

GCE AS/A LEVEL



# WJEC GCE AS/A Level in DIGITAL TECHNOLOGY

APPROVED BY QUALIFICATIONS WALES

## DELIVERY GUIDE

Teaching from 2022

For AS award from 2023

For A level award from 2024



This Qualifications Wales regulated qualification is not available to centres in England.



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## AIMS OF THE GUIDANCE FOR TEACHING

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The principal aim of the Guidance for Teaching is to support teachers in the delivery of the new **WJEC GCE Digital Technology** specification and to offer guidance on the requirements of the qualification and the assessment process. The Guidance for Teaching is **not intended as a comprehensive reference**, but as support for professional teachers to develop stimulating and exciting courses tailored to the needs and skills of their own students in their particular institutions.

## AIMS OF THE DELIVERY GUIDE

The principal aim of the Delivery Guide is to give an overview of the qualification. It will offer an introduction to the specification, an assessment overview and other guidance that we hope teachers will find useful. Greater information on each unit can be found in the separate unit guides.

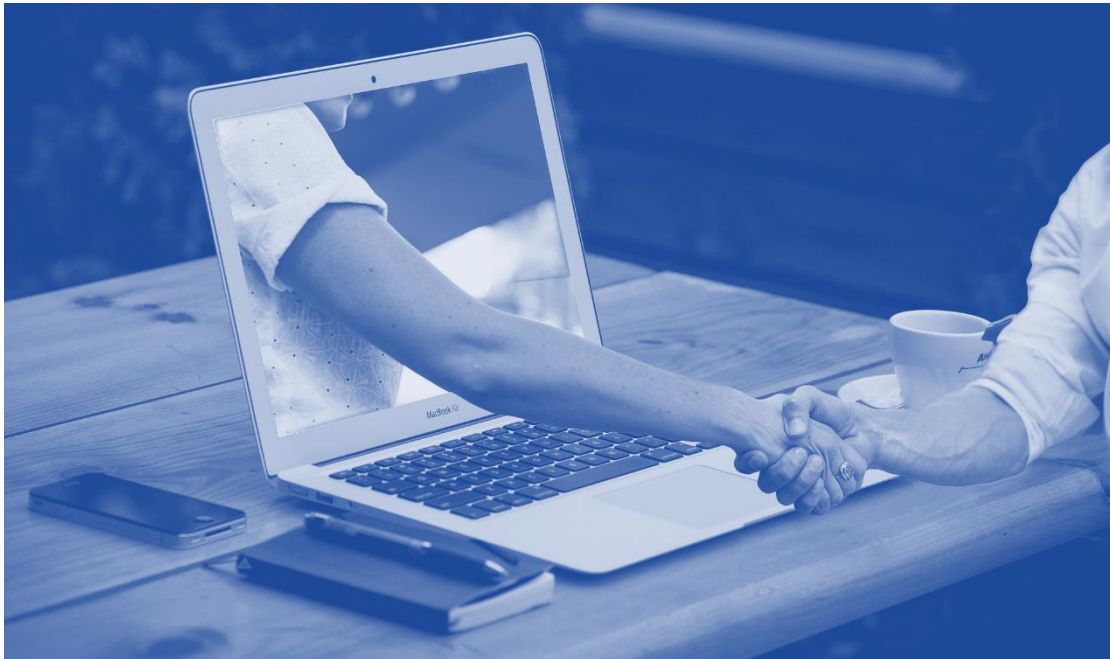


Fig.1

# 1. Specification Overview

## 1.1 Aims and objectives

The **WJEC GCE in Digital Technology** qualification, approved by Qualifications Wales for first teaching from September 2022, is available to:

- all schools and colleges in Wales
- subject to local agreement, it is also available to centres outside Wales, for example in the crown dependencies of the Isle of Man and the Channel Islands, and in British overseas territories, and to British forces schools overseas. It is not available to other overseas centres or in England or Northern Ireland.

It will be awarded for the first time for AS in Summer 2023, using grades A–E and will be awarded for the the first time for A level in Summer 2024, using grades A\*–E.

The current specification is available here:

<https://www.wjec.co.uk/qualifications/digital-technology-as-a-level>

The WJEC GCE qualification in Digital Technology advances learners' understanding of the digital technologies that are used by individuals and organisations across the world, including how they have developed and how they continue to change.

