T Level Technical Qualification in Digital Support Services

Occupational specialism assessment (OSA)

Network Cabling

Assignment 2

Assignment brief

v1.1: Specimen assessment materials
September 2021
603/6901/2

Internal reference: DSS-0011-01

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Contents

About this assignment

Introduction

This assignment is set by NCFE and administered by your provider within a 2-week assessment window. Your provider will schedule 6 sessions over 3 consecutive days in which you will complete the tasks.

The assignment will be completed under supervised conditions.

You must complete all tasks in this assignment independently. You are required to sign a declaration of authenticity to confirm that the work is your own. This is to ensure authenticity and to prevent potential malpractice and maladministration. If any evidence was found not to be your own work, it could impact your overall grade.

Internet access is **not** allowed.

Take all photographs using the digital camera provided by your provider. Use of mobile phones is **not** permitted.

Timing

You have 12 hours 30 minutes to complete all tasks within this assignment.

It is recommended that you allocate your time to the tasks as follows:

Task 1 = 9 hours

Task 2 = 3 hours 30 minutes

However, it is up to you how long you spend on each task, therefore be careful to manage your time appropriately.

Marks available

Across all assignment 2 tasks: 44 marks

Details on the marks available are provided in each task.

You should attempt to complete all of the tasks.

Read the instructions provided carefully.

Submit all evidence in .pdf format using the file naming convention.

Surname_Initial_student number_evidence reference

For example Smith_J_123456789_Task 1

Performance outcomes

Marks will be awarded against the skills and knowledge performance outcomes (POs) as follows:

Task 1

(32 marks)

PO1: Apply procedures and controls to maintain the digital security of an organisation and its data (12 marks)

PO2: Install and test cabling in line with technical and security requirements (20 marks)

Task 2

(12 marks)

PO1: Apply procedures and controls to maintain the digital security of an organisation and its data (8 marks)

PO2: Install and test cabling in line with technical and security requirements (4 marks)

Scenario

You are required to provide the network data installation for a doctors' surgery based in a small, single-storey building.

The building will comprise of a reception area and 3 surgery rooms.

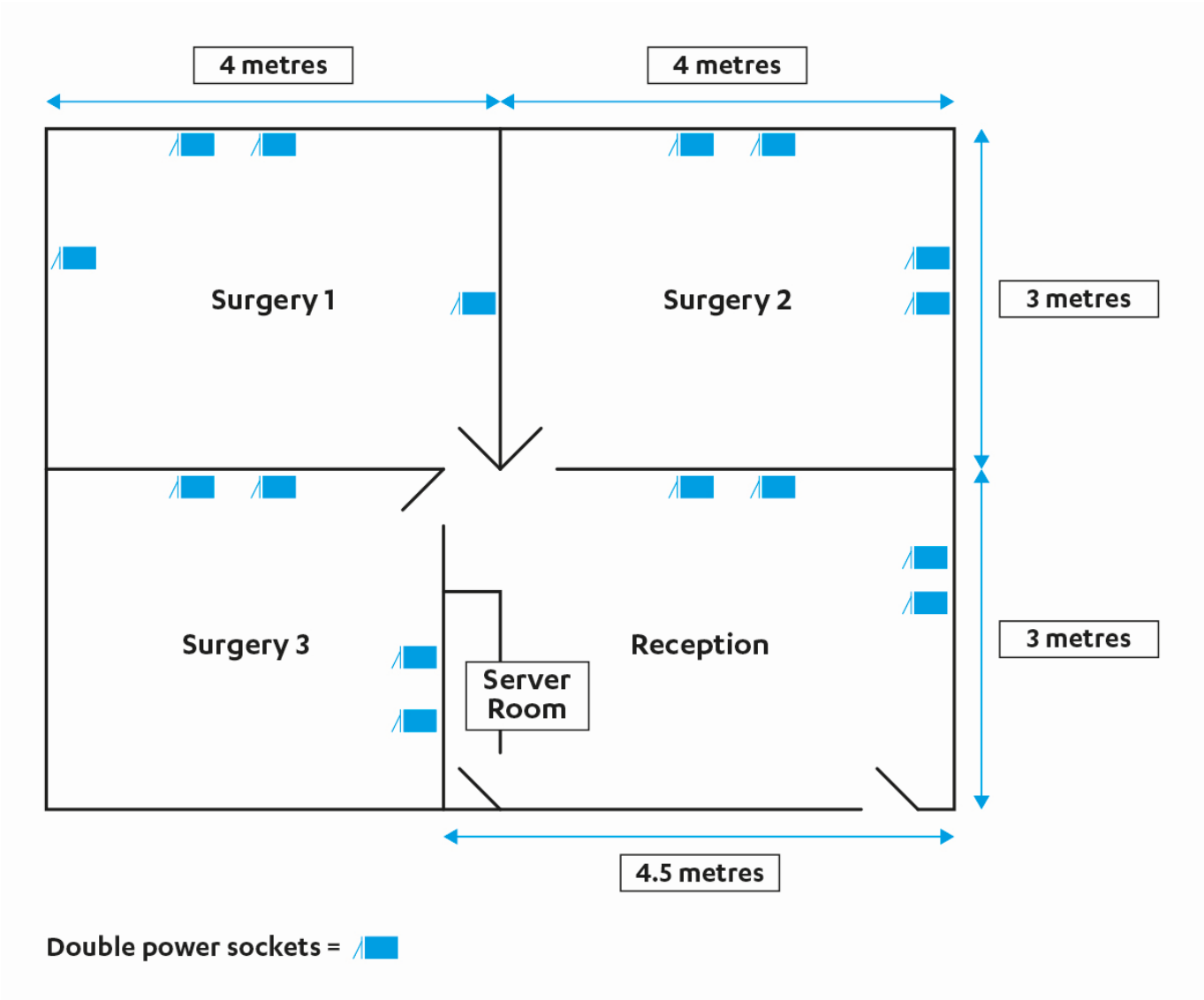
There is an ample supply of power sockets in each surgery room and the reception area.

