



**Institute for Apprenticeships
& Technical Education**

Higher technical qualification submission form

Awarding body information

Awarding body information

What is the name of the awarding body?

Grimsby Institute of Further and Higher Education

Is the awarding body a higher education provider?

Yes

Is the awarding body on the Office for Students register?

Yes

Qualification information

Qualification information

You can only submit one qualification for each form. If you are submitting multiple qualifications you must start a new form for each qualification. Please include the name of the qualification as it appears on Ofqual register or UCAS. Include the size of the qualification. e.g. award, certificate, diploma

What is the name of the qualification?

FdSc Software Development

Is the qualification on the Ofqual register?

No

If the qualification is not regulated by Ofqual, the organisation owning the qualification must be OfS regulated. This is typically the case of qualifications from Higher Education Providers. For organisations which are Ofqual regulated, the specific qualification must be on the Ofqual register for the application to be progressed. The form will not prevent continuing if this is not completed, but your application cannot be progressed by the approval managers following submission if the awarding organisation is regulated by Ofqual but the qualification is not.

What is the level of the qualification?

Level 5

Route and occupational standards

Route and occupational standards

Awarding bodies must demonstrate that a qualification will enable a person to demonstrate that they have attained as many of the knowledge, skills and behaviours set out in the standard as may be reasonably

expected by undertaking a course of education.

Please note:

- Qualifications will only be considered for approval against occupational standards approved by the Institute.

If qualifications have optional units or pathways, we will only approve qualifications where every possible combination of units/ pathways ensures that a learner achieves competence in at least one occupation for which there is a standard. Qualifications with optional units that do not ensure this should be redesigned or remove optional units that do not align to occupations.

Awarding bodies must fill out all sections of this form. They must also submit supporting documentation to provide evidence of the following:

- The content of the qualification (for example, the specification of content)
- Evidence of employer engagement in the development and validation of the qualification (for example this could be within the qualification design and validation documentation that was used through the development of the qualification which evidences where and how employers were involved)

Which route does the qualification fall under?

Digital

Which occupational standards are aligned to the qualification?

Software developer/Level: 4

Attach documents

Please attach the following documents:

- The content of the qualification (for example, the specification of content)
- Evidence of employer engagement in the development and validation of the qualification (for example this could be within the qualification design and validation documentation that was used through the development of the qualification which evidences where and how employers were involved)

Software developer

Software developer

Knowledge, skills and behaviours coverage within the qualification

Please identify which knowledge, skill and behaviour statements from the occupational standard are covered within the qualification.

Where knowledge, skill and behaviour statements are covered, please provide a reference to the qualification content. This should be a unit or module reference along with associated page/paragraph/line numbers (as appropriate) in the attached specification. Please be as specific as possible which content in the qualification aligns to the statement in the standard.

Where knowledge, skill or behaviour statements are partially covered or not covered, you will be asked to provide a rationale for the exclusion of this content from the qualification. The employer engagement evidence provided should support this rationale.

The following questions assess how knowledge, skill and behaviour statements from the occupational standards are covered within the qualification.

This page has automatically generated an item for each knowledge, skill and behaviour statement (KSB) contained within the chosen standard. So please do not remove or add any further KSBs, as it requires the exact number.

KSBgenerator

KSB

KSB 1

K1 All stages of the software development life cycle (what each stage contains, including the inputs and outputs).

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

Page 14, software development lifecycle, along with teaching materials.

KSB 2

K2 Roles and responsibilities within the software development lifecycle (who is responsible for what).

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

Page 14, software development lifecycle, along teaching materials.

KSB 3

K3 The roles and responsibilities of the project life cycle within your organisation, and your role.

Is the statement covered within the qualification?

Partially covered

Where within the qualification is the statement covered?

Page 14, software development lifecycle, along teaching materials.

Please provide an explanation for the omission or partial coverage of this statement from the qualification.

covered within the module, will add as an amendment to better align to the PLC and further reference.

KSB 4

K4 How best to communicate using the different communication methods and how to adapt appropriately to different audiences.

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

page 10, rationale, learning outcomes

page 12 theoretical elements of module

KSB 5

K5 The similarities and differences between different software development methodologies, such as agile and waterfall.

