T Level Technical Qualification in Healthcare Science

Occupational specialism assessment (OSA)

Assisting with Healthcare Science

All assignments

Provider guide

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T Level Technical Qualification in Healthcare Science
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Provider guide

All assignments

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Document security

To be opened on **[day of the week] [date] [month] [year]** at **9:00am**, X months prior to the assessment period from **[day of the week] [date] [month] [year]** to **[day of the week] [date] [month] [year]**.

This assessment material must not be shared with students. Any breach of this assessment material must be reported to NCFE immediately in accordance with the assessment regulations found at:

www.qualhub.co.uk/policies-documents/assessment-regulations

Paper number

[paper number]

Introduction

This Assisting with Healthcare Science occupational specialism is assessed synoptically with a suite of 4 assignments. The assignments require the student to independently apply an appropriate selection of knowledge, understanding, skills and techniques developed throughout the full course of study, in response to briefs or tasks, or as part of their industry placement. This will allow the student to demonstrate that they have met a level of threshold competence in the performance outcomes (POs) of the occupational specialism.

The assessment methods vary across the assignments to allow students to demonstrate the knowledge and skills they have acquired throughout their learning and experience.

The assessments' validly and reliably allow the student to be able to demonstrate, at the end of the qualification, the threshold competency gained in order to progress into employment or into higher education.

NCFE provides instructions for each of the assessments and these must be followed by T Level providers.

Essential resources for each assessment, where applicable, must be purchased by the provider prior to the assessments taking place.

The synoptic assessment for this occupational specialism is graded pass, merit or distinction, and the final grade will contribute 50% of the overall technical qualification grade, so it is important that students have the opportunity to produce work of the highest standard they can. The assignments within this synoptic assessment are designed to allow the student to do this in a way that is as occupationally authentic to the roles that they may take on in future employment.

What is threshold competence?

'Threshold competence' is defined as a level of competence that:

a) signifies that a student is well placed to develop full occupational competence, with further support and development, once in employment

b) is as close to full occupational competence as can be reasonably expected of a student studying the technical qualification in a college-based setting with a substantial industry placement

c) signifies that a student has achieved the level for a pass in relation to the relevant occupational specialism component

What is synoptic assessment?

A synoptic assessment is a form of assessment in which students are required to demonstrate that they can identify and use in an integrated way an appropriate selection of skills, techniques, concepts, theories, and knowledge from across the technical area, relevant to the tasks.

Synoptic assessment is integral to high quality technical qualifications to allow students to demonstrate a holistic understanding of the sector, making effective connections between different aspects of the subject content.

The assignments and tasks in this assessment are designed to be synoptic in a way that is as occupationally realistic as possible.

How will students be assessed?

Students will be assessed against the following set of POs that describe what the student should be able to do:

Assisting with Healthcare Science POs	
PO1	Contribute to patient care by supporting physiological, physical and clinical engineering services to produce reliable data and images for use by healthcare professionals in diagnosis and treatment.
PO2	Contribute to patient care by supporting the collection of a range of specimens for analysis to aid diagnosis and treatment.
PO3	Contribute to patient care by processing and analysing service user specimens in a range of life science areas and laboratory environments to produce reliable data sets for use by healthcare professionals in diagnosis and treatment.

The synoptic assessment consists of 4 assignments covering the following areas:

1. observation of physiological measurement skills
2. observation of specimen collection and point of care (POCT) testing skills
3. observation of microscopy and specimen analysis skills
4. analysis and evaluation through extended written responses

Assignments are broken down into tasks where necessary. The assignments, tasks, and further guidance (within this document) for students and tutors show how the assignments are expected to be delivered.

Evidence produced by students for the assignments will be sent to NCFE for marking. Assessment judgements, including overall judgement of the performance required at each of the grade boundaries, will be made by NCFE and results released to the provider at the appropriate time.

Assignment coverage

See section ‘Assignment coverage table’ (page 33) which shows how the PO content is covered by the assignments and tasks.

Marks

Marks available for each assignment are detailed below.

Assignment		Marks	% Weightings
1	Observation of physiological measurement skills	77	27%
2	Observation of specimen collection and point of care testing (POCT) skills	100	20%
3	Observation of microscopy and specimen analysis skills	94	26%
4	Analysis and evaluation through extended written responses	80	27%
	Total	**351 marks***	**100%**

*The raw marks will be scaled to ensure that the intended weightings of each assignment are met. The scaling factors for each assignment can be found in the qualification specification.

Assessment windows and dates

Assignment 1 consists of a single direct observation of skills which will take place at the provider. Assignment 1 will be available to the provider as an assessment sat during a window, set between 1 March and 30 April each year.

A submission deadline for the evidence for assignment 1 will be set for each academic year to allow NCFE to carry out remote moderation and awarding before the release of results in August of that year.

Assignment 2 consists of a single direct observation of skills which will take place at the provider. Assignment 2 will be available to the provider as an assessment sat during a window, set between 1 March and 30 April each year.

A submission deadline for the evidence for assignment 2 will be set for each academic year to allow NCFE to carry out remote moderation and awarding before the release of results in August of that year.

Assignment 3 consists of a single direct observation of skills which will take place at the provider. Assignment 3 will be available to the provider as an assessment sat during a window, set between 1 March and 30 April each year.

A submission deadline for the evidence for assignment 3 will be set for each academic year to allow NCFE to carry out remote moderation and awarding before the release of results in August of that year.

Assignment 4 will be available as a dated assessment, set between 1 March and 30 April each year at a time set by NCFE. All students must sit the assignment on this date at the same time. Evidence for assignment 4 must be returned to NCFE for marking after completion.

All evidence created, generated and recorded for these assignments, is subject to data protection rules, and information should be anonymised to protect the rights of individuals where relevant.

General

The term ‘synoptic assessment’ refers to the combination of the 4 assignments in this occupational specialism.

The term ‘assessment’ is used in the same way as ‘assignment’ but will often refer to specific properties of the assignment.

Guidance for tutors

The following synoptic assessment, comprised of 4 assignments, has been designed to test to what extent a student can meet the skills and underpinning knowledge required to achieve threshold competence as a healthcare science assistant.

The guidance below explains the nature and purpose of this assessment and should be used alongside the general guidance provided in this document, the qualification specification and live assessment materials (once available).

This assessment consists of:

- assignment 1: observation of physiological measurement skills
    - task 1: assist with physiological measurements
- assignment 2: observation of specimen collection and point of care testing (POCT) skills
    - task 1: assist with specimen collection and point of care test (POCT)
    - task 2: carry out point of care test (POCT)
- assignment 3: observation of microscopy and specimen analysis skills
    - Task 1: microscopy - Gram stain
    - Task 2: specimen analysis - blood
- assignment 4: analysis and evaluation through extended written responses

This synoptic assessment must be completed for a student to achieve the T Level Technical Qualification in Healthcare Science with the Assisting with Healthcare Science occupational specialism.

Purpose

Assignment 1 is designed to assess important aspects of a student's achievement. It assesses the student's level of attainment against the important skills in performance outcome 1 of this technical qualification, and contributes, along with assignments 2, 3 and 4, to the student's overall grade.

