# Purpose

The aim of this document is to help apprentices choose a synoptic project[[1]](#footnote-1) topic that covers all specialist competencies, as listed in the Digital & Technology Solutions Professional (DTSP) standard[[2]](#footnote-2). In order to achieve that, each apprentice will provide a short narrative (in the rightmost column of the table in section 3) describing how the proposed synoptic project aligns with each of the competencies associated to the relevant specialism, either Software Engineer or Business Analyst. The apprentices will receive guidance from their Degree Apprenticeship Tutor on how to complete the table, in addition to the regular coaching sessions scheduled across the delivery of the DC3010 Individual Project module.

The synoptic project is a substantial piece of work, typically taking around 6 months to undertake, alongside the apprentices’ normal duties to their employer. This equates to 300 hours to complete. The hours will continue to be logged on the 20% off-the-job calculator. Apprentices are required to submit the synoptic project proposal (aka Project Definition Form[[3]](#footnote-3)) together with this companion for approval. Should the synoptic project topic be approved, apprentices will be assigned an academic supervisor and can start working on their projects. If the project requires the undertaking of any primary research, further ethics approval will be necessary. This approval may be obtained after project work begins, but before the primary study is undertaken. Section 5 of this document contains the essentials of the ethics approval process.

# The End Point Assessment

**Extract from the Assessment Plan**[[4]](#footnote-4)

2.2.2 Synoptic project assessment

The synoptic project is a work based project that broadly represents the skills, knowledge and behaviours in the standard. The project will provide substantive evidence from a business-related project to demonstrate the application of skills and knowledge. The end point assessment integrates the project outcomes and presentation into the overall synoptic project assessment. It will take place over a period of around 6 months, near the end of the programme. It is designed to assess apprentices in a consistent way, irrespective of their particular workplace and university. Because of the significance of the project the employer and university should work together with the apprentice to agree a project that is achievable within the employer’s business constraints and that meets the requirements of the standard. 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 apprentice, employer and university 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 university, employer and apprentice allowing for projects of business value to be undertaken using real data.

The assessment of the synoptic project should include the employer’s assessment against the common criteria for the project. Every project assessment is required to incorporate employer contribution in addition to normal university project assessment. This needs to be consistent for all projects.

The end point assessment (aka the synoptic project) is integrated within the DTSP programme offered by Aston University. The module that equates to the end point assessment is DC3010 Individual Project, which is assessed in two elements: a deliverable accompanied by a project report and an oral presentation. Both these elements will be judged against the standard, and test the application of the skills, knowledge and behaviours listed therein.

After the submission of the project deliverable and report, and before the oral presentation, each apprentice will undergo a process called gateway. The evidence apprentices will need to submit to go through the gateway successfully is given below:

* This companion document, containing:
  + the mapping to the specialist competencies in the standard (section 3);
  + the complete 20% off-the-job calculator, showing total off-the-job training hours at the end of the apprenticeship (section 4); and
  + the details of the apprentice, alongside the signatures of the apprentice, the coach and the employer (sections 6 and 7).
* All evidence of Level 2 English and maths, and any other evidence required by the training provider (the University’s Apprenticeship Team will provide details in due course).

# Project to competencies mapping

Your project should relate to your chosen specialism from the DTSP standard. Your DTSP specialism the same as the specialism you have chosen within your degree programme. High-level descriptors of typical projects are given below for each of the DTSP specialisms offered by Aston University.

Complete the mapping narrative column for your specialism, in the table below. For each specified outcome or competency, briefly state how your planned project will result in that outcome or require the use of that competency. Taking account of the requirements detailed in the table, complete your project definition form and have it ready to review at your upcoming coaching session. Remember, you will need you employer’s approval for the project.

