Critically analyse the types of transformation the data has undergone to improve the effectiveness of the visualisation. **B7** Critically evaluate emerging data analysis technologies and assess how it can be applied to different types and amounts of data.	Cognitive skills will also draw on a range of learning and teaching methods appropriate to the demands of the module. These include: Lectures, formative peer-to-peer and tutor feedback and reflective practice relating to different tasks. The intellectual and cognitive skills will be acquired through directed reading, supported by focused questioning and critical discussion, project and assignment work relating theory to practise. Tutorial support and formative assessment provide the opportunity for guidance in the development of these skills.

3B. Cognitive skills	
B8 Analyse client/customer problems, requirements and criteria, and hence plan an appropriate solution strategy.	Skills will be assessed through written and oral evaluations of work. Learning will be applied to the organisational context and apprentices will be supported by a workplace mentor, in addition to regular review of work-based learning and assessment by their College tutor.

3C. Practical and professional skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
C5 Apply appropriate specialist software and/or advance programming as an aid to an analytical study for critically evaluating and/or visualising the outcomes to support conclusions and/or recommendations **C6** Critically analyse, interpret and evaluate complex information from diverse datasets and explain the limitations of data-driven approaches to decision-making. **C7** Select and apply appropriate machine learning (ML)algorithms. Analyse the strengths and weaknesses of selected ML algorithms and their use to extend capabilities for data analysis. **C8** Demonstrate complete handling of the full life-cycle of a data science and analytics project underpinned by an entrepreneurial	Practical and professional skills will be developed through workshops, lectures, presentations, formative feedback during tutorials and work integrated projects. Apprentices will also study independently, including critical evaluation of current practice. Close links will be made to the workplace context of each apprentice, with input from workplace contacts supporting tripartite contextualization of specific projects identified within individual modules. It is anticipated that apprentices off the job and work integrated learning will also play a significant role in the development of practical and professional skills. Assessment methods will be appropriate to the particular module but include tutor assessment of observed activities and written work. All practical work is linked to a method for evaluating the work and demonstrating understanding of the underlying theories.

3C. Practical and professional skills	
approach and a focus on the needs of real clients and the wider society within a professional, legal and ethical framework	

3D. Key/transferable skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
D5 Demonstrate a commitment to keeping up to date with current thinking and maintaining personal development, including collaborating with the data science community. **D6** Develop self-management skills to manage one's own time, meet deadlines and work with others. **D7** Manage one's own learning, exercise initiative, demonstrate an understanding of the context of legal, moral and ethical issues, gain personal responsibility and development in preparation for professional employment or further study. **D8** Autonomously manages a project with respect to time and task management; and makes decisions independently with respect to the needs and limitations of a project.	Key/transferable skills will be developed throughout the modules as content is related to the real-world context of each apprentice. Apprentices are also encouraged to take ideas back into their work environment from the course and implement them through their practice. Key/transferable skills are developed in the core modules which extend and enhance previously developed written skills, time management, reading, communication across a range of contexts, information retrieval and research skills. Specific models of practice used within individual workplaces will also be integrated into the working methods considered. The teaching methods include: lectures, workshops, formative feedback on written work and presentations. Apprentices can access, on demand or through referral, additional learning support for communication skills with the academic skills support available.


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4. Distinctive features of the programme structure

- **Where applicable, this section provides details on distinctive features such as:**
  - where in the structure above a professional/placement year fits in and how it may affect progression
  - any restrictions regarding the availability of elective modules
  - where in the programme structure students must make a choice of pathway/route
- **Additional considerations for apprenticeships:**
  - how the delivery of the academic award fits in with the wider apprenticeship
  - the integration of the 'on the job' and 'off the job' training
  - how the academic award fits within the assessment of the apprenticeship

The programme extends learning beyond the classroom and into the workplace. The aim is to integrate academic learning at degree level with on-the-job practical training to provide a holistic programme of education and training to meet the skills needs of employers now and in the future. This programme will develop professional practice, contextualised in the workplace using industry standard technologies and approaches that are shaped by modern businesses. Students (apprentices) studying on this programme are employed by an Employer (Hiring Business) and are working in a Data Analyst role.