Provider appointed assessors

Each provider appointed assessor should be qualified to the level of the qualification they are assessing or above and have been trained and standardised as per the requirements of the technical qualification.

Remote moderation and the recording of observations

Assignments 1, 2 and 3 are marked by the provider, and moderated remotely by NCFE. These are detailed below.

Moderators will access students' evidence for each of the above assignments as well as an audio/visual recording of the observation in order to carry out moderation activities. The moderator will make assessment judgements, including the allocation of marks for each of assignments 1, 2 and 3, using the same methods as the provider. All records and findings will be documented separately to the provider's assessor, to ensure that the 2 sets of findings can be reliably compared.

In addition, moderators will also review records of observations taken by the provider during the visit to ensure that sufficient detail is being captured to support robust and reliable remote moderation and review of assessment.

NCFE will deliver standardisation sessions for approved providers, to establish a consistent standard for the assessment per series. In each session, the same materials will be used by the providers and the moderation team, which will ensure the same standard is applied uniformly.

Record keeping will also be a factor when ensuring sufficient quality in approved provider marking. It is critically important that the assessor summarises what they have observed in relation to the criteria and guidance provided in the observation form. If there is no summary present, or if the summary lacks sufficient detail, then there will effectively be no record of evidence. The provider would therefore be required to observe the student again. The training and guidance that providers receive will reflect this accordingly.

Assignments 1, 2 and 3 are moderated by NCFE to ensure that the provider appointed assessor's marking judgements are in line with the NCFE visiting assessor, based on a sample of the criteria.

NCFE moderators will remotely moderate a sample of observations carried out by the provider appointed assessors, during the **[date] [month]** to **[date] [month]** delivery window. The observations they view will be selected by NCFE, based on the provider's observations plan, and in line with an appropriate sampling strategy. It is therefore vitally important that evidence is submitted to NCFE within **[days]** of the planned observation so that moderators can plan and be allocated to these.

The moderator will ensure that all observations are moderated across the sample.

Following moderation, the moderator will record their marks for the sample of students. There will be 3 potential outcomes from this activity:

- the moderator and provider marks are within a tolerance, in this case, all of the provider's marks would be accepted with no further action required
- the moderator and provider marks are out of tolerance, but in a consistent way (for example, they are all too lenient, or they are all too strict); in this case, a calculation would be applied to compare the provider's and moderator's marks in order to determine the required adjustment for each student. This adjustment will then be applied to all students in the cohort
- the moderator and provider marks are out of tolerance, but not in a consistent way that can be safely adjusted; in this case, additional support will be made available to the provider and all student evidence will need to be reassessed and moderated

Planning and recording forms

This pack includes the mandatory forms which must be used by providers to gather evidence for each of assignments 1, 2 and 3, to make final marking decisions.

All mandatory forms and final marks must be submitted to NCFE by the submission deadline in the final year of the T Level qualification.

Observations for assessment should not take place until the provider is confident that the student will be able to show an appropriate level of achievement during the observation and must be scheduled into the appropriate window as set by NCFE.

The forms are listed below, with guidance on their use.

Observation planning form (appendix 1)

This form should be used to plan the observations the assessor will make for the student on each applicable assignment. This form will detail the date of the observations and the intended assignment to be observed.

This form must be shared with the student prior to the structured observations taking place.

Observation record forms (appendix 2 - exemplar from assignment 1)

An observation record form will be available and tailored to each task within the assignment. This form should be used to make a narrative record of each observed assignment conducted by the assessor. Each observation form must be completed accurately. The observation narrative must be linked to the specific criteria in the form.

Criteria assessor judgement guidance and assessment justification

These forms must be used to capture a marking judgement for each criterion, for the observation, with a justification linking back to the relevant evidence on the observation record form. These forms should be completed after each observation.

Final mark form (appendix 3)

This form must be used to capture a final mark for the assignment. This form should be completed after the observation. There will be a deadline in the final year of each student's T Level qualification for these final marks to be submitted.

Resources and equipment

The resources required for each practical skills assignment will be available in the specific guidance for each assignment in this document. These requirements will be in line with the resources specified in the qualification specification and as such, students should be familiar with these as they should be used during the delivery of the qualification.

Standardisation of patients and practitioners

The practical skills assignments require specific roles to be filled as part of a role-play activity, that sits outside of the responsibility of the assessor and student. These roles must be fulfilled by provider staff. As part of the preparation for the delivery of these practical skills assignments, providers must ensure that those playing the roles of patients or practitioners are familiar with the specifics of the roles outlined in the assessment materials and any supporting documents, such as the patient health form (actor script). The role of a standardised patient (SP) is to independently and accurately convey details of the patient's life in an appropriate and consistent manner.

NCFE recommend that providers research the principles of good practice in presenting simulated patients, reading around the subject, for example, Simulated Patient Handbook, A Comprehensive Guide for Facilitators and Simulated Patients by Fiona Dudley. NCFE will also provide training on delivery to support consistency of delivery and provide series-specific guidance.

Members of staff who take on the role should ensure they have the appropriate level of subject knowledge to understand the nature and complexity of the role.

They will be expected to:

- access and apply information from the training provided by NCFE
- deeply engage with the patient's details (although the SPs/role players are permitted to have the appropriate notes with them to refer to during the practical activity scenario)
- remain in a specific patient character when responding to student questions
- play the role in a convincing but not melodramatic manner, being mindful of facial expression
- check that language used is appropriate for a typical patient (such as not overly medicalised)
- refrain from embellishing the condition or other medical considerations in a misleading way
- play the role consistently so that every students' experience will be the same
- repeat aspects that the student has not understood, be prepared to alter the wording slightly if they continue to fail to be understood but not radically, so not to advantage that student in comparison to other students
- avoid tips or prompts that make the assessment less challenging
- give information but only in response to appropriate prompting

Where specific practitioner roles are required and where a combination of student performance and mark scheme allows, input may be required during the observation of practical skills, persons playing the role must be aware of when they would be expected to step in to support the student against specific steps or criteria. It is therefore critical that students are given sufficient time to attempt or complete the relevant stage before either requesting further support from the practitioner or appropriate intervention being required as part of the process, as intervention can impact on the number of marks that can be awarded to students for each task part and in some cases may lead to students being awarded 0 marks for specific criteria for example, when the level of support students require goes beyond the level stated in the lower bands.

The purpose of intervention is so that students are not disadvantaged from accessing marks further along the assessment by completing an action that would either prevent them from continuing with a process or procedure, or otherwise be prevented from doing so when being support by the relevant practitioner in the workplace. Additionally, if students appear to be causing a health and safety risk as a result of their actions, then the assessment must be stopped.

The use of patient record forms will support the assignments and, with the standard expectation of the actors for role plays, will facilitate a consistent approach across providers. The patient health forms with scripts should not be shared with students, but actors should use this information to inform their role play.

Assignment specific guidance - assignment 1

Brief

You are working as healthcare science assistant in the respiratory department of a hospital. You are supporting your respiratory team lead scientist and are about to see your next patient.

You meet with your next patient, who has been complaining of shortness of breath when completing everyday tasks; their GP has referred them to your department after noticing a fall in the peak expiratory flow measurements, which the patient has been using at home. Your patient has some issues regarding their hearing which is noted in their patient record.

