ARTP Cardiopulmonary Exercise Testing (CPET) Certificate

Standards Document for Candidates

V1.6 May 2025

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1. INTRODUCTION

The following document describes the standards set by the Association for Respiratory Technology and Physiology (ARTP) as the provider of the Cardiopulmonary Exercise Testing (CPET) Certificate. It outlines the minimum requirements candidates need to achieve to complete ARTP CPET Certification process.

2. STANDARDS FOR PROVISION OF CPET TRAINING

To successfully complete the ARTP CPET Certificate, candidates should undertake a period of theoretical and practical skills training with a suitably qualified mentor. ARTP recommends that all mentors meet the minimum standards outlined in this document.

2.1. Mentor requirements
- It is envisaged that most candidates will complete their training within their own workplace, accessing the CPET service delivered within their own Trust.
- If there are no suitable mentors within their own practice, the candidate should find a suitable mentor that meets the criteria from another organisation.
- Mentors should familiarise themselves with the ARTP Cardiopulmonary Exercise Testing Professional Examination process to ensure that they can support and guide candidates
- ARTP recommends that mentors have achieved a minimum of the ARTP Practitioner Certificate in CPET, or equivalent (e.g., performs and reports a minimum of 25 CPET per year), and have maintained their competency in the performance of quality assured CPET in a clinical setting.
- Mentors should demonstrate experience of teaching or training in healthcare.
- Mentors must ensure that candidates receive adequate support and mentoring throughout the CPET professional examination process.

3. PRE-REQUISITES FOR CPET CANDIDATES

ARTP recommends that candidates meet the following pre-requisites, described below, to successfully complete the ARTP CPET Certificate. It is the responsibility of the candidate to ensure that they are competent for each of the prerequisites.

3.1. General knowledge
- Understand and perform basic mathematical operations (multiplication, division, decimals, and percentages)
- Demonstrate an understanding of calculating ratios and slopes
- Use basic functions of a scientific calculator

3.2. Basic PC skills
- Use the basic functions of a computer
- Have basic mathematics skills
- Demonstrate ability to use drop down menus, select and accept options, etc.

3.3. Specialist knowledge
- Competent to perform quality assured spirometry
- Comprehensive understanding of quality control and calibration processes

* We recommend completion of a suitable CPET course, which covers the following key learning outcomes

Suggested key learning outcomes
- Normal cardiac and respiratory physiological responses to exercise
- Safe practice, contraindications to test, when to terminate test
- Preparing the patient for the test
- Performing the test
- Protocol selection based on reason for referral
- Patient set-up
- Exercise ECG interpretation
- Test termination
- Appropriate data collection for analysis
- Interpretative strategies based on reason for referral
- Identifying an abnormal response to exercise
- Generating an effective report and answering the clinical question
- Delivering a quality assured service

3.4. Clinical opportunity
- Access to regular CPET testing

4. LEVELS OF ARTP CPET CERTIFICATE

There are three levels of the ARTP CPET Certificate: CPET Full (Performing & Reporting), CPET Performing and CPET Reporting. Examinations can be taken in adult testing, paediatric testing, or both. More information is provided in Section 9 for those undertaking a combined adult and paediatric testing portfolio.

4.1. The CPET **Full level** process is an assessment of competency in the performance and interpretation of quality assured CPET. Candidates are required to complete:
- A portfolio of evidence
- A Multiple-Choice Questionnaire (MCQ) examination specific to acting in a lead practitioner role and relevant clinical questions.
- A practical Objective Structured Clinical Examination (OSCE)
- A clinical VIVA specific to the clinical interpretation of CPET data

4.2. The CPET **Performing level** process is an assessment of competency to act as the lead in the performance of quality assured CPET. Candidates are required to complete:
- A portfolio of evidence
- A Multiple-Choice Questionnaire (MCQ) examination specific to acting in a lead practitioner role and relevant clinical questions.
- A practical Objective Structured Clinical Examination (OSCE)

4.3. The CPET **Reporting level** process is an assessment of knowledge and competency to interpret and report quality assured CPET. Candidates are required to complete:
- A portfolio of evidence
- A clinical VIVA specific to the clinical interpretation of CPET data

5. REGISTRATION PROCESS

Applications for CPET certification are made online via the ARTP website www.artp.org.uk/cpet-certificates.

6. ARTP CPET PROFESSIONAL EXAMINATION FEES

The fees for each component of the ARTP CPET Certificate are detailed below. All aspects inclusive of the fee are fully explained throughout this document. Registration fees are as follows:

Individual Examination Costs*

	ARTP Member	Non-Member
Full level	£525	£625
Performing Level	£445	£475
Reporting Level	£225	£250
5 year renewal	£100	£120

*Application fees may be revised or subject to change; please see the ARTP website for the current fees. Requests to complete this process from outside of the UK and any international requests will be dealt with on a case-by-case basis. Costs will be based on numbers required, location etc.