The Programme Learning Outcomes, are based upon the requirements of the relevant Standard for Level 4 Data Analyst, which specifies the skills, knowledge and behaviours that the apprentice should acquire across the Degree programme, including the associated learning, development and application in the workplace. Academic content and work integrated learning are fused throughout the degree, and modules will contribute to the assessment of requisite knowledge, skills and behaviours for the award of Level 4 Data Analyst Apprenticeship.

The programme has two levels (level 4 and level 5), each equivalent to a normal academic year. It is equivalent to the first two years of a BSc (Honours) degree programme, and leads to the possibility of direct entry into the third year of the BSc Programme.

There is an expectation that an apprentice will spend 20% of their time undertaking off-the-job training. This is broadly equivalent to ten weeks per year for the duration of the programme (24 calendar months). The format and schedule to support the delivery and supervision of all modules has then been established with this principle in mind.

This pattern of study is designed to fit within a full-time apprenticeship and uses a blended learning approach, which mixes work-based study and attendance at college study weeks. This approach allows students to be both productive employees, learning relevant skills on the job, and participants in a learning community of students who are broadening and deepening their professional knowledge together.

The programme begins with ‘Data Analysis Concept & Project Management’ module to first introduce and familiarise learners with core concepts and skills in data analysis and the underlying building technologies. Moving away from technical knowledge, the module further provides students with competencies in the area of applied data analytics that they can apply within a project management environment through technical management and covering the IT project lifecycle, where learners will develop practical data science skills using real-world datasets.

Next, the programme explores the fundamental ideas of ‘Programming Principles’ through various programming concepts related to data. Before focusing on creating data science solutions for business applications. Programming language Python is integrated into the module practical element to prepare, analyse, process and present data science solutions.

The subsequent ‘Database Systems ’ module examines data design and structures, and learners learn how to query and manipulate data before applying their learning and exploring programming approaches. Learners will then study ‘Cloud Computing’, encompassing cybersecurity, cloud storage and online analytical services before finishing with an intensive statistics module that Describe the basic statistics involved in the analysis of data.

Year 2 begins with Advanced Programming for Data Analytics that boost learner’s coding skills to the required level to complete projects within data science. The module provides insights on intermediate and advanced data science topics, using the Python programming language. The focus will be on tools and methods rather than diving into the theoretical basis.

Learners bring together their data analytics skills in the ‘Applied AI’ module , which examines a range of common learning algorithms. Outputs from AI and Coding for data analytics will be visualised in ‘Data Visualisation’, a module that examines the principles of art and design, modern design software and the art of visual storytelling.

A key distinctive feature of the programme is that in level 5 , apprentices will complete a work-based project, which is a substantial piece of work combining knowledge and understanding alongside work-based development and practice. Apprentices will be required to design and undertake individual research and implement recommendations within their workplace.

The project should be conducted as part of the apprentice’s normal work. Employers should make suitable allowance for the project to be undertaken, both in terms of time and resources. However, there are some elements such as the writing of the report, particularly in its reflective aspects that may be undertaken outside of normal work. This should be agreed between the apprentice, employer and the College such that apprentices are not disadvantaged in any way from performing their job and meeting the requirements of the project. Any issues with confidentiality and/or security will also be addressed between the college, employer and apprentice allowing for projects of business value to be undertaken using real data.

The curriculum is based around the apprenticeship work-based learning framework, utilising a combination of: core subject modules, designed to give a platform for the development of technical and generic skills.