Task

You must complete the patient record form and assist with the assessment of the patient by completing the following:

1(a) Prepare for peak expiratory flow, blood pressure and spirometry measurements including record keeping.

1(b)(i) Perform peak expiratory flow measurement

1(b)(ii) Carry out a manual blood pressure measurement on the patient and update records

1(b)(iii) Assist the practitioner with the spirometry measurement on the patient and record findings accordingly

1(c) Carry out post-measurement cleaning and storage of equipment

Available marks

The marks available for this assignment can be found underneath each (where relevant) brief and task information within the assignment brief. The maximum number of marks available for this assignment is 77.

Equipment and resources

The following equipment and resources will be required for this assessment:

- a simulated consultation room to include:
  - patient bed
  - hand wash basin
  - desktop computer
  - a clock
- a person enacting the role of the patient
- a person enacting the role of the respiratory team lead scientist who is able to carry out spirometry
- manual blood pressure measurer (sphygmomanometer)
- a range of cuff sizes for the sphygmomanometer
- cuff connectors stored in equipment tray
- stethoscope (including a range of earpieces)
- personal protective equipment (PPE) (including aprons, masks and gloves)

- bed roll, paper towels and disinfectant to clean and hand sanitiser
- clinic waste bin for waste (with clear notice that waste will be incinerated)
- a digital spirometer including bacterial filters and mouthpieces
- peak expiratory flow device including mouthpieces
- paper-based patient record system

Assessment delivery guidance

Students should:

- be directed to the assessment area where the practitioner will read out the assignment brief and task information
- be made aware when the assessment will begin
- be asked to prepare for the next patient and the practitioner will provide the student with the patient details form
- be made aware that once task 1(a) has been completed, the patient will enter the room and the assessment will continue until complete
- be given 1 hour to complete the task

Patient details form

Confidential patient record form

Important note: This patient has hearing difficulties.

Name	Billy Sunshine		
Date of birth	10/10/1990		
Home address	11 Newfound Bay Somewhere UK		
Next of kin	Jean Sunshine		
Name of GP	Dr Moode		
Medical history			
Long-term conditions			
Medication			
Allergies			
Measurement required	**Date:**	**Time:**	**Result:**
Blood pressure			
Spirometry: forced vital capacity (FVC)			
Spirometry: forced expiratory volume in 1 second (FEV1)			

Patient health form actor script

Confidential patient record form (actor version)

Important note: This patient has hearing difficulties.

Name	Billy Sunshine
Date of birth	10/10/1990
Home address	11 Newfound Bay Somewhere UK
Next of kin	Jean Sunshine
Name of GP	Dr Moode
Medical history	Shortness of breath for a few days, finding it difficult to do normal things like shopping or housework. Experiences hearing difficulties.
Long-term conditions	None known, but there is some history of asthma in the family.
Medication	Takes multivitamins from the pharmacy counter, but nothing regularly.
Allergies	Has hay fever in the summer.

Assignment specific guidance - assignment 2

Brief

You are based within an outpatient clinic in the local community hospital working as a healthcare science assistant as part of the multi-disciplinary team.

A patient has been referred to you who has been requested by the clinician to submit a mid-stream urine sample for investigation of infection.

Task 1

You must assist by carrying out the following stages:

1(a) Prepare for urine mid-stream specimen collection.

1(b)(i) Complete urine mid-stream specimen collection to include:

- label and register patient samples

1(b)(ii) Complete a urine dipstick test on the collected sample and send another sample for microbiology testing, to include:

- using the sample in the plain sterile container carry out a POCT and check the sample for protein, haematuria, glucose and pH
- using the provided results discuss findings with a senior colleague and record findings in patient details form
- prepare the second collected sample (red topped boric acid container) for transportation to the microbiology department requesting culture and sensitivity testing on the patient's mid-stream urine sample
- carry out an electronic request to the microbiology department for the patient's mid-stream culture and sensitivity before the sample is dispatched

1(c) Record and report the results and carry out post-examination cleaning and storage of equipment.

Brief

You are working as a healthcare science assistant in a busy multidisciplinary general outpatient department and you need to check the blood sugar of a patient with type 1 diabetes before further tests and examinations can be carried out.

Task 2

Use a blood glucose meter to check the blood sugar measurement on the patient.

You must assist by carrying out the following stages:

2(a) Prepare for blood glucose test including explaining the procedure to the patient

2(b) Carry out the blood glucose test including carrying out quality control (QC) on the device

2(c) Record and report the results provided to you and carry out post-examination cleaning and storage of equipment

Available marks

The marks available for this assignment can be found underneath each (where relevant) brief and task information within the assignment brief. The maximum number of marks available for this assignment is 100.

Equipment and resources

- a simulated consultation room to include:
  - a simulated patient toilet area in a separate room
  - hand wash basin
  - desktop computer
  - a clock/timer
- a person enacting the role of the patient for each task
- a person enacting the role of a practitioner, as part of a multi-disciplinary team
- a set of results for the urine dipstick test (POCT, protein, haematuria, glucose and pH
- a set of results for the blood glucose test
- PPE (including aprons, masks, safety glasses (dip stick testing) and gloves)
- a computer with the provided patient details form
- midstream urine collection kit (including 2 containers (1 plain sterile universal container, 1 boric acid sterile universal container)
- POCT kit (urine dipstick)
- disinfection cleansing wipes
- specified simulated urine liquid, given to the patient prior to commencement of the assessment
- specimen labels and specimen transport bags
- a simulated designated area where samples are placed into a transport box to be sent to the laboratory at a designated time (note after designated time, samples need to be placed into the fridge until next collection)
- blood glucose POCT device including glucose strips, calibrator strip (if appropriate), quality control, quality control record book and standard operating procedure (SOP). See assessment delivery guidance for further guidance.
- blood glucose POCT device working instructions (provider to supply relevant version to device used*)
- a blood glucose POCT finger prosthesis (lance) contained with simulated blood material, given to the patient prior to commencement of the assessment and placed on their preferred finger
- quality control solution x 2 (high and low)
- quality control record book
- appropriate lance
- sharps box and cotton wool balls
- bed roll, paper towels and disinfectant to clean area and hand sanitiser
- clinical waste bin for waste to be incinerated
- clip board and pen to hold patient form and record results

- an area where the following forms (provided by NCFE) can be placed for students to select and complete as appropriate to the assessment:
    - hospital request: microbiology
    - hospital request: histopathology | non-gynaecological cytology
    - blood transfusion request
    - clinical services

*Providers must ensure than a basic set of working instructions are provided to students alongside the device. These should be developed based on the manufacturer's instructions for that device.