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

page 14 rationale, paragraph 2

page 34 rationale

page 44 indicative content, systems development life cycle

KSB 6

K6 How teams work effectively to produce software and how to contribute appropriately.

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

page 16 theoretical content

page 24 theoretical content

KSB 7

K7 Software design approaches and patterns, to identify reusable solutions to commonly occurring problems.

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

page 36 theoretical content, resource types
page 14 rationale, distinctive features
page 16 theoretical module

KSB 8

K8 Organisational policies and procedures relating to the tasks being undertaken, and when to follow them. For example, the storage and treatment of GDPR sensitive data.

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

page 8 ethical issues, paragraph 1, also ethical issues for each further module
page 20 - theoretical modules

KSB 9

K9 Principles of algorithms, logic and data structures relevant to software development for example: arrays, stacks, queues, linked lists, trees, graphs, hash tables, sorting algorithms, searching algorithms, critical sections and race conditions.

Is the statement covered within the qualification?

Partially covered

Where within the qualification is the statement covered?

page 16 practical elements, data structures

Please provide an explanation for the omission or partial coverage of this statement from the qualification.

these will be added upon amendment of the introductory programming modules

KSB 10

K10 Principles and uses of relational and non-relational databases

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

page 20 theoretical and practical elements of module

KSB 11

K11 Software designs and functional/technical specifications

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

page 16 theoretical and practical elements
page 15 - project development portfolio

page 36 - both assessment methods, practical content

KSB 12

K12 Software testing frameworks and methodologies

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

page 46, testing methods

page 16, theoretical elements of module

page 35 - learning outcome 4

KSB 13

S1 Create logical and maintainable codes.

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

page 42 - rationale relating to OOP principles

page 45 - theoretical elements relating to OOP

page 16 - practical elements relating to coding standards

KSB 14

S2 Develop effective user interfaces.

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

page 3 - paragraph 4 starting with "all levels"

page 4 - point 9

page 18 - rationale

KSB 15

S3 Link code to data sets.

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

page 18 - learning outcomes, aims and distinctive features

page 20 - theoretical and practical elements

KSB 16

S4 Test code and analyse results to correct errors found using unit testing.

Is the statement covered within the qualification?

Partially covered

Where within the qualification is the statement covered?

page 46, testing methods

page 16, theoretical elements of module

page 35 - learning outcome 4

Please provide an explanation for the omission or partial coverage of this statement from the qualification.

unit testing is content which will be added as minor amendments to the content of modules on this software development degree

KSB 17

S5 Conduct a range of test types, such as Integration, System, User Acceptance, Non-Functional, Performance and Security testing.

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

page 46, testing methods

page 16, theoretical elements of module

page 35 - learning outcome 4

KSB 18

S6 Identify and create test scenarios.

Is the statement covered within the qualification?

Partially covered

Where within the qualification is the statement covered?

page 46, testing methods

page 16, theoretical elements of module

page 35 - learning outcome 4

Please provide an explanation for the omission or partial coverage of this statement from the qualification.

unit testing and test scenarios are areas which will be added as minor amendments to the content of modules on this software development degree

KSB 19

S7 Apply structured techniques to problem solving, can debug code and can understand the structure of programmes to identify and resolve issues.

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

page 46, testing methods

page 16, theoretical elements of module

page 35 - learning outcome 4

page 3 - aims of programme, point 2/3
page 14 - outcome 1, 3

KSB 20

S8 Create simple software designs to effectively communicate understanding of the program.

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

page 14 learning outcomes, page 15 portfolio assessment
page 18 learning outcomes, page 19 methods of assessment
page 34/35 learning outcomes, page 35 methods of assessment
page 42 learning outcomes, page 43 methods of assessment

KSB 21

S9 Create analysis artefacts, such as use cases and/or user stories.

Is the statement covered within the qualification?

Not covered

Please provide an explanation for the omission or partial coverage of this statement from the qualification.

not currently covered but programming modules will be amended in order to allow them to complete these artefacts

KSB 22

S10 Build, manage and deploy code into the relevant environment.