7. CANDIDATE COMMUNICATION INFORMATION

7.1. Upon registration, candidates will receive an automated email notifying them that registration has been successful.

7.2. Candidates will receive the required information which will enable login and commencement of the multiple-choice questionnaire (MCQ) prerequisite process.

7.3. On successful completion of the MCQ, candidates will have a 12-month window to complete the portfolio and OSCE and/or VIVA assessment(s).

7.4. On successful completion of the MCQ, a further email will be sent to the candidate advising them of their log in details to access the PebblePad portfolio system.

8. CPET PORTFOLIO OVERVIEW

8.1. Portfolio requirements

- The CPET portfolio consists of several sections. The sections that must be completed will depend on the level of certification that the candidate has registered for.
- The required sections within the portfolio must be successfully completed to the defined minimum standard to complete the certification process.
- When completing the portfolio, the candidate will be asked to answer questions and/or provide evidence of their competence.
- When answering questions, the candidate will be required to write in the text boxes and tables provided or the candidate may have the option to upload a document or image.
- When completing sections requiring evidence of competence, an upload option is provided for each piece of evidence required. All submissions must be appropriately anonymised.
- The candidate will be able to amend any part of their portfolio until it is submitted; once submitted no further amendments can be made.
- There are two outcomes to the portfolio – Pass or Fail
  - In the case of a fail being awarded, the portfolio will be referred to the candidate with appropriate standardised feedback outlining the amendments that are required to achieve a pass. The portfolio must be completed by the deadline date provided (including reattempts).
  - Following an initial fail, a further **two** portfolio submissions are allowed. If further submissions are necessary, there is an administration fee of £50 per attempt.

9. PORTFOLIO CONTENTS

9.1. The PebblePad portfolio platform outlines the portfolio content with appropriate instructions provided where required.

9.2. The portfolio is comprised of the following sections for both adults and paediatrics. Where differences arise, these will be highlighted.

9.3. **Background information:** Adults and Paediatrics.
- To successfully complete this section the candidate should describe:
  - Service overview including staffing, location etc
  - Frequency of testing per week/month
  - The range of patients tested
  - Quality assurance protocols
  - Infection control procedures
  - Clinical reference values used (Reporting portfolio)
  - Statement describing any variation away from current ARTP guidance with justification (e.g., reference values or determination of maximal test) (Reporting portfolio)
  - Any submitted supporting documents should be identifiable from the candidate's own organisation, for example includes organisational logo.

9.4. **Performance criteria:**
- The candidate is required to demonstrate that standards and safety are adhered to when performing CPET. To successfully complete this section the candidate should:
  - Provide their local standard operating procedure for the performance of quality assured CPET. (Uploaded document).
  - Evidence of decision process around incremental workload determination.
  - Any submitted supporting documents should be identifiable from the candidate's own organisation, for example includes organisational logo.

9.5. **Knowledge base:**
- The candidate should provide evidence of completion of a suitable CPET course where possible e.g., certificate of attendance. (Uploaded document).
- The candidate should provide evidence of ECG knowledge, e.g., local formal certification, course attendance. (Uploaded document).

9.6. **Patient Testing: CPET Full/Performing Portfolio**
- This section requires the candidate to produce evidence of competency in patient testing.
- To successfully complete this section, candidates **must**:
  - Upload an example of 1 test referral which was identified as inappropriate, clearly stating justification.
  - Upload 1 example of decision not to proceed to test based on clinical safety grounds with short reflection.
  - Upload 1 example of test termination due to technical issue with short reflection.
  - Upload 1 example of test termination based on clinical safety grounds with short reflection.
  - Upload 2 examples of where a clinical test did not go as planned with reflective account.
  - Upload evidence of 25 complete tests which the candidate has performed with a patient and which meet the following criteria:
    - 8-12 minutes in duration.
    - Are terminated due to symptom limitation.

- Includes relevant technical comments.
- Obtained within 12 months of the registration date.

9.7. **Reporting: CPET Reporting Portfolio**
- This section requires the candidate to produce evidence of competency in patient testing.
- To successfully complete this section, candidates **must**:
  - Upload evidence of 25 tests which candidate has provided clinical interpretation, technical report.
    - Eight of which must meet the following criteria:
      - 1x normal test
      - 1x deconditioned
      - 1x submaximal effort
      - 1x cardiac impairment
      - 1x ventilatory limitation
      - 1x gas exchange abnormality
      - 1x dysfunctional breathing
      - 1x pre-operative assessment
      - 17 x any type
  - Examples should be provided from within 12 months of the onset of portfolio.
  - Candidates should notify ARTP if there is any inability to achieve these pre-requisite criteria.
  - Where the candidate is completing the CPET Reporting Examination in isolation from the CPET Certificate, candidates will also be required to upload the following evidence/information:
  - Service overview
  - Frequency of testing
  - Range of patients