To support a realistic working environment, the following should also be made available in the assessment area:

- instructions for a different POCT device
- alcohol wipes
- general outpatient afternoon clinic list (provided by NCFE)

Assessment delivery guidance

- students should be directed to the assessment area where the practitioner will read out the assignment brief and task information
- the student will be directed to the area that contains all available resources, including specimen transport area
- once preparations for each task have been observed, the patient will enter the room and the assessment will continue until completion
- students will be given a total of 55 minutes to complete this assessment, comprised of 30 minutes for task 1 and 25 minutes for task 2
- the SOP document [HCSci-0005-03-TQ-Healthcare Sci-OSA-Assisting with Healthcare Science-Assignment 2-Standard Operating Procedures-Assignment brief insert] will require device specific amendments to all sections highlighted in red prior to the assessment to ensure it matches the device supplied to students by the provider

General outpatient afternoon clinic list

ROOM	CLINIC	CONSULTANT LEAD
4	DIABETIC RENTINPATHY	Mr Mahmood
5	DIABETIC RENTINPATHY	Mr Mahmood
6	RENAL/UROLOGY	Mr Stones
7	RENAL/UROLOGY	Mr Stones
8	AUDIOLOG	Mrs Jones
9	AUDIOLOGY	Mrs Jones
10	DIABETES	Mr Glover
11	DIABETES	Mr Glover
12	ENDOCRINOLOGY	Dr Robinson
13	ENDOCRINOLOGY	Dr Robinson

Patient details form - task 1

Confidential patient record form

Surname	Mildew
Forename	Billy
Date of birth	10/10/1980
Home address	11 Newfound Bay Somewhere UK
Hospital number	123456
NHS number	333 333 3333
Next of kin	Jean Mildew
Name of GP	Dr Cooper
Clinical details	Type One diabetes
Medication	Humalog
Allergies	None
Tests requested:	
Results	

Patient health form actor script - task 1

Confidential patient record form (actor version)

Surname	Mildew
Forename	Billy
Date of birth	10/10/1980
Home address	11 Newfound Bay Somewhere UK
Hospital number	123456
NHS number	333 333 3333
Next of kin	Jean Mildew
Name of GP	Dr Cooper
Clinical details	Type One diabetes
Medication	Levemir Insulin
Allergies	None

Hospital request: microbiology

Important: please complete all relevant sections

Surname		Date of birth		Consultant/GP	
Forename		Hospital number		Phone/Bleep number	
Address		NHS number		Signature	
Postcode		MALE/FEMALE		Ward	
Specimen type		NHS/PRIVATE		Time of specimen	
Tests required					
Clinical details	Previous/current/intended antibiotic therapy? Yes/No Please state:				

Hospital request: histopathology | non-gynaecological cytology

Important: please complete all relevant sections

Surname		Date of birth		Consultant/GP	
Forename		Hospital number		Hospital	
Address		NHS number		Practitioner's name (capitals)	
				Phone/Bleep number	
Postcode		NHS/PRIVATE/CAT II		Ward	

Specimen data

Site		LEFT/RIGHT	Age			
Date and time taken			GYNAECOLOGY – date of LMP			
Clinical data				LAB number		
Laboratory use only				Dissect		
				Cassette		
				Block		
				Section		
				To		
				Report		
Date of report				SNOMED		

Blood transfusion request

Important: please complete all relevant sections

Lab use only
Affix laboratory number here

BIOHAZARD

Patient details

Surname		Date of birth		Consultant/GP	
Forename		Hospital number		Practice name	
Address		NHS number		Practitioner's name (capitals)	
		NHS/PRIVATE/CAT II		Phone/Bleep number	
Postcode		MALE/FEMALE		Signature	

Specimen details

Specimen date		Specimen time		Specimen type	

Clinical details

Blood group		Atypical antibodies		Date of last transfusion	
Antenatal requests only	EDD		Anti D injection in the last 6 months		Y/N
Postnatal requests only	Date/time of delivery:			Sex of child:	Male/Female

Tests required

Crossmatch ☐	Kleihauer ☐	Red cells ☐	Date required
Group and save ☐	Cold agglutinins ☐	Platelets ☐	
Direct Coombs test ☐	Antenatal group and screen ☐	Fresh frozen plasma ☐	AM/PM
		Cryoprecipitate ☐	

Clinical services

Lab use only
Affix laboratory number here

Important: please complete all relevant sections.
Please ensure a proper seal so that the package is not a hazard. Place labelled specimen in bag, remove protective strip, fold flap onto bag and seal firmly

Patient details **Requestor's details**

Surname		Date of birth		Consultant/GP	
Forename		Hospital number		Ward/Practice name	
Address		NHS number		Practitioner's name (capitals)	
		NHS/PRIVATE/CAT II		Phone/Bleep number	
Postcode		MALE/FEMALE		Signature	

Specimen details

Specimen date		Specimen time		Specimen type	

Clinical details and relevant drug therapy

Urea/Electrolytes ☐	Haemoglobin A1c ☐	Full blood count ☐	Iron ☐
Liver function tests ☐	TG and cholesterol ☐	Clotting screen ☐	Ferritin ☐
Gamma GT ☐	HDL/LDL cholesterol ☐	Plasma viscosity ☐	Serum Vit. B12 ☐
Thyroid function tests ☐	Bone profile ☐	APTT (Heparin monitoring) ☐	Other tests
Fasting plasma glucose ☐	Uric acid ☐	INR (Warfarin monitoring) ☐	
Random plasma glucose ☐	Serum Folate ☐	Rheumatoid factor ☐	

Patient details form - task 2

Confidential patient record form

Surname	Mildew
Forename	Billy
Date of birth	10/10/1980
Home address	11 Newfound Bay Somewhere UK
Hospital number	123456
NHS number	333 333 3333
Next of kin	Jean Mildew
Name of GP	Dr Cooper
Clinical details	Type One diabetes
Medication	Humalog
Allergies	None
Tests requested:	
Results	

Patient health form actor script - task 2

Confidential patient record form (actor version)

Surname	Mildew
Forename	Billy
Date of birth	10/10/1980
Home address	11 Newfound Bay Somewhere UK
Hospital number	123456
NHS number	333 333 3333
Next of kin	Jean Mildew
Name of GP	Dr Cooper
Clinical details	Type One diabetes
Medication	Levemir Insulin
Allergies	None

Assignment specific guidance - assignment 3

Brief

Location: microbiology laboratory

You are working as a healthcare science assistant in the microbiology department. the biomedical scientist has requested that you prepare positive and negative quality control slides for Gram stains. Control cultures are available in the department. You are required to prepare the slides using the standard operating procedure (SOP) provided and check that they are fit for purpose before passing back to the biomedical scientist for checking.

Task 1

Prepare the control Gram stain slides using the appropriate control cultures.

1(a) Prepare your work area and self for Gram staining

1(b) Prepare slides for Gram staining

1(c) Carry out Gram staining on the prepared slides following the standard operating procedure (SOP) provided and record the results

1(d) Dispose of materials and clean equipment and work area

Student instructions

Following the quality control (QC) confirmation of your Gram Stain using the microscope as part of task 1(c), you must notify the biomedical scientist and explain how you have completed the control Gram stain prior to commencing task 1(d).

Brief

Location: pathology department

You are working in pathology as a healthcare science assistant in the virology department of a hospital supporting a biomedical scientist.

Your team receives 2 samples for hepatitis B antibody detection.

Task 2

The biomedical scientist has asked you to check 2 blood samples to confirm suitability for testing for a hepatitis B antibody screen.