The needs of the various users are:

- there are 6 doctors working in the practice and all will require access to the network at any time of the day
- doctors will need to be able to access digital medical records which will be stored separately from all other data
- doctors will need to be able to access the digital appointments system
- the 3 reception staff only require access to the booking system and must **not** have access to digital medical records
- the data server room will be located in the reception area
- all doctors and reception staff need access to a network printer

An outline plan of the surgery (image A) is provided on the next page.

Image A


4 metres
4 metres
Surgery 1
Surgery 2
3 metres
Surgery 3
Server Room
Reception
3 metres
4.5 metres
Double power sockets =

Task 1: install the cabling system

Time limit

12 hours 30 minutes to complete task 1 and task 2

(32 marks)

You need to install part of the cabling system for the doctors' surgery, in line with the details given in the bulleted list below.

Using the components that you have been provided with, you need to create working cables and install hardware to a standard that will ensure a safe working environment for the end users:

- install 4 wall sockets fitted within trunking; this should be correctly cabled to allow successful data transmission
- the cabling system you installed in the previous point should be terminated at the patch panel and be connected to a switch
- appropriately configure DCHP
- there should also be all the necessary components to allow WiFi access with relevant security controls configured to end user devices
- appropriate application of principles of network security and implementation of a range of security controls when installing the network
- all installed equipment and ports should be labelled
- you are required to adhere to relevant health and safety standards whilst completing the installation, use the correct tools and have the correct PPE (personal protective equipment)
- end user devices capable of wired and wireless connectivity, for example, laptops

For task 1 and task 2 you will have access to the following equipment:

- word processing software
- digital camera
- network cabling
- a supply of RJ45 connectors
- trunking
- wall outlet sockets
- crimper tools
- cable tester
- patch panel
- network switch
- router
- wireless access points (WAPs)
- labelling machine
- appropriate end user devices for testing

Evidence required for submission to NCFE

Photographic evidence of the following, in .pdf format:

- raw materials
- completed cables meeting standard T-568B
- completed wall outlet sockets, including correct labelling
- wall outlet sockets successfully housed in trunking and fixed securely to work area
- cables terminated at the patch panel meeting standard T-568B
- WiFi access configuration settings showing encryption standards used
- safe working environment and PPE to be utilised
- accurate labelling for all components in the installation

Task 2: devise a test plan and test the cabling system

Time limit

12 hours 30 minutes to complete task 1 and task 2

(12 marks)

To provide confidence that the cabling you have installed gives the data transmission capability desired by users, you are required to:

- use a cable tester to check for the successful connectivity and connection speed in all cables and infrastructure you have installed, in accordance with TIA/EIA 568B standards
- ensure successful communication between end devices through wired and wireless connectivity
- troubleshoot any issues encountered, such as latency, jitter, cross talk, media standard compatibility (for example 1000BASE-T) and any other connection issues. If no issues are found this should still be documented in your test plan.
- appropriately test all implemented network security controls
- document the results - connection results should be cross-referenced to devices and media given in the scenario with information relating to the security controls that have been configured
- suggest any appropriate recommendations you feel would improve network security
- use the test plan template provided

Evidence required for submission to NCFE

Completed test results (using provided test plan template) which cover the complete installation and have fully relevant solutions or recommendations to any issues identified, in .pdf format.

Screenshots or photographs of all tests carried out, in .pdf format – these must be cross-referenced to a test in the test plan template

Document information

The T Level Technical Qualification is a qualification approved and managed by the Institute for Apprenticeships and Technical Education.

Owner: Head of Assessment Design

Change History Record

Version	Description of change	Approval	Date of Issue
v1.0	Post approval, updated for publication.		December 2020
v1.1	Branding and formatting final updates. NCFE rebrand.		September 2021