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Llywodraeth Cymru
Welsh Government

Welsh Apprenticeship Pathway

Software Developer

The content of this Pathway has been agreed by ODAG Consultants Ltd. This is the only Apprenticeship Pathway for Software Developer approved for use in Wales that is eligible for Welsh Government funding.

More Information can be obtained from:

FEAD DfES • Ty Afon
Bedwas Rd • Bedwas
Cf838WT

DfES-ApprenticeshipUnit@gov.wales
Gwefan • website: www.llyw.cymru
www.gov.wales

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LEARNING PROGRAMME CONTENT

The Learning Programme provision shall comprise of three mandatory elements:

- Qualifications,
- Essential Skills
- On/off the job training

The total minimum credit value required for the Level 3 Software Developer is 79 credits.

The total minimum credit value required for the Level 4 Software Developer is 111 credits.

ENTRY REQUIREMENTS

There are no specific entry requirements for this framework.

It is, however, recommended that to enter onto the Level 3 Apprenticeship the candidate has English and Maths GCSE's grade C or above (or equivalent qualifications) and for the Level 4 Apprenticeship, most employers will require good (A*-C) GCSE passes in English and Maths as a minimum for entry into a software developer job role. However, these recommendations are not essential.

Applicants may have prior experience or qualifications in digital technologies but this is not mandatory as training providers and employers will deliver programmes of training based on approved up to date qualifications tailored to meet individual needs, recognising prior qualifications and experience.

APPRENTICESHIP PATHWAY LEARNING PROGRAMME(S)

Level 3: Software Developer

Qualifications

Participants must achieve the following combined qualifications below.

Agored Cymru Level 3 Diploma in Software Developer					
Awarding Body	Qualification No.	Credit Value	Total Qualification Time	Competence / Knowledge / Combined	Qualification Assessment Language(s)
Agored Cymru	C00/4810/0	79	790 hours	Combined	English-Welsh

Essential Skills Wales (ESW)

Essential Skills Wales qualifications assessment languages are English-Welsh

Level 3: Software Developer	Level	Minimum Credit Value
Communication	2	6
Application of Number	2	6

On/Off the Job Training

Pathway	Minimum On the Job Training Hours	Minimum Off the Job Training Hours
Level 3: Software Developer	380	278

On/Off the Job Qualification details (Minimum Credit & Hours)

Combined qualification - 79 credits, 380hours GLH

On/Off the Job Essential Skills details (Minimum Credit & Hours)

- 6 credits / 60 GLH Level 2 Essential Skills Wales Communication
- 6 credits / 60 GLH Level 2 Essential Skills Wales Application of Number

Level 4: Software Developer

Qualifications

Participants must achieve the following combined qualifications below.

Agored Cymru Level 4 Diploma in Software Developer					
Awarding Body	Qualification No.	Credit Value	Total Qualification Time	Competence / Knowledge / Combined	Qualification Assessment Language(s)
Agored Cymru	C00/4810/1	111	1110 hours	Combined	English-Welsh

Essential Skills Wales (ESW)

Essential Skills Wales qualifications assessment languages are English-Welsh

Level 4: Software Developer	Level	Minimum Credit Value
Communication	3	6
Application of Number	3	6

On/Off the Job Training

Pathway	Minimum On the Job Training Hours	Minimum Off the Job Training Hours
Level 4: Software Developer	480	417

On/Off the Job Qualification details (Minimum Credit & Hours)

Combined qualification - 111 credits, 521 hours GLH

On/Off the Job Essential Skills details (Minimum Credit & Hours)

- 6 credits / 60 GLH Level 3 Essential Skills Wales Communication
- 6 credits / 60 GLH Level 3 Essential Skills Wales Application of Number

OTHER ADDITIONAL REQUIREMENTS

N/A

JOB ROLES

As organisations in Wales undertake digital transformation of many processes, the software development skills required to support these are becoming ubiquitous across many sectors. There is an increasing need to address the skills gap in software developers in Wales and attract new entrants into these roles. These Software Developer apprenticeships provide a route to develop and embed software development and testing skills through on-the-job vocational learning to measurably improve individual and organisational software production capabilities.