2(a) Prepare the work area and self for carrying out a hepatitis B enzyme-linked immunosorbent assay(ELISA) on a blood sample

2(b) Check sample suitability and prepare sample for the ELISA

2(c) Prepare reagents and quality control (QC) material for ELISA including:

- following the SOP
- confirming the specimen is ready for analysis
- discussing the process you went through with the biomedical scientist

2(d) Carry out post-analysis activities including:

- sample storage
- equipment cleaning
- waste disposal
- decontamination of work area

Student Instructions

You must complete tasks 2(a) – 2(b) and log the sample details into the laboratory information management system LIMS.

Available marks

The marks available for this assignment can be found underneath each (where relevant) brief and task information within the assignment brief. The maximum number of marks available for this assignment is 94.

Equipment and resources

General

- a simulated laboratory
- a person enacting the role of the biomedical scientist
- PPE: including aprons, laboratory coats, safety spectacles/goggles, masks and gloves
- cold storage simulated to appear between 2 to 8^{o}C
- clinical waste bin
- glass/plastic jar for tip disposal
- sharps bin
- handwashing facilities
- decontamination tools and materials

Microscopy task

- frosted microscope slides
- forceps to hold slides whilst rinsing
- access to sink with tap (create a rack using secured long glass rods that run across the sink)
- or a slide staining rack per work area
- microscope with x 4, x 10, x 40 and x 100 achromatic objectives, which when used with x 10 - magnification range x 40 to x 100 and spring loaded front lens that retracts the lens into the objective on contact with the side
- immersion oil
- microscope wipes
- slide labels and/or pencil

- sterile inoculating loops
- sterile distilled water
- hot plate to fix slides
- prepared culture of Gram positive and Gram negative bacteria on agar plate
- agar plates and growth media
- Gram staining reagents kit to include:
    - distilled water in bottle
    - crystal violet
    - Gram iodine solution
    - Gram's differentiator (need safe store as this is flammable)
    - safranin
- pasteur pipettes (larger volume for Gram staining if not using a bottle with pourer lid or squeezy bottle)
- alcohol wipes or equivalent to wipe down
- paper towels/blue roll

Blood analysis task

- a person enacting the role of a biomedical scientist
- 2 specified simulated blood samples in tubes sealed in transport bags
    - 1 blood tube must contain one of the following errors:
        - an obvious leak
        - missing patient information
        - incorrect storage history
- specimen labels
- designated area for receipt of specimens
- automatic pipettes dispensing 20 to 200ul and 1000ul
- corresponding automatic pipette tips for 20 to 200ul (yellow) and 1000ul (blue)
- pasteur pipettes
- tubes and racks for appropriate dispensed volumes
- marker pens
- alcohol wipes
- centrifuge
- automated ELISA test kit
- computer loaded with NCFE provided LIMS spreadsheet
- analysis request form

Assessment delivery guidance

- students should be directed to the assessment area where the practitioner will read out the assignment brief and task information
- the student will be shown all available resources listed in the equipment and resources section
- the student will have a total of 2 hours 30 minutes to complete this assignment to include 1 hour for task 1 and 1 hour and 30 minutes for task 2

Analysis request form - task 2

Specimen type	External	✔	Internal		

Patient details	
Name	Joe Henry Bloggs
Address	23 Arcadia Avenue, Jesmond, Newcastle, NE1 1NE
DOB	12/10/1974
Patient NHS number	**NHS001**

Flag						
Routine		Urgent	✔	Cancer pathway		

Task				
Analyse bacterial culture		Analyse urine sample		
Analyse blood sample	✔			

Clinical indication	Hepatitis B

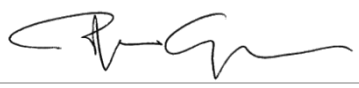
Lab test						
Bacterial culture		Gram stain		MRSA test		
ELISA	✔	H&E staining		PAP test		
Immunochemistry						

Source						
Blood sample	✔	Lung biopsy		Sputum		
Cervical smear		Swab		Stool sample		
Skin punch biopsy						

Source site	Left upper arm

Collector name	Dr Drinkwater	Collection date	02/12/2021	Collection time	16:23

Collection department						
A&E		Outpatients		Ward 1a		
Endoscopy	✔	Pre-op theatre		Ward 1b		
GP						

Name	Dr P Drinkwater
Signature	

Assignment specific guidance - assignment 4

Assessment delivery guidance

The purpose of the extended written response element of the occupational specialism (OS) is to ensure that students have the opportunity to apply their core knowledge and skills as well as the key skills from a range of areas across the OS content.

The extended written response assessment whilst not a 'practical' assessment in the sense of a 'show how' performance, is 'practical' in the sense of a 'knows how to' performance. It is a written simulation, testing students' breadth and depth of knowledge and skills across the performance outcomes (POs) in an authentic, occupationally relevant way, with focus on the application of students' knowledge, understanding and skills.

Students will be provided with an assignment brief, which includes scenarios, information and resources to support the completion of the assessment. Students will be required to apply their knowledge and skills when considering multiple aspects of information when responding to each task.

Students will be given 2 hours to complete this assignment.

Assessment conditions

Students must complete the extended written response assessment independently and under supervised conditions.

Students and tutors are required to sign declarations of authenticity to confirm that the work is their/the student's own. The declaration forms can be found at www.qualhub.co.uk. This is to ensure authenticity and to prevent potential malpractice and maladministration. Students must be made aware of the importance of this declaration and the impact this could have on their overall grade if the evidence was found not to be the students' own work.

Some of the tasks may require students to refer to information from a range of sources, such as tables of data, to use as references or as part of calculations to support their knowledge and understanding or to justify their responses.

Resources

Students must have access to the appropriate resources required to complete the extended written response assessment. These include the following:

- computer
- word processing software (for example Microsoft Word)

All students' scripts must be submitted to NCFE for marking. All assessment material must be securely prior to submission.

Assignment coverage table

Assignment 1 – assist with physiological measurement skills

Assisting with Healthcare Science POs	
PO1	Contribute to patient care by supporting physiological, physical and clinical engineering services to produce reliable data and images for use by healthcare professionals in diagnosis and treatment

K1.1 The responsibilities and duties of the job role of a healthcare science assistant (HCSA) when supporting the collection of clinical measurements

K1.3 The definitions of scope of practice, fitness to practise and continuing professional development

K1.7 The purpose of a range of services within healthcare science that contribute to patient care, to investigate, diagnose and treat disease

K1.16 Factors that would dictate the need to seek support and advice from clinical colleagues

K1.17 How knowledge of human anatomy and physiology relates to the methods used for the collection of clinical measurement data

K1.18 The importance of assessing physiological measurements against specific normal expected ranges

K1.19 How factors can impact on normal physiological measurement values

K1.20 The underpinning scientific principles of equipment and devices used for a range of common tests

K1.26 The importance of equipment being calibrated correctly

K1.27 When calibration may be required

K1.28 Stages of calibrating a range of equipment which requires frequent calibration

K1.29 The importance of maintaining equipment effectively when collecting measurements and images from patients

K1.31 How to address issues with equipment that is not fit for use

K1.32 How to handle hazardous materials and substances with reference to COSHH and health and safety policies

K1.33 Principles of the categories of risk

K1.34 The decontamination processes for high and low risk equipment and devices aligned to infection control policies

K1.35 The difference between single use and multiple-use equipment

K1.36 How person-centred care is applied within healthcare science where clinical measurements are being collected