All modules are appropriately designated with variation in the relative proportions of SLTA (Scheduled Learning and Teaching Activities), GIS (Guided Independent Study) and, of course, WBL (work-based learning) that aggregate to afford the 'notional learning hours' for a particular module. In addition to the WBL, SLTA and GIS, apprentices will be further supported by online materials, stored on a Virtual Learning Environment(VLE) and interactions with their skills coaches for the duration of the programme.

Each module is a self-contained block of learning with defined aims, learning outcomes and assessment. A standard module is worth 30 credits. It equates to the learning activity expected from one fourth of a full-time year. The first five weeks of the programme at level 4 is delivered as a "Launchpad" at the college. The Launchpad will provide an opportunity for students to consolidate their learning, receive academic tutorial support, allow revision time and introduce the next module in the schedule.

5. Support for students and their learning.
(For apprenticeships this should include details of how student learning is supported in the work place)

Students will benefit from considerable support from the College and their employer. Personalised apprentice support , with opportunities for apprentice-staff contact, is recognised as a key factor in apprentice motivation, involvement and achievement. Given the non-traditional nature of degree apprenticeships, a focused induction programme is planned to ensure that apprentices understand the importance of accessing support, are aware of what is available and how to access it.

The student support and guidance are evaluated through:

I. Virtual Learning Environment (VLE)

The programme provides a Virtual Learning Environment (VLE) to support teaching and learning. The name of the VLE that has been adopted by the college is called Google Classroom. This VLE was launched by Google for Education in August 2014 as an alternative to other VLE's, such as Blackboard and Moodle, and is a platform which allows teaching staff to create and upload online learning resources, and set, collect and grade student assignments. Teaching staff also utilise existing Google applications, such as Gmail and Google Drive to facilitate the creation of documents and communication

with students. They will also be able to provide links for students directly from Google Classroom to other College resources.

II. Technical Skills Coaches (TSC)

Ada will appoint a Technical Skills Coach (TSC) for each apprentice who will support them throughout their study and meet regularly with their employer on quarterly basis. The skills coaching system provides every student with a dedicated TSC who assists them with their progress on each aspect of the programme and who is concerned for their general welfare. At the beginning of the programme, each student will be allocated a skills coach to act as their adviser throughout their studies; the skills coach is responsible for facilitating a student's overall development. All learners will meet at least every twelve weeks with the student and employer to evaluate and support progress and to further encourage their academic and professional development. If the learner is struggling in any facet of the programme or if there is a welfare concern the skills coach will meet them more frequently, such as weekly, until they are back on track. Meetings may be face-to-face or remote and the skills coach will keep a record of what is discussed using the OneFile ePortfolio system.

On one hand, the pastoral side of the role can often be simply a friendly conversation at the start of each meeting. On the other hand, the academic/developmental aspect of the role offers the chance for students to discuss their development towards EPA and beyond their formal studies. These meetings can be used by students to sound out their thoughts, ideas and concerns with an experienced professional, who can guide them in the right direction personally, professionally and academically.

The intention behind the Skills Coaching Strategy is that all students:

- are given the opportunity to reflect on their learning and academic progress and to discuss and formulate appropriate strategies to fulfil their potential during their studies at the College;
- are equipped with a lifelong approach to learning enabling continuing personal and intellectual growth;
- are provided with pastoral support which is tailored to their needs, enabling them to take full advantage of their time at the college to develop and maintain a healthy and happy outlook on life;
- develop an awareness of the need for professional and career development and receive guidance on the planning and recording of skills development throughout their studies in order to realise their career aspirations;
- experience the benefits of working with peers and academic tutors within a supportive atmosphere

<u>Technical Skills Coach Activities :</u>

a) Quarterly Reviews and One-to-One Support Meetings

Skills Coaches lead a formal review of the apprentice's progress with both the apprentice and the employer on a 12-weekly basis. Progress on each aspect of the apprentice's programme is considered with a particular focus on the Knowledge, Skills and Behaviours (KSB) of the DTSP standard. Targets are negotiated to encourage the development of the KSBs both at work and while engaging in their academic activity. Employers are encouraged to support this fully and match potential work projects with the needs of the apprentice to help develop them and their work-based portfolios.