The qualification enables learners to develop a deep understanding of how innovations in digital technology, and the increasing levels of connectivity between them, impact the lives of those who use them and the wider society.

Learners will also develop practical skills in developing both creative digital products and digital solutions to problems faced by organisations, supporting their progression into employment in a career that utilises digital technologies or onto a programme of higher education involving digital technologies.

This WJEC GCSE specification in Digital Technology will enable learners to develop:

- an understanding of significant past, current and emerging digital technologies
- an understanding of the integrated and connected nature of digital technologies used by individuals and organisations
- skills in researching and exploring issues before finding and implementing effective solutions to them
- skills in planning, designing and creating innovative web-based and multimedia content that meets the needs of specific audiences
- an understanding of legal, social, ethical and professional and environmental impacts of digital technologies on individuals and wider society
- a knowledge of the systems development life cycle and its iterative and cyclical nature.

## 1.2 Prior learning and progression

This specification builds on the knowledge, understanding and skills established at GCSE. Some learners may have already gained knowledge, understanding and skills through their study of Digital Technology at GCSE. However, there are no prior learning requirements for this specification. Any requirements set for entry to a course following this specification are at the discretion of centres.

It is reasonable to assume that many learners will have achieved qualifications equivalent to Level 2 at KS4. Skills in Numeracy/Mathematics, Literacy/English and Digital Technology will provide good basis for progression to this Level 3 qualification, as will knowledge and understanding gained through the study of Level 2 sector/subject related qualifications.

This specification provides a suitable foundation for the study of Digital Technology or a related area through a range of higher education courses, progression to the next level of vocational qualifications or employment. In addition, the specification provides a coherent, satisfying and worthwhile course of study for learners who do not progress to further study in this subject.

This specification is not age specific and, as such, provides opportunities for learners to extend their life-long learning.

## 1.3 Additional ways that WJEC can offer support:

- sample assessment materials and mark schemes
- exemplar materials for NEA units
- face-to-face and web-based CPD events
- examiners' reports on each question paper
- free access to past question papers and mark schemes via the secure website
- direct access to the subject officer
- Exam Results Analysis
- Online Examination Review

## 1.4 Making entries

This is a unitised qualification which allows for an element of staged assessment.

Assessment opportunities will be available in the summer assessment period each year, until the end of the life of this specification.

Unit 1 and Unit 2 will be available in 2023 (and each year thereafter) and the AS qualification will be awarded for the first time in summer 2023.

Unit 3 and Unit 4 will be available in 2024 (and each year thereafter) and the A level qualification will be awarded for the first time in summer 2024.

Assessment opportunities will be available in May/June each year, until the end of the life of this specification.

A qualification may be taken more than once. However, if any unit has been attempted twice and a candidate wishes to enter the unit for the third time, then the candidate will have to re-enter all units and the appropriate cash-in(s). This is referred to as a 'fresh start'. When retaking a qualification (fresh start), a candidate may have up to two attempts at each unit. However, no results from units taken prior to the fresh start can be used in aggregating the new grade(s).

Marks for either or both of the NEA units may be carried forward for the life of this specification.

If a candidate has been entered for but is absent for a unit, the absence does not count as an attempt. The candidate would, however, qualify as a resit candidate.

	Title	Entry codes	
		English-medium	Welsh-medium
Unit 1	Innovation in Digital Technology	2540U1	2540N1
Unit 2	Creative Digital Practices	2540U2	2540N2
Unit 3	Connected Systems	1540U3	1540N3
Unit 4	Digital Solutions	1540U4	1540N4
AS Digital Technology cash-in		2540QS	2540CS
A level Digital Technology cash-in		1540QS	1540CS

The current edition of our *Entry Procedures and Coding Information* gives up-to-date entry procedures.

## 1.5 Summary of assessment

### AS Units

AS Unit 1: Innovation in Digital Technology	
Written examination: 2 hours	
20% of qualification	80 marks: 100 UMS
An assessment (taken on-screen), comprising of a range of question types to assess specification content related to <i>connected digital systems and smart devices, the development of Artificial Intelligence, digital technology development life cycles, user experience and human computer interaction in digital systems development and the functions, purposes and uses of social media by individuals and organisations.</i>	
All questions are compulsory.	
AS Unit 2: Creative Digital Practices	
Non-exam assessment (NEA): approximately 45 hours	
20% of qualification	80 marks: 100 UMS
A non-examined assessment focussing on the end to end creation of a game. Candidates will investigate, plan, design, create, test and review a game of their choice.	