These apprenticeships support Mission 1 of the 2021 Digital Strategy for Wales to 'Deliver and modernise services so that they are designed around user needs and are simple, secure and convenient'. They align with the specific outcomes:

- current systems, platforms and services are developed to be built on modern and secure technology, are designed around user needs, and developed openly through modern ways of working.
- transform our approach to developing digital solutions in the public sector to more open and agile ways of working

According to Careers Wales Approximately 7500 people are employed as Software Developer and related jobs in Wales (2022). The expected future demand for Software Developer and related jobs is high compared to other jobs in Wales.

Level 3: Software Developer

The Level 3 Software Developer Apprenticeship has been designed with employers in Wales to equip employees with the primary software development skills that they need to be able to perform their role. This Apprenticeship programme is designed to provide a robust vocational route to fulfilling junior software developer skills needs that are integral for employees to take full advantage of opportunities in the workplace.

Junior software developer roles covered by this framework could be within:

- Specialist software development organisations delivering software services to clients.
- Software development functions of private and public sector organisations requiring internal and external facing software applications to be developed across web and mobile platforms.

Job title(s)	Job role(s)
Junior software developer	A junior software developer assists with developing and improving software solutions to meet customer requirements. They use industry standard software development languages, tools and methodologies.
Junior software tester	A Junior Software Tester reviews requirements and specifications to define test conditions, design and build test cases and interpret and execute test scripts.

Level 4: Software Developer

The Level 4 Software Developer Apprenticeship has been designed with employers in Wales to equip employees with the primary software development skills that they need to be able to perform their role. This Apprenticeship programme is designed to provide a robust vocational route to fulfilling software developer skills needs that are integral for employees to take full advantage of opportunities in the workplace.

Software developer roles covered by this framework could be within:

- Specialist software development organisations delivering software services to clients.
- Software development functions of private and public sector organisations requiring internal and external facing software applications to be developed across web and mobile platforms.

Job title(s)	Job role(s)
Software developer	A software developer reviews requirements, plans, designs, builds and tests high quality code. They take on responsibility for the straightforward elements of software projects.
Software tester	A Software Tester creates test cases using in-depth technical analysis of both functional and non-functional specifications. They specify requirements for the test environment, data, resources and tools and design and produce re-usable test scripts. They execute tests and report the outcomes to stakeholders.

PROGRESSION

Progression routes into the Level 3 Apprenticeship:

This can be from a variety of routes including directly from school or college with the suggested level of academic qualifications including:

- GCSE, Welsh Baccalaureate Qualification Intermediate
- GCE AS and A Level, Welsh Baccalaureate Qualification Advanced
- General or vocational qualifications related to the digital or creative industries

Or as career development in an appropriate role with suitable qualifications or recognition of prior learning and experience.

Progression from the Level 3 Apprenticeship:

The Level 3 software developer apprenticeship offers successful apprentices the opportunity to further progress in their studies to the level 4 software developer apprenticeship and the degree apprenticeship in software engineering. They can also progress within their job role and pursue their learning by undertaking additional vendor qualifications in programming languages, tools and techniques related to software development and testing.

Progression routes into the Level 4 Apprenticeship:

This can be from a variety of routes including directly from school or college with the suggested level of academic qualifications including:

- GCSE, Welsh Baccalaureate Qualification Intermediate
- GCE AS and A Level, Welsh Baccalaureate Qualification Advanced
- General or vocational qualifications related to the digital or software industries

Or as career development in an appropriate role with suitable qualifications or recognition of prior learning and experience.

Progression from the Level 4 Apprenticeship:

The Level 4 software developer apprenticeship programmes offer successful apprentices the opportunity to further progress in their studies and specialise. They can progress to the degree apprenticeship in software engineering. They can also progress within their job role and pursue their learning by undertaking additional vendor qualifications in programming languages, tools and techniques related to software development and testing.

EQUALITY & DIVERSITY

It is important that apprenticeship Pathways are inclusive and can demonstrate an active approach to identifying and removing barriers to entry and progression. Pathways should advance equality of opportunity between persons who share protected characteristics and those persons who do not as identified in the Equality Act 2010.