During the review, the Skills Coach also addresses Well-being and Learner Support where a range of referrals can be discussed if needed including to the Ada counsellor if required. Safeguarding concerns are reported to the Safeguarding Lead via the college CPOMS portal and/or directly according to severity. This is the same process for PREVENT, British Values and EDI discussions and concerns. The TSC team has been provided with Mental Health Awareness training to help them to identify potential well-being issues.

One-to-one support meetings are facilitated based on need. An interim check in is arranged between each review but the frequency of this can change to monthly, fortnightly, weekly or daily if circumstances require this. General notes regarding the check ins are stored on OneFile and shared as appropriate. Student concerns which require confidentiality are uploaded on to CPOMS as it is not accessible by employers and access to it can be limited. Additional tuition on specific subjects can be facilitated with the relevant lecturer if needed.

b) Work-based Portfolio Development

The TSC supports the development of the apprentices' Work-based Portfolio by helping them plan, collect and present evidence over the course of their practical period. Apprentices present their evidence in a series of reflective statements that are reviewed by the TSCs who provide developmental feedback and help reference the evidence against the standard in their ePortfolio on OneFile. This iterative approach to portfolio development gives the apprentice the opportunity to present their best evidence in the most effective way. The work-based portfolio is not a requirement of the Foundation Degree. However, it is a significant component of the Level 4 Data Analyst Apprenticeship that will be assessed by an external body.

c) Maintain Visible Progress Records on OneFIle

The OneFile ePortfolio platform is a live record of the apprentices' progress on the programme that is visible to the TSC, the apprentice and the employer as well as centre managers. The employer has multiple separate logins with different access levels so they can view their learners' progress as appropriate. Records are maintained by the apprentice and the TSC to include the Work-based Portfolio, module progress, targets and documented reviews, check-ins and communication regarding the apprentice. CPOMS is the system for potentially sensitive information such as protected characteristics if they do not wish to disclose to their employer.

III. Individual Learning Plan (ILP)

Apprentices will be supported in the development of an individual Learning Plan, demonstrating application of the programme knowledge and understanding, skills and behaviours in the work environment. Learning and support needs will be easily identified through the Individual Learning Plan (ILP) that apprentices and skills coaches maintain and review at least quarterly or more frequently if required. The prime forum for this support will be the work-integrated learning activity at levels 4, 5 and 6 and support and review meetings between the apprentice, employer and skills coach.

IV. College- employer collaboration

The employer will appoint a workplace mentor, who will work closely with the TSC to oversee delivery and evidencing of relevant training delivered in the workplace, in agreement with the College.

The employer and College will work collaboratively to ensure the apprentice is able to meet the requirements of both the degree and the Apprenticeship Certificate: Digital & Technology Solutions, notably through workplace support, work-integrated training and College module completion. One example of this collaborative support is the final year (Level 6) project, which requires the apprentices to agree a project to be carried out within the workplace and as part of the apprentice's usual work, with appropriate employer allowance and College academic support. This project must fit the constraints of the business, but also enable the apprentice to meet degree and Apprenticeship Certificate: Digital & Technology Solutions Standard criteria.

V. Personal Development

During the period of study, students will be provided with several opportunities to reflect on their progress and to think about what they want to improve and develop. Co-curricular activities have been included such as the followings:

- workshops and resources designed to support the transition to HE-Level study;
- workshops and resources focussing on particular academic skills areas (for example, essay-writing, and presentation skills,);
- reflective individual and group learning activities, including reflective statements;
- the opportunity to meet with skills coaches to discuss their progress and development starting during the Launchpad.

VI. Training Plan (previously called the Commitment Statement)

The apprentice shall

- Attend training sessions, either on- or off-the-job, as and when required;

- Provide all evidence to demonstrate eligibility for the programme.