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

page 3 - paragraph 4 starting with "all levels"
page 4 - point 9
page 18 - rationale
practical assessment for each programming module

KSB 23

S11 Apply an appropriate software development approach according to the relevant paradigm (for example object oriented, event driven or procedural).

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

page 14 paragraph 1, learning outcomes
page 15 product development portfolio
page 18 theoretical content
page 44 theoretical content

KSB 24

S12 Follow software designs and functional/technical specifications.

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

page 16 theoretical and practical elements

page 15 - project development portfolio

page 36 - both assessment methods, practical content

KSB 25

S13 Follow testing frameworks and methodologies.

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

page 14 paragraph 1, learning outcomes

page 15 product development portfolio

KSB 26

S14 Follow company, team or client approaches to continuous integration, version and source control.

Is the statement covered within the qualification?

Partially covered

Where within the qualification is the statement covered?

page 3 - paragraph beginning with level 4, and paragraph beginning with all levels

page 4 - point 5

Please provide an explanation for the omission or partial coverage of this statement from the qualification.

- The statement refers to being based in an organisation or workplace

page 34, aims, paragraph 2

page 35, learning outcome 3

KSB 27

S15 Communicate software solutions and ideas to technical and non-technical stakeholders.

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

page 11, methods of assessment, rationale for assessments

page 12 theoretical and practical content relating to presenting information

KSB 28

S16 Apply algorithms, logic and data structures.

Is the statement covered within the qualification?

Partially covered

Where within the qualification is the statement covered?

page 16 practical elements, data structures

Please provide an explanation for the omission or partial coverage of this statement from the qualification.

these techniques will be added via a minor amendment to the introductory programming module and advanced programming module

KSB 29

S17 Interpret and implement a given design whilst remaining compliant with security and maintainability requirements.

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

page 20 - theoretical content relating to physical and logical security design, as well as methods of assessment which relate to design and implementing
page 38 - module relating to security and intrusion prevention

KSB 30

B1 Works independently and takes responsibility. For example, has a disciplined and responsible approach to risk, and stays motivated and committed when facing challenges.

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

relate to subject benchmark statements for computing :6.3, 6.4, 6.5
page 20, theoretical content relating to risks
page 12, theoretical content relating to SWOT and risk assessment

KSB 31

B2 Applies logical thinking. For example, uses clear and valid reasoning when making decisions related to undertaking work instructions.

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

relate to subject benchmark statements for computing :6.3, 6.4, 6.5

KSB 32

B3 Maintains a productive, professional and secure working environment.

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

relate to subject benchmark statements for computing :6.3, 6.4, 6.5

KSB 33

B4 Works collaboratively with a wide range of people in different roles, internally and externally, with a positive attitude to inclusion & diversity.

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

relate to subject benchmark statements for computing :6.3, 6.4, 6.5

KSB 34

B5 Acts with integrity with respect to ethical, legal and regulatory ensuring the protection of personal data, safety and security.

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

relate to subject benchmark statements for computing :6.3, 6.4, 6.5

KSB 35

B6 Shows initiative for solving problems within their own remit, being resourceful when faced with a problem to solve.

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

relate to subject benchmark statements for computing :6.3, 6.4, 6.5

KSB 36

B7 Communicates effectively in a variety of situations to both a technical and nontechnical audience.

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

relate to subject benchmark statements for computing :6.3, 6.4, 6.5

Assessment methods for most modules vary from presentations, demonstrations and written reports,

KSB 37

B8 Shows curiosity to the business context in which the solution will be used, displaying an inquisitive approach to solving the problem. This includes the curiosity to explore new opportunities, and techniques; the tenacity to improve methods and maximise performance of the solution; and creativity in their approach to solutions.

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

relate to subject benchmark statements for computing :6.3, 6.4, 6.5

KSB 38

B9 Demonstrates creativity and tenacity in their approach to solutions and the methods used to come to a solution for example, sees the task through to the end by devising new solutions and despite obstacles and problems along the way.

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

relate to subject benchmark statements for computing :6.3, 6.4, 6.5

KSB 39

B10 Committed to continued professional development.