K1.37 The methods used to collect clinical measurements

K1.38 Appropriate techniques for taking required measurements from patients considering a range of personal factors

K1.39 The importance of adhering to good clinical and scientific practice

K1.40 The link between contraindications and clinical measurement techniques

K1.41 How underpinning knowledge of health, safety, regulation, legislation, local and national policies and standards relates to the collection of clinical measurements and images

K1.43 The importance of using SOPs when supporting patient care and ensuring a safe and effective practice environment

K1.44 How core knowledge of infection control relates to assisting with healthcare science and in particular collecting clinical measurements

K1.45 How core knowledge of IT systems for recording, storing and sharing patient information relates to assisting

with healthcare science and in particular collecting clinical measurements

K1.46 The potential consequences of IT data breaches in a healthcare science environment

K1.47 Considerations in relation to confidentiality of consultations and medical records

K1.48 The process of reporting patient clinical measurements while following appropriate SOPs

K1.49 The importance of reporting clinical measurement data accurately with appropriate levels of confidentiality

K1.50 Examples of urgent or immediate referral indicators while taking clinical measurements

K1.51 The actions to follow after noticing signs of an immediate or urgent referral while collecting clinical measurements

S1.52 Apply knowledge of roles and responsibilities to provide the best patient care when supporting the physiological, physical and clinical engineering services to produce reliable data and images for use by healthcare professionals in diagnosis and treatment

S1.53 Apply understanding of the scope of practice in these specific areas to ensure effective patient care

S1.55 Recognise the need to refer, and make referrals of patients to a senior member of the healthcare team

S1.56 Apply knowledge of anatomy and physiology to the collecting of clinical measurement data

S1.57 Apply knowledge of relevant science concepts when supporting the collection of clinical measurements

S1.58 Select appropriate equipment and accessories and/or devices for measurements to be collected

S1.59 Apply knowledge of the underpinning principles of the use of equipment and devices used to take clinical measurements in order to ensure that accurate measurements and images are obtained

S1.60 Undertake calibration of equipment that is within scope of practice

S1.61 Raise concerns with equipment if you find that the equipment is out of date

S1.62 Ensure equipment is fit for use before using it with patients

S1.63 Use single or multi-use equipment as appropriate for the measurement being taken in accordance with SOPs and to ensure health and welfare of the patient

S1.64 Provide person-centred care in respect of collecting all data and images

S1.65 Promote health and wellbeing, both physical and mental, at all times when working with patients

S1.66 Apply consent procedures when collecting clinical measurements

S1.67 Gather information to support the safe and appropriate collection of measurement data and images, through questioning, listening to and observing patients and/or carers

S1.68 Obtain reliable data and images using appropriate techniques, following SOPs

S1.69 Apply good clinical and scientific practice when undertaking all activities in respect of collecting measurement data and images

S1.70 Adhere to all required health and safety regulations when supporting the practitioner in taking clinical measurements from patients

S1.71 Adhere to all local and national policies and legislation when taking clinical measurements from patients

S1.72 Undertake risk assessments based on patient characteristics and needs

S1.73 Move and position equipment and people in accordance with all manual handling requirements in relation to the below measurements

S1.74 Adhere to SOPs to establish and maintain a safe and effective practice environment and ensure consistency of results

S1.75 Apply good infection control techniques at all times to maintain a safe environment for service users and staff

S1.76 Apply appropriate national and local regulations when using IT systems to obtain and record information in the physiological, physical and clinical engineering services

S1.77 Accurately record patient information from a range of clinical measurement tasks

S1.78 Handle all patient information in line with local and national policies to meet all confidentiality requirements S1.79 Check for any specific urgent or immediate referrals prior to undertaking clinical measurements S1.80 Take appropriate actions if an urgent or immediate referral is noted	
PO2	Contribute to patient care by supporting the collection of a range of specimens for analysis to aid diagnosis and treatment
N/A	
PO3	Contribute to patient care by processing and analysing service user specimens in a range of life science areas and laboratory environments to produce reliable data sets for use by healthcare professionals in diagnosis and treatment
N/A	

Assignment 2 – assist with specimen collection and point of care testing (POCT) skills

Assisting with Healthcare Science POs	
PO1	Contribute to patient care by supporting physiological, physical and clinical engineering services to produce reliable data and images for use by healthcare professionals in screening, diagnosis and treatment
N/A	
PO2	Contribute to patient care by supporting the collection of a range of specimens for analysis to aid diagnosis and treatment

K2.1 The responsibilities and duties of the job role of a healthcare science assistant (HCSA) when supporting the collection of specimens

K2.2 The range of patient specimens that can be collected within the physiological sciences

K2.4 The purpose of a range of life science divisions

K2.7 The purpose of collecting a range of specimens across physiological, physical, and life sciences, to investigate, diagnose and treat disease

K2.9 Certain activities which can only be completed by registered professionals

K2.12 The purpose of associated accreditation bodies within healthcare science

K2.13 The responsibilities of the healthcare science assistant (HCSA) in quality assurance, management and improvement

K2.14 Factors that would dictate the need to seek support and advice from clinical colleagues

K2.15 The definition of clinical/patient specimen

K2.16 How different types of specimens are collected

K2.17 The rationale and overarching principles of specimen collection

K2.18 How underpinning knowledge of anatomy and physiology relates to the collection of specimens

K2.19 The procedures for a range of specimen collection techniques, including the range of sampling sites which may be used

K2.20 The importance of adhering to health and safety requirements, including the use of personal protective equipment (PPE) and infection prevention control when collecting specimens

K2.21 How the principles of person-centred care relate to specimen collection and ensure that these are adhered to when undertaking any specimen collection procedure

K2.22 What contraindications are in relation to specimen collection and how they may affect specific specimen collection procedures

K2.23 The importance of safety management procedures when collecting specimens

K2.24 The purpose of a range of equipment and resources used in specimen collection techniques

K2.25 The processes to ensure equipment used in the collection of specimens is fit for use

K2.26 How infection control procedures are used while collecting specimens in relation to equipment and resource use

K2.27 The requirements for stock rotation of equipment for specimen collection

K2.35 How communicable disease states (for example HIV, hepatitis, MRSA) impact the specimen collection procedures

K2.36 How non-communicable disease states (for example diabetes, dehydration, vascular disease) impact the specimen collection procedure

K2.37 How to check for non-communicable disease states

K2.39 How to use appropriate waste streams and colour coded waste procedures for specimen collection equipment and resources

K2.40 The purpose of legislation related to waste relevant to the equipment and resources used in collection of specimens

K2.41 The process of good stock control and storage of limited stability products

K2.42 What point of care testing (POCT) is

K2.43 The reasons for an increased use in POCT, and how this may impact the role of a healthcare science assistant (HCSA)

K2.44 The advantages and disadvantages of POCT

K2.45 The principles and processes of undertaking a range of common POCT

K2.46 The purpose of quality management for POCT equipment

K2.47 The requirements for managing quality in POCT

K2.48 The purpose of different self-testing digital healthcare technologies

S2.49 Apply knowledge of roles and responsibilities to provide the best service user care when supporting physiological services, physical services and life sciences in the collection of specimens from patients

S2.50 Apply understanding of the scope of practice in these specific areas to ensure effective patient care