- Liaise with the skills coach and the employer, as applicable, in relation to any reviews, monitoring, or audits required for the apprenticeship, including providing information for, and access to, all documentation relevant to the apprenticeship on request;

The employer shall

- Provide a safe and supportive environment for the work-based elements of the apprenticeship;
- Provide a workplace mentor to supervise their progress through the programme both from an academic and pastoral perspective;
- Ensure that the apprentice's roles at work allow him/her to gain the wider employment experience required by the programme and the apprenticeship framework;
- Ensure that the apprentice is given sufficient time to enable him/her to complete all elements of the work-based learning elements of the programme within his/her contracted working hours (this is part of the 20% off-the-job learning commitment);
- Allow the apprentice to attend all agreed off-the-job learning and shall continue to pay the apprentice during such time, where it falls within normal working hours (this is part of the 20% off-the-job learning commitment);

The College shall

- Deliver the academic learning elements of the programme and establish and/or deliver on- and off-the-job learning to meet the needs of the apprenticeship, the apprentice and the employer;
- Monitor the apprentice's progress in liaison with the employer, and the skills coach shall keep the employer informed of the apprentice's progress, including any disciplinary issues;
- Monitor the quality of learning delivery to ensure that it meets the required standards, including liaising with both the employer and the apprentice.
- Provide a clear process for solving queries and complaints from apprentices and employers.
- Keep the training plan up to date with the latest information.

6. Criteria for admission
(For apprenticeships this should include details of how the criteria will be used with employers who will be recruiting apprentices.)

All students must be interviewed, assessed and offered a position by an employer before being admitted to the degree. Although the College may receive direct applications and filter these applications before passing them to prospective employers some apprentices may apply directly to an employer. Either way, after acceptance by an employer, the College will require a formal application, which will be assessed according to the following criteria.

Applicants must have one of the following:

- At least three A-Level Qualifications at grade C or above, preferably from STEM subjects.
- AND/OR Level 3 (QCF) BTEC National Diploma in Information Technology, or computing related courses– MMM / MM

- Level 2 Professional qualification in a suitable computing related area. (students can possess a combination of these qualifications if relevant)

- Or other equivalents including apprenticeship pathways at level 3.

- Additionally, students are normally required to have a grade 5 or above in GCSE Maths and English Language or to have demonstrated ability in Maths and English in further studies.

- Admissions for entry up to commencement of Level 6, demonstrating Accreditation of Prior Learning (APL), or Accrediting Prior Experiential Learning (APEL) will also be considered on a case-by-case basis.

- In exceptional cases, the College may admit students who do not satisfy the above requirements, if they are able to demonstrate that by virtue of other studies and/or experience, they can manage their studies and benefit from the route. For example, Ada can support learners during their course of study to gain their GCSE Maths and English Language qualifications through one-to-one support and a learning software solution.

- In addition to college selection criteria and process, the employer may have additional pre-College filtering processes in place, which should be shared with the College.

7. Language of study
English

8. Information about non-OU standard assessment regulations (including PSRB requirements)
N/A

9. For apprenticeships in England End Point Assessment (EPA).
(Summary of the approved assessment plan and how the academic award fits within this and the EPA)

The End-Point Assessment (EPA) is the final assessment of the apprenticeship element of the programme that each apprentice is required to take to complete their apprenticeship. It occurs at the end of their apprenticeship, after the completion of the formal degree. It is important to note that the EPA is assessed separately and independently from the degree, although the production of some elements of the EPA are integrated into the degree programme, to reduce the workload on the apprentice as much as possible.

The British Computing Society (BCS), The Chartered Institute for IT carries out the EPA for Level 4 Data Analyst Apprenticeship. The End Point Assessment is a holistic assessment of occupational competency against the Knowledge, Skills and Behaviours (KSB) that are listed in the standard. Various assessment methods (e.g. portfolio, project report, interview and presentation) are utilised to ensure a holistic evaluation of whether the apprentice has developed these KSBs whilst on programme.