### A level Units (the above plus a further 2 units)

A2 Unit 3: Connected Systems	
Written examination: 2 hours 30 minutes	
30% of qualification	100 marks: 150 UMS
An assessment (taken on-screen), comprising of a range of question types to assess specification content related to <i>collecting, storing, analysing and using data, cyber security, and digital technology networks.</i>	
All questions are compulsory.	
A2 Unit 4: Digital Solutions	
Non-exam assessment (NEA): approximately 45 hours	
30% of qualification	100 marks: 150 UMS
A non-examined assessment focussing on the creation of a transactional website linked to a server-based RDBMS. Candidates will plan, design, create, develop, review, test and refine a transactional website of their choice.	

## 2. Assessment Overview

Detailed teacher guides and exemplar material for each unit are available from the WJEC website here: <https://www.wjec.co.uk/qualifications/digital-technology-as-a-level>

### 2.1 Unit 1 and Unit 3

#### 2.1.1 Assessment Arrangements

Unit 1 and Unit 3 are on-screen assessment only units. WJEC uses the Surpass platform to administer on-screen examinations. We use the Surpass platform to administer on-screen examinations. The examinations themselves run through our free SecureClient software which will need to be installed on each PC at your centre used for delivering the assessment.

Centres are strongly advised to refer to the e-Assessment page of the WJEC website. <https://www.wjec.co.uk/home/administration/e-assessment/> This will give you full details of how the process works and will link you to the latest information regarding hardware and software requirements.

### 2.2 Unit 2 and Unit 4

#### 2.2.1 Non – examination assessment Arrangements

Unit 2 and Unit 4 are non-exam assessments (NEA) which are internally assessed by the centre and externally moderated by WJEC. The NEA must be conducted in accordance with the JCQ *Instructions for Conducting Non-examination Assessments*, available at [www.jcq.org.uk](http://www.jcq.org.uk).

#### Tasks

The tasks for assessment within Unit 2 and Unit 4 are presented in Appendix B of the specification. Both tasks will remain the same for the lifetime of this specification, to allow scope for learners to focus on an area of particular interest to them.

Teachers should support learners with their choice of context for each task to help ensure learners have an opportunity to access the highest mark bands within the assessment criteria.

Unit 2 and Unit 4 are non-exam assessments (NEA). They are internally assessed by the centre and externally moderated by WJEC. Details on arrangements for NEA are provided by the Joint Council for Qualifications (JCQ). Please refer to the JCQ website, [www.jcq.org.uk](http://www.jcq.org.uk) for further information.

### **Preparation for NEA**

NEA tasks may be completed and assessed at any suitable time during the course. However, centres need to ensure they have delivered the content needed for candidates to be able to access marks allocated to all aspects of the relevant NEA.

Before the course starts, the teacher is responsible for informing candidates of WJEC's regulations concerning malpractice. Candidates must not take part in any unfair practice in the preparation of work for GCE Digital Technology.

Candidates must understand that information from published sources must be referenced. They should be given guidance on setting out references and be aware that they must not plagiarise other material. They should know that to present material copied directly from books or other sources without acknowledgement will be regarded as deliberate deception. Centres must report suspected malpractice to WJEC.

It is important that NEA activity is monitored by centres to ensure that candidates' work is their own. All candidates are required to sign that the work submitted is their own and teachers are required to confirm that the work is solely that of the candidate concerned and was conducted under the required conditions.

Candidates must not work together on either of their NEA tasks.

### **Time available for NEA**

Learners should spend approximately 45 hours on their NEA task for Unit 2 and approximately 45 hours on their NEA task for Unit 4. These times refer to work completed under direct supervision in the classroom.

The NEA tasks do not have a required or recommended length in words or pages.