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

relate to subject benchmark statements for computing :6.3, 6.4, 6.5

Additional occupationally relevant content

Additional occupationally relevant content

Item 1

As well as the content aligned to the knowledge, skills and behaviours in the occupational standard, the qualification can include additional occupationally relevant content which is deemed of value to employers. Awarding bodies are asked to justify any content that does not directly align to the occupational standard, using evidence from employers.

Content should be identified at a unit or modular level and each item should be added separately by using the Add Item button. If the qualification does not include any additional content, please leave this section blank.

Unit or module containing additional content

Please give a short description of the additional content

Where within the qualification is the additional content covered?

Please provide an explanation of how the content is relevant to the occupation, including evidence from employers that supports its inclusion in the qualification.

Assessment methods

Assessment methods

Please confirm that the assessment covers all of the content relevant to the knowledge, skills and behaviours in the occupational standard.

Yes

Please outline the methods used to assess the content and provide a rationale for why these methods are valid for the qualification.

The Web and Application branch in the IT Sector is growing at a remarkable rate. Every week new and innovative solutions to problems and tasks push the boundaries of what computers and connected devices can do and offer.

With this demand for fast thinking and fresh coders it is important for students new to programming to have a higher understanding of coding practices and frameworks than ever before. software development skills to meet business requirements are now compulsory at all levels, not just project managers and lead developers.

This course will allow students to develop their skills and practices via assignment work, lab work and their final major project both to industry/sector and academic standards. Students will acquire and develop techniques for identifying, analysing and testing IT solutions to develop their skills in designing innovative IT solutions.

Students will apply new and modern models, techniques and tools for implementing custom designs of IT solutions and deliver high standard software products for various platforms. Testing skills to meet the ethical and professional standards required by business and the industry will be present throughout the course.

State of the art servers, workstations and accessories, coupled with a wide range of stand-alone platforms like the Raspberry Pi and the inclusion of 'Internet of Things' (IoT) devices, will give students the best start to their programming career, giving them the skills and confidence to code in any environment.

Level 4 will focus on the acquisition of Software fundamentals and requirements. Students will develop fundamental skills in current popular and versatile programming languages such as C#.NET, asp.NET, PHP and Web languages like HTML 5, CSS 3 and JavaScript (to be reviewed and updated in line with industry practice). This coupled with the inclusion of frameworks and repositories/versioning from the start will hone their skills in the modern standards of programming.

Level 5 will focus on the development of skills within business and commercial scenarios with the opportunity to move towards specialism within a specialist project module at the end of level 5.

Students will be involved with practical work, carrying out both individual and team tasks in software development, from analysis and design to implementation, testing and maintenance.

All Levels will incorporate systems analysis and database design, full software development workflow including planning and deployment, making use of frameworks, IDEs and repositories while also maintaining version histories. UX/GUI design will also be a key feature of the programme with students considering principles of 'Human Computer Interaction' (HCI) and the importance of a positive user experience in the design and development of software interfaces and features.

State of the art servers, workstations and accessories, coupled with a wide range of stand-alone platforms like the Raspberry Pi and the inclusion of 'Internet of Things' (IoT) devices, gives the option to develop software from design to full implementation. Students will have access to industry standard infrastructures not only from a user perspective but from that of a service management. This innovative mode of delivery gives students the chance of working in both software and hardware environments creating a more in-depth knowledge comparable to that of senior development roles.

With this in mind much of the programme will include the development of fully functional products for each assessment, building a portfolio of applications and services students can show to potential employers.

It is possible for students to apply to other institutions offering comparable BSc (hons) top up programmes. Many employers both within the computing/ICT sector and other industry/commercial sectors will fully recognise the FdSc award opening up the potential to apply for graduate employment in some cases. Students may also choose to follow up the programme by undertaking professional certification programmes (for example, those offered by CISCO, Microsoft, Adobe, etc.).

Employer engagement

Employer engagement

Please describe how employers and industry practitioners were consulted throughout the development of the qualification, including:

- the process of identifying and recruiting relevant employers
- how employers were involved in the development, review and validation of the qualification materials.

Please describe how employers and industry practitioners were consulted throughout the development of the qualification.

Employers have been engaged throughout the development of this foundation degree, as well as consistently engaged throughout the validation of this foundation degree. Employers have been involved at all stages of the creation of each module of this foundation degree, particularly in the indicative content for each module.