The college and the employer work together to support the apprentice and to carry out the EPA. In addition to the academic work that leads to the award of the Foundation degree in Digital Innovation, the apprentice will create a portfolio of evidence which will demonstrate how learning has been applied, their achievements and capabilities. It is a collection of evidence which demonstrates evidence of the skills, knowledge and behaviours an apprentice has acquired against the standard.

10. Methods for evaluating and improving the quality and standards of teaching and learning.

A range of methods are used for evaluating and improving the quality and standards of teaching and learning. These include:

Annual Programme Review

- An annual Programme Report and associated action plan is informed by the annual modules' review, external examiner reports, programme team responses through Teaching, Learning & Assessment Committee (TLA) and apprentice feedback through each module's evaluation and Staff-Student Liaison Committee (SSLC).

- The procedures for the annual programme review provide a framework for the Head of Degree Programmes to reflect upon the outcomes of the module review process, consider feedback from external examiner(s) and students, as well as data on student achievement and the qualifications awarded.

- The Head of Degree Programmes has responsibility for monitoring the programmes of study as specified in the Calendar. They are asked to comment on the curriculum and assessment methods across the programme, the learning resources that support it, the implementation of changes proposed in earlier monitoring reports and any future developments.

- The Head of Degree Programmes submits the Annual Programme Review report to the Academic Board and the Open University. Annual Programme Review reports are considered at the Learning, Teaching and Assessment Committee. Any relevant points are reported to the Staff-Student Liaison Committee.

Teaching, Learning and Assessment Committee

- The committee will ensure the quality of teaching, learning and assessment in Ada's HE provision is of a consistently high standard.

- It will make evidence-based recommendations for improvement in HE teaching, learning and assessment across the College's HE programmes.

- It will incorporate recommendations and suggestions from the academic team, employers and the OU academic Reviewer.

- The committee will also ensure integration across 16-19 and 19+.These are age brackets and there is also a 6th form provision in line with Ada's overarching approach to industry-led teaching and learning that sits at the heart of the College's mission statement and role as a Government National College.

- On a regular basis a review will be undertaken of teaching and learning across the HE programmes. This will incorporate a review of the variety of assessment methods of student progress and learning outcomes. This will achieve three outcomes:

i. An on-going enhancement of pedagogical practices and student learning at Ada through on-going incremental improvements in practice that will be added to by peer-to-peer support and development as well as continuous professional development for staff and the use of self-evaluation tools for students through our VLE.

ii. Implementation of evidence-based changes to assessment practice and processes.

iii. The reliability of recommendations to the Board of Examiners for the awards of qualification are an accurate reflection of each HE students' progress on their programme of study and the development of the knowledge and skills against the QAA Quality Code Qualification Descriptors and Subject Specific Statement.

Apprentice Feedback

Apprentice feedback is collected in a variety of ways including module evaluations and SSLC. The feedback loop is typically closed quickly through the apprentice representatives and/ or module leader. Where matters cannot be resolved immediately apprentices are appraised by the programme leader, who will also flag issues at Academic Board level as appropriate. This highlights the strength and influence of the apprentice voice.

Staff and Student Liaison Committee

- The Staff and Student Liaison Committee (SSLC) is made up of student representatives and members of academic staff and provides a link between staff and students enabling discussion on matters to do with teaching and learning that don't fit the stricter remit of the Academic Board nor Teaching, Learning and Assessment committee.

- The SSLC deals with student feedback and input and is the main conduit for ensuring student voice within the HE programmes. Student representation on the committee ensures that the SSLC is well-informed of developments across the HE programmes in the College and can usefully inform future strategy, policy development and programme growth and evolution.

- The SSLC should be consulted on any major changes to course structures or content and must not consider matters relating to named members of staff or students, nor is the SSLC the place for students to air their personal grievances.

In addition to above, the following methods are also used for evaluating and improving the quality and standards of teaching and learning:

- Staff development events aimed at improved teaching and learning, attended by academic staff.