S2.53 Apply knowledge of principles of anatomy and physiology to support the safe and appropriate collection of a specimen from a patient

S2.54 Apply knowledge of principles of specimen collection to support the safe and appropriate collection of a specimen from a patient

S2.55 Undertake specimen collection using appropriate procedures and following SOPs

S2.56 Recognise the need to refer and when to refer patients to another member of the team

S2.58 Gather information to support the safe and appropriate collection of the specimen, through questioning, listening to and observing patients and/or carers

S2.59 Demonstrate person-centred care when undertaking sample collection

S2.60 Demonstrate the ability to use appropriate waste streams for consumables associated with specimen collection

S2.61 Recognise appropriate disinfection/sterilisation requirements for consumables associated with sample processing

S2.62 Use equipment and resources appropriately in the collection of patient specimens

S2.63 Apply appropriate disinfection/sterilisation methods for equipment used to collect patient specimens

S2.64 Handle patient information in line with local and national policies to meet all legislative and legal requirements and keep information confidential

S2.65 Record all required patient information on a collected sample ensuring that this information is accurate and is consistent across all documentation related to the sample

S2.66 Record the collection of the sample and pertinent information

S2.67 Package samples appropriately for transportation, adhering to national legislation and local guidance

S2.68 Store samples correctly until collected for transportation, analysis or disposal

S2.69 Identify disease states which may affect specimen collection

S2.70 Make reasonable adjustments to specimen collection procedures in relation to identified disease states, for example use of alternative equipment

S2.71 Recognise appropriate waste streams for equipment and resources used to collect patient specimens S2.72 Dispose of any equipment and resources adhering to relevant legislation and local guidelines S2.74 Ensure all products are fit for use and rotate stock as appropriate S2.75 Perform point of care testing (POCT) techniques on a range of individuals, following all required guidelines and applying knowledge of the tests that can be undertaken S2.76 Provide person-centred care when undertaking POCT S2.77 Apply consent procedures when undertaking POCT S2.78 Gather information to support safe and appropriate POCT through questioning, listening to and observing patients and/or carers S2.79 Promote health and wellbeing, both physical and mental at all times when working with patients, including during POCT S2.80 Obtain reliable data from POCT using appropriate techniques, following SOPs S2.81 Apply good clinical and scientific practice when undertaking all activities in respect of POCT, including quality management of equipment	
PO3	Contribute to patient care by processing and analysing service user specimens in a range of life science areas and laboratory environments to produce reliable data sets for use by healthcare professionals in diagnosis and treatment
N/A	

Assignment 3 - observation of microscopy and specimen analysis skills

Assisting with Healthcare Science POs	
PO1	Contribute to patient care by supporting physiological, physical and clinical engineering services to produce reliable data and images for use by healthcare professionals in diagnosis and treatment
N/A	
PO2	Contribute to patient care by supporting the collection of a range of specimens for analysis to aid diagnosis and treatment
N/A	
PO3	Contribute to patient care by processing and analysing service user specimens in a range of life science areas and laboratory environments to produce reliable data sets for use by healthcare professionals in diagnosis and treatment

K3.1 The responsibilities and duties of the job role of a healthcare science assistant when supporting the processing and analysing of specimens

K3.2 The duties of a healthcare science assistant who is processing and analysing a range of specimens within the following life science areas and laboratory environments

K3.9 The functions of the different services within life sciences and the related tests which contribute to investigation, diagnosis and treatment of disease

K3.10 Responsibilities of a range of roles within a multi-disciplinary team within the life sciences

K3.11 There are certain activities which can only be completed by registered professionals

K3.12 Factors which would dictate when they should seek support and advise from clinical colleagues

K3.13 The purpose of the following quality assurance (QA) processes in relation to the processing and analysing of specimens

K3.14 How data is accurately presented and transferred within clinical laboratory environments using a range of IT systems

K3.15 The process for ensuring the correct specimen has been received both electronically and using paper forms

K3.16 The procedures to follow when samples are incorrectly labelled or packaged

K3.17 The procedures to follow when samples are leaking

K3.18 The procedures to follow when the time or temperature range of specimens has not been followed

K3.19 The purpose of specific regulations, policies and organisations which impact specimen storage and disposal

K3.20 How to ensure all specimen storage requirements are met

K3.21 The functions of a range of laboratory equipment used in the processing of specimens

K3.22 When calibration may be required for processing and analysing equipment

K3.24 What to do if equipment is found not to be fit for purpose

K3.26 The underlying principles of techniques used in the processing of specimens while using light microscopy techniques

K3.27 The underlying principles of techniques used in the processing of specimens while using separation techniques

K3.30 The importance of adhering to SOPs when processing and analysing specimens

K3.31 Infection prevention techniques for processing specimens

K3.33 The process of recording specimen details into laboratory information management system (LIMS)

K3.36 Common types of enquiry relating to specimen results

K3.37 How to follow GDPR policy and Caldicott principles when receiving enquiries in relation to results

S3.38 Apply knowledge of roles and responsibilities to provide the best service user care when processing and analysing patient specimens within a range of laboratory environments

S3.39 Apply understanding of the scope of practice in these specific areas to ensure effective service user care

S3.41 Recognise the need to refer, and make referrals of service users to a senior member of the healthcare team

S3.42 Support the practitioner in carrying out audits to ensure valid, accurate and reliable data is produced

S3.43 Adhere to all required QA procedures to ensure valid, accurate and reliable data is produced

S3.44 Check the suitability and quality of all samples received adhering to local guidelines

S3.45 Demonstrate the ability to determine if samples received are of a sufficient quality to permit processing

S3.46 Follow procedures if samples are deemed not suitable, for example if samples are leaking they should be discharged and disposed of appropriately

S3.47 Use IT systems to record details of samples received

S3.48 Handle all samples with care and respect

S3.49 Adhere to storage requirements for samples

S3.50 Dispose of all specimens and tissue samples in line with regulations

S3.51 Use a range of pieces of routine laboratory equipment to process service user specimens

S3.53 Maintain a range of equipment used in the processing and analysing of specimens to ensure it is fit for use

S3.54 Apply knowledge of underlying principles of microscopy techniques used in the processing of samples, to ensure that samples are processed effectively to obtain the most accurate results possible

S3.55 Apply knowledge of underlying principles of separation techniques used in the processing of samples, to ensure that samples are processed effectively to obtain the most accurate results possible

S3.57 Undertake specimen processing using appropriate techniques, following SOPs including appropriate infection prevention control and health and safety requirements

S3.58 Record results and data obtained from specimen processing

S3.59 Present data associated with results from processing specimens in appropriate formats for hand over to team members

S3.60 Demonstrate the ability to deal with laboratory enquiries and to understand clinical governance when releasing information