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| --- | --- | --- | --- | --- |
| **Occupational Specialism** | **Area of competence** | **Typical Project** | **Outcomes/Competencies** | **Mapping narrative** |
| **Software Engineer (from assessment plan)** | Use software development processes, including the knowledge, skills, and professional competences necessary to practice as a software engineer in a business environment | This could be a project to design and develop a significant piece of software or a new software product prototype to achieve defined business objectives, for a defined user group or customer group, using one of the defined languages, within defined business processes, and applying appropriate levels of security. It will include significant project planning including estimations of both time and cost to proposed solutions, include technical and commercial aspects of the proposed solution. | 1. Clear prioritised specification 2. Well justified solution design with models 3. Appropriate test plan 4. Security appraisal 5. Solution deliverables 6. Well documented solution for maintainability |  |
| **Software Engineer (from standard)** | Skills |  | 1. Create effective and secure software solutions using contemporary software development languages to deliver the full range of functional and non-functional requirements using relevant development methodologies. 2. Undertake analysis and design to create artefacts, such as use cases to produce robust software designs. 3. Produce high quality code with sound syntax in at least one language following best practices and standards. 4. Perform code reviews, debugging and refactoring to improve code quality and efficiency. 5. Test code to ensure that the functional and non-functional requirements have been met. 6. Deliver software solutions using industry standard build processes, and tools for configuration management, version control and software build, release and deployment into enterprise environments. |  |
|  | Knowledge |  | 1. How to operate at all stages of the software development lifecycle. 2. How teams work effectively to develop software solutions embracing agile and other development approaches. 3. How to apply software analysis and design approaches. 4. How to interpret and implement a design, compliant with functional, non-functional and security requirements. 5. How to perform functional and unit testing. 6. How to use and apply the range of software tools used in Software engineering. | 1. Already covered by DC2060 Team Project. The synoptic project is an individual assessment. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Occupational Specialism** | **Area of competence** | **Typical Project** | **Outcomes/Competencies** | **Mapping narrative** |
| **Business Analyst (from assessment plan)** | Apply structured processes for identifying, defining and analysing unstructured business problems, their root cause and impact | This could be a Business Analysis study to analyse, and model a problem-specific domain and to develop a solution approach based upon the analysis. It will include significant project planning including estimations of both time and cost to proposed solutions, include technical and commercial aspects of the proposed solution. | 1. Analysis of current state with models 2. Problem definition 3. Requirements engineering 4. Analysis design models 5. Future state |  |
| **Business Analyst (from standard)** | Skills |  | 1. Develop and apply modelling and analysis techniques to describe business problem scenarios and to help select solutions using a range of industry standard analysis techniques. 2. Elicit and prioritise business requirements for a digital technology system using ‘industry best practice’ methods. 3. Develop a clear, complete, unambiguous and testable requirements specification, including functional, non- functional, data, user interface and security requirements. 4. Model the ‘as is’ and future state for a business process using industry standard approaches and notation. 5. Evaluate selected models against business objectives and system requirements. 6. Use ‘industry’ standard tools to facilitate the analysis, documentation and traceability of requirements. |  |
|  | Knowledge |  | 1. The use of requirements elicitation techniques and their relevance to given situations. 2. The principles of requirements engineering and the importance of managing requirements. 3. How to conduct a range of business/organisational analyses. 4. The use of tools to support modelling and requirements engineering. 5. How the selected models inter-relate with each other. 6. How the products of analysis feed into the design and development of a system. |  |

# 20% off-the-job

Based on your submitted off-the-job training to date, calculate the number of hours you need to spend on off-the-job training during the development of your synoptic project. Outline how you will achieve this as part of the DC3010 Individual Project module.

Total number of off-the-job training hours required:

Hours spent to date:

Plan to spend remaining hours:

# Ethics

Once you submit your completed Project Definition Form and this companion, your chosen topic will be checked by the DC3010 module leader to ensure it can be carried out by a final stage undergraduate. Project topics that may be described as sensitive or contentious, e.g., involving the collection of primary data from NHS patients or people suffering from mental health disorders, are not suited to either of the programme’s specialisms (the special training needed to perform this kind of work is not covered by the DTSP curriculum). If your topic is approved, you will be allocated an academic supervisor and are clear to start working on your project. Conversely, if there are concerns regarding your proposed topics, you will be contacted by the DC3010 module leader or the Ethics Committee Chair.

If your project involves the collection of primary data via questionnaires, surveys or equivalent, you will need to undergo an ethics approval process. All relevant details are available in the Ethics area of the DC3010 Individual Project Blackboard page.

# Apprentice Details

**For Apprenticeship Team use only**

20% off-the-job calculator received: yes/no

20% off-the-job study time used up completely: yes/no

Gateway relevant qualifications received: yes/no

Gateway relevant qualifications satisfactory: yes/no

If any of the above answers is no, please provide notes describing further actions needed.

Name: Chris Aldred

SUN (retrieve from Aston University card): 840599

Date when enrolled on BSc Digital and Technology Solutions programme: June 2017

Date when expected to graduate from BSc Digital and Technology Solutions programme:

# Signatures

Apprentice:



Employer:

Coach:

1. This is also known as the End Point Assessment (EPA). Currently, this is integrated within the Digital & Technology Solutions Professional programme, in the form of the final module to be completed, namely DC3010 Individual Project. [↑](#footnote-ref-1)
2. Available here: <https://www.instituteforapprenticeships.org/apprenticeship-standards/digital-and-technology-solutions-professional-(integrated-degree)-v1-1> [↑](#footnote-ref-2)
3. Guidance on how to fill in and submit that will be provided in the DC3010 introductory session. [↑](#footnote-ref-3)
4. **DIGITAL INDUSTRIES - ASSESSMENT PLAN**, **DIGITAL & TECHNOLOGY SOLUTIONS PROFESSIONAL. BSC (Hons) Digital & Technology Solutions** <https://www.instituteforapprenticeships.org/media/1073/digital_and_technology_solutions_professional.pdf> [↑](#footnote-ref-4)