- Professional currency of staff, including awareness of developments in external reference points, such as subject and professional standards and benchmarks.

- Lesson observations, undertaken as part of the College's quality assurance framework. These include short walk-through, observations and a minimum of one longer lesson observation during each academic year. Where areas for improvement are identified, the Head of Faculty is assigned to support development of practice. Re-observations are then scheduled to monitor impact.

10. Changes made to the programme since last (re)validation

Major changes have been made to the programme in two ways :

i. Restructuring the programme at each level
ii. Inclusion of a new pathway

Programme's Restructuring

Major restructuring of the programme has been accomplished through the delivery of four modules at each level. The restructured programme is made up of four thirty-credit modules at each level.

Within the programme, there will be core modules, which all students within the programme must complete to qualify for the FD award. The restructured programme will offer five core modules at level 4, and 4 core modules at level 5.

The components of the revised module descriptors (the learning outcomes, the indicative content, the assessment strategy and the resources), as well as new modules as result of merging some existing modules reflect the enrichment of the modules that will in turn account for the increase of the module's credit.

The four more substantial (30 credit) modules replacing the six 20 credit modules provides a more streamlined programme that consolidates and dives deeper into content that was at risk of repeating at a shallow level across the current module suite.

Annexe 1 - Curriculum map

All units which assess particular learning outcome(s) also assume responsibility for delivering this content as well.

Level 4																
Study module	**Programme outcomes**															
	A1	**A2**	**A3**	**A4**	**B1**	**B2**	**B3**	**B4**	**C1**	**C2**	**C3**	**C4**	**D1**	**D2**	**D3**	**D4**
Data Analysis Concepts and Project Management	x		x			x			x	x	x	x	x		x	
Programming for Data Analysis		x			x				x							x
Database Systems	x							x			x					x
Cloud Computing				x			x					x		x		
Statistics for Data Analysis		x					x				x		x			

Level 5																
	Programme outcomes															
Study module	**A5**	**A6**	**A7**	**A8**	**B5**	**B6**	**B7**	**B8**	**C5**	**C6**	**C7**	**C8**	**D5**	**D6**	**D7**	**D8**
Advance Programming for Data Analysis	x			x			x		x		x			x		
Work-based Project		x			x			x				x			x	x
Data Visualisation			x			x				x				x		

Applied Artificial Intelligence			x				X					x	x			

Annexe 2 - Curriculum mapping against the apprenticeship standard

Level 4 Data Analyst Apprenticeship Standard

Knowledge

K1: current relevant legislation and its application to the safe use of data
K2: organisational data and information security standards, policies and procedures relevant to data management activities
K3: principles of the data life cycle and the steps involved in carrying out routine data analysis tasks
K4: principles of data, including open and public data, administrative data, and research data
K5: the differences between structured and unstructured data
K6: the fundamentals of data structures, database system design, implementation and maintenance
K7: principles of user experience and domain context for data analytics
K8: quality risks inherent in data and how to mitigate or resolve these
K9: principal approaches to defining customer requirements for data analysis
K10: approaches to combining data from different sources
K11: approaches to organisational tools and methods for data analysis
K12: organisational data architecture
K13: principles of statistics for analysing datasets
K14: the principles of descriptive, predictive and prescriptive analytics
K15: the ethical aspects associated with the use and collation of data

Skills

S1: Use data systems securely to meet requirements and in line with organisational procedures and legislation including principles of Privacy by Design
S2: implement the stages of the data analysis lifecycle
S3: apply principles of data classification within data analysis activity
S4: analyse data sets taking account of different data structures and database designs