### Supervision and Monitoring of NEA

- Once the NEA is underway, candidates' work must be monitored to mitigate the risks of malpractice taking place.
- The teacher should be sufficiently aware of the candidate's standard and level of work to be able to identify if the NEA submitted appears to be beyond that candidate's talents.
- In most centres teachers are familiar with candidates' work through class and homework assignments. Where this is not the case, teachers should require NEA to be completed under direct supervision.
- In all cases, some direct supervision is necessary to ensure that the coursework submitted can be confidently authenticated as the candidate's own.
- During their NEA, the use of resources, including the Internet, is not tightly prescribed and candidates may have access to such resources. However, the centre **must** ensure that:
  - there is sufficient supervision of every candidate to enable work to be authenticated
  - the work that an individual candidate submits for assessment is their own.
- Teachers may provide guidance and support to candidates to ensure that they have a clear understanding of the requirements of the NEA tasks, the assessment and the associated marking criteria.
- Teachers may advise candidates on the suitability of the context chosen for their NEA work, with regard to the opportunity for the resulting work to address all relevant assessment requirements. Once work is underway, feedback must be limited to general advice on what needs to be improved. Teachers must not provide specific guidance on how to make these improvements.
- 'General advice' in the context of GCE Digital Technology NEA includes:
  - ensuring that candidates understand the requirements of the relevant task, including the required outcome and the time available
  - ensuring that candidates' choice and scope of NEA task/context has the potential to meet the requirements of the marking criteria and be of sufficient demand to achieve marks from the highest bands
  - providing guidance on the safe use of equipment and materials, and the ICT hardware and software available to candidates undertaking NEA activities.
- Within the context of 'general advice' teachers are **not allowed** to:
  - give a candidate detailed advice and take the lead through the NEA process
  - specify the context for the NEA activity, it must be the candidate's own decision
  - correct or modify a candidate's work
  - give specific direction to a candidate in order to achieve higher marks
  - produce any form of writing frame for use within NEA activities.
- Candidates are allowed access to resources which may include information gathered outside of school/college, for example as part of their investigation or research activities.
- Once the task is finished and the final assessment made, no further amendments may be made.

The time spent working on each NEA task during timetabled sessions should be recorded by the teacher as a log and this may be requested by WJEC in addition to the work submitted for moderation. The log should be monitored by the centre to ensure that candidates spend approximately 45 hours on each of their relevant NEA tasks for both Unit 2 and Unit 4.

### **Authentication**

It is important that NEA work is monitored by centres to ensure that candidates' work is their own. Centres should monitor candidates' work by:

- carefully considering whether the evidence submitted is characteristic of the candidates' ability/attainment
- keeping work secure in the centre once the evidence is handed in
- ensuring work is not returned to the candidate to make changes.

### **References**

References to sources of information used in NEA tasks must be acknowledged. This can be through an appended bibliography using a conventional in-text referencing system, or through footnotes.

Unit 2 and Unit 4 are non-exam assessments (NEA). They are internally assessed by the centre and externally moderated by WJEC. Details on arrangements for NEA are provided by the Joint Council for Qualifications (JCQ). Please refer to the JCQ website, [www.jcq.org.uk](http://www.jcq.org.uk) for further information.

### **Evidence to be submitted**

Teachers must confirm that all of the work submitted for assessment was completed under the required conditions and that they are satisfied the work is solely that of the individual candidate concerned.

All teachers must sign the declaration of authentication after the work has been completed.

#### Unit 2

A game project completed by the candidate, as detailed in the specification, a mark sheet completed by the assessor, signed declarations of authentication (by the teacher and the candidate) submitted to the moderator.

#### Unit 4

A transactional website project completed by the candidate, as detailed in the specification, a mark sheet completed by the assessor, signed declarations of authentication (by the teacher and the candidate) submitted to the moderator.

NEA coversheets must be completed for all candidates, not just those selected for moderation. The forms can be downloaded from WJEC's secure website.

### **Security of candidates' work**

Candidates' work **must** be kept securely until the deadline for a review of moderation has passed or until a review of moderation or appeal or malpractice investigation has been completed, whichever is the later.

### 3. Course Outline

The following are suggested timings based on the number of guided learning hours and the proportion of marks allocated to each section. The assumption here is that candidates have experience of the software being used. If that is not the case centres should factor that into their teaching time.

#### 3.1 Timings

##### 3.1.2 Unit 1

Unit 1 is the examined unit of the AS qualification and is quite extensive. It is recommended that centres spend at least 75 hours teaching this unit.

Please refer to the Unit 1 Guidance for Teaching document for further information.

##### 3.1.3 Unit 2

The Unit 2 NEA is recommended to be taken over 45 hours. Based on the distribution of marks it is suggested that candidates should spend approximately the time shown in the table below for each task:

Section	Marks	Timing
Investigating games	8	4.5 hours
Planning games	8	4.5 hours
Making informed design decisions	12	7 hours
Creating games	20	11 hours
Testing and developing games	15	8 hours
Refining and reviewing games	12	7 hours
Presenting outcomes	5	3 hours

Please refer to the Unit 2 Guidance for Teaching document for further information.