Assignment 4 - analysis and evaluation through extended written responses

Assisting with Healthcare Science POs	
PO1	Contribute to patient care by supporting physiological, physical and clinical engineering services to produce reliable data and images for use by healthcare professionals in diagnosis and treatment
K1.2 The functions of divisions and disciplines within physiological and physical sciences K1.7 The purpose of a range of services within healthcare science that contribute to patient care, to investigate, diagnose and treat disease K1.11 The importance of adhering to the regulatory framework within which research and innovation is conducted by the Health Research Authority (HRA) and Medicines and Healthcare products Regulatory Agency (MHRA) K1.13 How quality assurance, management, and improvement links to their associated standards and accreditation bodies K1.16 Factors that would dictate the need to seek support and advice from clinical colleagues K1.20 The underpinning scientific principles of equipment and devices used for a range of common tests K1.26 The importance of equipment being calibrated correctly K1.27 When calibration may be required K1.28 Stages of calibrating a range of equipment which requires frequent calibration K1.29 The importance of maintaining equipment effectively when collecting measurements and images from patients K1.30 The importance of adhering to maintenance schedules for complex equipment such as X-ray machinery K1.31 How to address issues with equipment that is not fit for use K1.39 The importance of adhering to good clinical and scientific practice K1.42 The purpose of specific regulations for specialised environments and supporting health professionals in using specialist equipment S1.55 Recognise the need to refer, and make referrals of patients to a senior member of the healthcare team S1.57 Apply knowledge of relevant science concepts when supporting the collection of clinical measurements S1.58 Select appropriate equipment and accessories and/or devices for measurements to be collected S1.59 Apply knowledge of the underpinning principles of the use of equipment and devices used to take clinical measurements in order to ensure that accurate measurements and images are obtained S1.61 Raise concerns with equipment if you find that the equipment is out of date S1.62 Ensure equipment is fit for use before using it with patient	
PO2	Contribute to patient care by supporting the collection of a range of specimens for analysis to aid diagnosis and treatment
K2.10 The importance of adhering to the regulatory framework within which research and innovation is conducted by the Health Research Authority (HRA) and Medicines and Healthcare products Regulatory Agency (MHRA) K2.12 The purpose of associated accreditation bodies within healthcare science K2.25 The processes to ensure equipment used in the collection of specimens is fit for use	
PO3	Contribute to patient care by processing and analysing service user specimens in a range of life science areas and laboratory environments to produce reliable data sets for use by healthcare professionals in diagnosis and treatment

K3.7 How quality assurance, management, and improvement links to their associated standards and accreditation bodies

K3.8 The job role of a HCSA working in the life sciences in relation to department accreditation

K3.11 There are certain activities which can only be completed by registered professionals

K3.12 Factors which would dictate when they should seek support and advice from clinical colleagues

K3.24 What to do if equipment is found not to be fit for purpose

K3.25 How to calibrate laboratory equipment

S3.39 Apply understanding of the scope of practice in these specific areas to ensure effective service user care

S3.40 Contribute to research and innovation within the boundaries of relevant clinical and scientific practice as required

S3.52 Calibrate a range of equipment used in the processing and analysing of specimens in line with manufacturer's instructions

Appendix 1: observation planning form

T Level Technical Qualification in Healthcare Science

Assisting with Healthcare Science

Student name	Student number	Assessor name	Observation date and time	Assignment to be observed

Appendix 2: observation record forms (exemplar from assignment 1)

Descriptive information and evidence of student's skills during the practical assignment. Even though evidence of the quality of skills demonstrated should support decisions against the mark scheme, the notes should follow the flow of the tasks and how students are expected to complete them, rather than attempting to assign evidence against the criteria at this stage.

To be completed by the provider appointed assessor

Area/objective - The following areas/objectives can cover a broad range of skills or actions which should be considered when adding notes. The text below each area/objective is an example of what should be observed and is not exhaustive.	**Comments** - Identifying student's areas of strengths and weaknesses through the use of thorough and precise notes that differentiate between a range of students' practical skills. This will be used to support accurate and consistent allocation of marks once all evidence had been generated.
Hand hygiene Describe how well the student prepares for and maintains hand hygiene to include techniques and any risks to hygiene.	
Preparation Describe how well the student collects appropriate equipment, such as the sphygmomanometer, cuffs and stethoscope.	
Health and safety: equipment Describe how well the student checks that equipment is safe for use on the patient.	
Health and safety: personal protective equipment (PPE) Describe how well the student uses PPE for each procedure including PPE required for respiratory clinics due to Covid-19	
Health and safety: environment Describe how well the student maintains the work environment to include infection control.	
Person-centred care: confirmation Describe how well the student confirms patient identity and consent.	
Person-centred care: communication Describe how well the student interacts with the patient to include communication skills and patient comfort, dignity and respect.	

Person-centred care: patient comfort Describe how well the student prepares the patient for each procedure.	
Procedure: peak expiratory flow: Describe how well the student guides the patient through the procedure, to include the following: • patient is in a seated position • peak expiratory flow meter is set to zero • patient is instructed to maximally inhale • patient is instructed to form a tight seal around the mouthpiece (whilst maintaining breath hold) • patient instructed to blow as hard as they can into the peak expiratory flow meter maintaining a tight seal at the mouthpiece • result is correctly noted • pointer is reset to zero and the process is repeated on 2 more occasions • best effort of the 3 attempts is reported in the correct format in the patients notes	
Procedure: blood pressure Describe how well the student carries out the procedure to include the following: • applies correct sized cuff • appropriate arm chosen to obtain a valid measurement and maintain patient comfort (for example, arm with cannular in situ not used) • lower edge of cuff 2 to 3cm above the brachial artery • locates the radial pulse • inflates the cuff using the bulb • when pulse no longer felt inflates cuff by another 20mmhg • places stethoscope in ears and with the diaphragm over the brachial artery • deflates the cuff noting the point where pulse is detectable (systolic) and when it disappears (diastolic) • documents measurement and reports to nurse in charge	

Procedure: spirometry Describe how well the student carries out the procedure to include the following: • accurately records height and weight • enters the correct patient demographics (name, DOB, gender at birth) • patient is correctly positioned (seated position, sitting straight, legs uncrossed) • measurements in relaxed vital capacity and forced vital capacity are obtained in accordance with Association of Respiratory Technology & Physiology (ARTP) guidelines • relaxed vital capacity (VC): patient is asked to steadily exhale fully from a position of full inspiration to full expiration. Minimum of 3 efforts required within 5% or 100ml of each other • forced VC: patient inhales fully then immediately exhales with maximum effort to empty. Minimum of 3 efforts required within 5% or 100ml of each other. Must not exceed 8 efforts • error in patient technique is identified and corrected • results for reporting are correctly selected in accordance with ARTP guidelines (5% or 100ml)	
Recording/reporting: Describe how the student updates the relevant paper-based logs.	
Post-procedure: Describe how well the student disposes of PPE and cleans down equipment.	

Appendix 3: final mark form

T Level Technical Qualification in Healthcare Science
Assisting with Healthcare Science

Student name:		**Assessor name:**	
Student ID:		**Provider name:**	

Assignment	**Final mark**
Assignment 1: observation of physiological measurement skills	
Assignment 2 observation of specimen collection and point of care testing (POCT) skills	
Assignment 3: observation of microscopy and specimen analysis skills	
Total mark:	

Student name (PRINT):		**Assessor name (PRINT):**	
Student signature:		**Assessor signature:**	
Date:		**Date:**	

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.		January 2021
v1.1	NCFE rebrand.		September 2021
v1.2	OS review Feb 23		February 2023
v1.3	Sample added as a watermark	November 2023	16 November 2023