S5: assess the impact on user experience and domain context on data analysis activity
S6: identify and escalate quality risks in data analysis with suggested mitigation or resolutions as appropriate
S7: undertake customer requirements analysis and implement findings in data analytics planning and outputs
S8: identify data sources and the risks and challenges to combination within data analysis activity
S9: apply organisational architecture requirements to data analysis activities
S10: apply statistical methodologies to data analysis tasks
S11: apply predictive analytics in the collation and use of data
S12: collaborate and communicate with a range of internal and external stakeholders using appropriate styles and behaviours to suit the audience
S13: use a range of analytical techniques such as data mining, time series forecasting and modelling techniques to identify and predict trends and patterns in data
S14: collate and interpret qualitative and quantitative data and convert into infographics, reports, tables, dashboards and graphs
S15: select and apply the most appropriate data tools to achieve the optimum outcome

Behaviours

B1: maintain a productive, professional and secure working environment
B2: show initiative, being resourceful when faced with a problem and taking responsibility for solving problems within their own remit
B3: work independently and collaboratively
B4: logical and analytical
B5: identify issues quickly, investigating and solving complex problems and applying appropriate solutions. Ensures the true root cause of any problem is found and a solution is identified which prevents recurrence.
B6: resilient - viewing obstacles as challenges and learning from failure.
B7: adaptable to changing contexts within the scope of a project, direction of the organisation or Data Analyst role.

All units which assess particular knowledge, skills and behaviours also assume responsibility for delivering this content as well.

Level	Modules	K1	K2	K3	K4	K5	K6	K7	K8	K9	K10	K11	K12	K13	K14	K15
4	Data Analysis Concepts and Project Management			x	x			x		x		x				x
	Programming for Data Analysis					x	X									
	Database Systems						x				x		X			
	Cloud Computing	x	x						x							
	Statistics for Data Analysis													x		
5	Advanced Programming for Data Analysis					x										
	Work-based Project	x	x	x				x	x	x						
	Data Visualisation				x						x	x		x	x	
	Applied Artificial Intelligence														x	

Level	Modules	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15
4 Core	Data Analysis Concepts and Project Management	x	x										x			x
	Programming for Data Analysis			x												
	Database Systems				x											
	Cloud Computing								x							
	Statistics for Data Analysis										x					
	Advanced Programming for Data Analysis				x											

5 Core	Work-based Project					x		x		x			x		x	
	Data Visualisation			x							x			x	x	
	Applied Artificial Intelligence						x									

Level	Modules	B1	B2	B3	B4	B5	B6	B7
4	Data Analysis Concepts and Project Management		x		x		x	
	Programming for Data Analysis					x		
	Database Systems			x				
	Cloud Computing		x					
	Statistics for Data Analysis				x			
5	Advanced Programming for Data Analysis							X
	Work-based Project	x	x	x				x
	Data Visualisation				x			
	Applied Artificial Intelligence					x		

Annexe 3: Notes on completing programme specification templates

1 **-** This programme specification should be mapped against the learning outcomes detailed in module specifications.

2 – The expectations regarding student achievement and attributes described by the learning outcome in section 3 must be appropriate to the level of the award within the **QAA frameworks for HE qualifications**: http://www.qaa.ac.uk/AssuringStandardsAndQuality/Pages/default.aspx

3 – Learning outcomes must also reflect the detailed statements of graduate attributes set out in **QAA subject benchmark statements** that are relevant to the programme/award: http://www.qaa.ac.uk/AssuringStandardsAndQuality/subject-guidance/Pages/Subject-benchmark-statements.aspx

4 – In section 3, the learning and teaching methods deployed should enable the achievement of the full range of intended learning outcomes. Similarly, the choice of assessment methods in section 3 should enable students to demonstrate the achievement of related learning outcomes. Overall, assessment should cover the full range of learning outcomes.

5 - Where the programme contains validated **exit awards** (e.g. CertHE, DipHE, PGDip), learning outcomes must be clearly specified for each award.

6 - For programmes with distinctive study **routes or pathways** the specific rationale and learning outcomes for each route must be provided.

7 – Validated programmes delivered in **languages other then English** must have programme specifications both in English and the language of delivery.