### 3.1.4 Unit 3

Unit 3 is the examined unit of the A level qualification and is quite extensive. It is recommended that centres spend at least 75 hours teaching this unit.

Please refer to the Unit 3 Guidance for Teaching document for further information.

### 3.1.5 Unit 4

The Unit 4 NEA is recommended to be taken over 45 hours. Based on the distribution of marks it is suggested that candidates should spend approximately the time shown in the table below for each task:

Section	Marks	Timing
Investigating transactional websites	15	7 hours
The design of a transactional website	15	7 hours
The capture, storage and processing of data	15	7 hours
The use of RDBMS database systems, scripting languages and SQL	15	7 hours
Developing and reviewing a transactional website	20	9 hours
Testing and refining a transactional website	10	4 hours
Evaluating a transactional website	5	2 hours
Presenting outcomes	5	2 hours

Please refer to the Unit 4 Guidance for Teaching document for further information.

## 3.2 Approaches

There are a number of different approaches to completing this work that centres may wish to use. The following are suggestions for how this could be done. Consideration could be given to having a mix of these methods.

### 1. 'Chunking' the work over multiple sessions.

This approach would involve setting aside time within the curriculum for candidates and all work would be conducted during these sessions. (Sessions of say blocks of 3 hours each week are run over a 10 week period each year).

#### Advantages of this method

- The task is completed in a defined time period and this may improve manageability in terms of tracking of time
- Skills for different sections can be taught discretely in lessons between test sessions
- Candidates may research as homework in the time between tasks.

#### Disadvantages of this method

- Requires curriculum rearrangement
- Candidates missing days where test sessions are being conducted will lose significant blocks of time and this will require rearrangement
- Candidates missing teaching sessions between NEA sessions will be under-skilled.

## 2. Running the task in normal lesson sessions

This would involve teaching skills relevant to the task and then switching to NEA conditions once candidates had been taught. For example, teaching the concepts of website design for 30 minutes then all candidates to perform their NEA work for the next 30 minutes once candidates had been taught the concepts required to tackle the task.

The lessons tasks must not be drawn directly from the released task, and only the skills required should be taught prior to commencement of the NEA.

### Advantages of this method

- Does not require curriculum rearrangement
- Skills for individual sections can be taught discretely between test sessions.
- Candidates may research as homework in the time between tasks.

### Disadvantages of this method

- Difficult to track time, as the time candidates are active on the NEA should be tracked in terms of the minutes spent (as the time on task may be a subset of a lesson (e.g. 30 minutes)
- The methodology can result in candidates relying on short term memory which will impact their understanding
- Fragmented delivery will impact candidates being able to see the bigger picture in the development of the project which may result in weaker or disjointed planning, implementation and evaluations.



Fig. 2

## WJEC RESOURCES

Resources available on the WJEC website: [WJEC GCE Digital Technology website](#)

**GCE Digital Technology Specification**

**Sample Assessment Materials (online version)**

**Sample Assessment Materials (paper version)**

**Guidance for Teaching resources**

WJEC Online Exam Review: [WJEC OER website](#)

## IMPORTANT DATES

<b>First Teaching of GCE Digital Technology</b>	September 2022
<b>First Entries for AS Digital Technology</b>	February 2023
<b>First Examination for Unit 1 GCE Digital Technology</b>	May/June 2023
<b>First Submission of NEA for Unit 2 GCE Digital Technology</b>	May 2023
<b>First Entries for A Level Digital Technology</b>	February 2024
<b>First Examination for Unit 3 GCE Digital Technology</b>	May/June 2024
<b>First Submission of NEA for Unit 4 GCE Digital Technology</b>	May 2024
<b>First Resit for Unit 1 Digital Technology</b>	May/June 2024
<b>First Certification for AS Digital Technology</b>	August 2023
<b>First Resit for Unit 3 Digital Technology</b>	May/June 2024
<b>First Certification for A level Digital Technology</b>	August 2024

## KEY CONTACTS

Contact our specialist Subject Officer and administrative support team for digital technology with any queries:

**Andy Parker** Subject Officer

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### Acknowledgements

Fig.1: Image by [Gerd Altmann](#) from [Pixabay](#)

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