The protected characteristics identified in the Equality Act are age, disability, gender re-assignment, race, religion or belief, sex, sexual orientation, pregnancy and maternity. Marriage and civil partnership is also included although only in respect of the requirement to eliminate discrimination in employment.

Training providers and employers MUST also comply with the other duty under the Equality Act 2010 to ensure that applicants are not discriminated against in terms of entry to the industry based upon those nine protected characteristics.

EMPLOYMENT RESPONSIBILITIES AND RIGHTS (ERR)

Employment Responsibilities and Rights (ERR) is no longer compulsory. But it is recommended that all apprentices (especially the 16 years -18-year group) receive a company induction programme.

RESPONSIBILITIES

It is the responsibility of the Training Provider and Employer to ensure that the requirements of this pathway are delivered in accordance with the Welsh Government Apprenticeships Guidance.

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RESPONSIBILITIES

It is the responsibility of the Training Provider and Employer to ensure that the requirements of this pathway are delivered in accordance with the Welsh Government Apprenticeships Guidance.

Further information may be obtained from:

Welsh Government

DfES-ApprenticeshipUnit@gov.wales

Annex 1 - Level 3: Software Developer Qualification Units

Agored Cymru Level 3 Diploma in Software Developer

This combined qualification contains 67 credits from mandatory units together with a minimum of 12 credits from optional units.

Mandatory and optional units

Unit Title	Level	Credits
Mandatory units: Minimum credits required: 67		
Health and Safety in an IT Context	Three	6
Principles of Secure System Development	Three	6
Software Design	Three	6
Professional Practice in an IT Context	Three	6
Improving Existing Software	Three	6
Software Testing	Three	17
Computer Coding	Three	20

Optional units: Minimum credits required: 12		
Investigating and Defining Customer Requirements for ICT Systems	Four	15
Testing the Security of Information Systems	Four	15
Database Software	Three	6
Create Data-Driven Applications	Four	15
IT & Telecom System Security 2	Three	8
Manage an IT Application Project†	Three	8
Database Applications	Three	8
Testing the Security of Information Systems	Three	12
IT System Operation	Three	12
Remote Support for IT Products and Services	Three	9
IT System Management	Three	12
Investigating and Defining Customer Requirements for IT Systems	Three	12
IT Fault Diagnosis	Three	10

Remote Support for IT Products and Services	Four	12
Integrated Development and Operations (DevOps)	Three	11
User Centred Development (UX)	Four	12
User Centred Development (UX)	Three	7
Integrated Development and Operations (DevOps)	Four	15

Annex 2 - Level 4: Software Developer Qualification Units

[Agored Cymru Level 4 Diploma in Software Developer](#)

This combined qualification contains 84 credits from mandatory units together with a minimum of 27 credits from optional units.

Mandatory and optional units

Unit Title	Level	Credits
Mandatory units: Minimum credits required: 84		
Professional Practice in an IT Context	Four	11
Software Design	Four	10
Principles of Secure System Development	Four	7
Health and Safety in an IT Context	Three	6
Improving Existing Software	Four	10
Software Testing	Four	30
Software Development	Four	10

Optional units: Minimum credits required: 27		
Investigating and Defining Customer Requirements for ICT Systems	Four	15
Testing IT & Telecoms Systems	Four	15
Testing the Security of Information Systems	Four	15
Database Software	Three	6
Create Data-Driven Applications	Four	15
IT & Telecom System Security 2	Three	8
IT System Operation 2	Four	14
Manage an IT Application Project†	Three	8
Database Applications	Three	8

<u>Testing the Security of Information Systems</u>	Three	12
<u>IT System Operation</u>	Three	12
<u>Remote Support for IT Products and Services</u>	Three	9
<u>IT System Management</u>	Three	12
<u>Investigating and Defining Customer Requirements for IT Systems</u>	Three	12
<u>IT Fault Diagnosis</u>	Three	10
<u>IT System Security</u>	Four	12
<u>Remote Support for IT Products and Services</u>	Four	12
<u>Integrated Development and Operations (DevOps)</u>	Three	11
<u>User Centred Development (UX)</u>	Four	12
<u>User Centred Development (UX)</u>	Three	7
<u>Integrated Development and Operations (DevOps)</u>	Four	15