

DEVELOP COMPUTER SOFTWARE

UNIT CODE: SEC/OS/CS/CR/05/6/A

UNIT DESCRIPTION

This unit covers the competencies required to develop computer software. It involves establishing software purpose, analysing software requirements, designing computer software, developing computer software, performing programme testing and maintenance.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT These describe the key outcomes which make up workplace function.	PERFORMANCE CRITERIA These are assessable statements which specify the required level of performance for each of the elements. (<i>Bold and italicised terms are elaborated in the Range</i>)
1. Establish software purpose	1.1 Software are classified according to their functionality. 1.2 Software is determined in line with the scope of the work to be performed. 1.3 Criteria for selection of software is identified based on user requirements and functionality 1.4 <i>Software acquisition methods</i> are established as per the functionality
2. Analyse software requirement	2.1 <i>Software specifications</i> are determined as per their functionality. 2.2 Computer resource requirements are established in line with software requirements 2.3 Source of software installation files is determined according to the platform 2.4 User vendor agreements are identified according to the Installation manual.
3. Design computer software	3.1 Software is designed as per the client's requirement and industry best practice 3.2 Design is performed in line with the scope of the work and complexity of the software 3.3 Software security is considered in the design of the software in line with standard operating procedures 3.4 Software is designed in compatibility with the installation devices 3.5 Required <i>software parameters</i> are set as per the

ELEMENT These describe the key outcomes which make up workplace function.	PERFORMANCE CRITERIA These are assessable statements which specify the required level of performance for each of the elements. <i>(Bold and italicised terms are elaborated in the Range)</i>
	software manual.
4. Develop computer software	4.1 Coding of the software is performed as per the design 4.2 Test and debugging of errors is performed as per the software performance 4.3 Software is developed as per the scope of the task to be handled.
5. Perform programme testing	5.1 Software performance is tested for its functionality as per standard operating procedures. 5.2 Software security test is performed as per the design manual 5.3 Software is tested, and errors debugged as per the standard operating procedure. 5.4 Software configuration is performed as per the set parameters 5.5 Test report is generated as per the test results obtained 5.6 Software auditing is performed for quality assurance in line with industry's best practice 5.7 Software implementation is performed as per the set parameters
6. Perform software maintenance	6.1 Software maintenance schedule is established in line with standard operating procedures 6.2 <i>Software upgrades and modules patches</i> are applied according to the developer's manual 6.3 Software revisions are performed to correspond with functionality changes in line with the organization requirements 6.4 Software monitoring is established in line with industry's best practices

RANGE

This section provides work environment and conditions to which the performance criteria apply. It allows for different work environment and situations that will affect performance.

Variable	Range
----------	-------

Software acquisition methods may include but not limited to:	<ul style="list-style-type: none"> • In – house developed • Tailor made • Outsourced
Software specifications may include but not limited to:	<ul style="list-style-type: none"> • Usually has the following characteristics: • Performance rate • Speed • Security • Complete. • Consistent. • Feasible. • Modifiable. • Unambiguous. • Testable

REQUIRED KNOWLEDGE AND UNDERSTANDING

The individual needs to demonstrate knowledge and understanding of:

<ul style="list-style-type: none"> • Operating systems • Types of operating systems • Software security • Software development life cycle • Relevant organization ICT policy • Software installation legal requirements • Types of software installation • Types of Software testing • Software installation techniques • Software Upgrading and Patching • Software Acquisition Methods • Software Maintenance Procedures
--

FOUNDATION SKILLS

The individual needs to demonstrate the following foundation skills:
<ul style="list-style-type: none"> • Communications (verbal and written); • Troubleshooting • Problem solving; • Decision making; • Planning; • Report writing;

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and understanding and range.

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Tested software functionality as per standard operating procedures. 1.2 Classified software according to their functionality. 1.3 Established computer resources in line with software requirements 1.4 Designed software as per the client's requirement and standard operating procedures 1.5 Considered software security in the its design 1.6 Performed software coding as per the design 1.7 Audited software quality assurance as per the industry's best practice 1.8 Configured software as per the set parameters and operation manufacturers manuals 1.9 Prepared software maintenance schedule in line with standard operating procedures 1.10 Performed software testing 1.11 User training manuals was prepared according to software functionality.
2. Resource Implications for competence certification	The following resources should be provided: 2.1 Access to relevant workplace where assessment can take place 2.2 Appropriately simulated environment where assessment can take place 2.3 Materials relevant to the proposed activity or tasks
3. Methods of Assessment	Competency may be assessed through: 3.1 Observation with the help of check list 3.2 Practical demonstrations 3.3 Oral Questioning
4. Context of Assessment	Competency may be assessed individually in the actual workplace or a simulated work place setting
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.