9.8. **Quality Review of submitted test reports:** Adults and Paediatrics.
- CPET test reports that do not meet acceptability criteria will be referred to the candidate with appropriate feedback.
- In accordance with professional standards (NMC, RCP, HCPC), all submitted results must be fully anonymised, removing name, identifiable number, date of birth, address etc. If a breach of confidentiality occurs, the marker must immediately cease marking the portfolio. The portfolio will be returned to the candidate in its entirety for revision and amendment and the submission will be considered a fail attempt.
- For all examples, the candidate must have performed the test themselves, with a patient (it is not acceptable to upload CPET reports that the candidate did not perform themselves or were obtained from testing another member of staff).

9.9. **Top up to include paediatric/ combined portfolios.**
- Completing a top up portfolio requires the submission of additional CPET test reports.
- Candidates that have completed the adult certification must submit a further **5** CPET test reports performed on paediatric patients in addition to those submitted within the main portfolio.
- Candidates that have completed the paediatric certification must submit a further **5** CPET test reports performed on adult patients in addition to those within the main portfolio.
- Candidates completing a combined portfolio must complete an additional shortened MCQ that covers the relevant population (adult or paediatric) included in the top up. More information on

this is provided in Section 10.

9.10. **Declaration:** Adults and Paediatrics.
- All candidates are required to download and complete a self-declaration.
- The declaration is a confirmation that all the work within the portfolio is that of the candidate.

10. MULTIPLE-CHOICE QUESTIONNAIRE (MCQ) EXAMINATION: ADULT AND PAEDIATRIC

10.1. **Standard Portfolio:**
- Before registering for the ARTP CPET Certificate process, candidates will be required to complete a multiple-choice questionnaire (MCQ).
- The online MCQ will act as a 'gatekeeper', successfully passing the MCQ ensures prospective candidates have the appropriate underpinning knowledge to proceed with the assessment process.
- The MCQ will be behind a paywall. Failure to pass the MCQ will present the candidate an opportunity to re-sit the MCQ once within the same payment.
- The MCQ consists of 20 questions covering 7 domains (Calibration, quality assurance, contraindications, general testing principles, patient set up, data collection and test termination criteria).
- Candidates will have 45 minutes to complete the assessment.
- Candidates are required to answer 16/20 questions correctly (80%) to pass the examination.
- Feedback on which domain requires improvement will be offered in the case of failure.
- On successful completion of the MCQ, candidates will have a 12-month window to complete the remaining assessments (portfolio, OSCE and/or VIVA)

10.2. **Top up Portfolio:**
- Candidates undertaking a top up portfolio will complete a shortened MCQ in their additional/optional modality.
- The candidate must answer 8/10 (80%) questions correctly to achieve a pass.
- The questions will relate to the relevant population (adult or paediatric) and will be a series of questions relating to technical and clinical interpretation of spirometry test data and test performance.

11. THE OSCE EXAINATION

11.1. Objective structured clinical examination (OSCE) registration - Following successful completion of the portfolio, candidates completing either the Full or Performing certificate will be contacted to book a date to complete their OSCE.

11.2. The OSCE consists of two sections:
- A practical assessment of the performance of a quality assured cardiopulmonary exercise test
- A technical viva

11.3. **The practical assessment**
- The candidate will undergo the OSCE within their own department with the examiner in physical attendance.
- The candidate will be assessed across 5 key performance criteria including:
  - Pre-test preparation (equipment/environment).
  - Pre-test information (patient interaction).
  - Pre-test preparation (patient interaction).
  - Performance of a CPET.
  - Recovery of post-test.
- The candidate has 60 minutes to complete the practical assessment.

- The practical assessment requires the fulfilment of essential and desirable criterion.
- If the candidate fails to fulfil a desired criterion for an element of the assessment, a standardised question will be asked during the technical viva to provide the candidate with the opportunity to demonstrate competence in this area.
- If the candidate is unable to answer the follow up questions prompted by a failed criterion to a sufficient level, the candidate will fail the OSCE.

11.4. **Technical viva**
- The candidate will be given 30 minutes to complete the technical viva.
- The technical viva consists of four compulsory questions and four assessor selected supplemental questions.
- To achieve a pass in the technical viva, candidates must answer four out of four (100%) compulsory questions correctly and two out of four (50%) of the supplemental questions.

11.5. To achieve a pass in the OSCE, the candidate must pass both the practical assessment and the technical viva.

11.6. The practical assessment will have a pass/fail outcome and appropriate feedback provided.

12. THE OSCE PROCESS

12.1. Prior to starting the OSCE, the assessor will introduce themselves to the candidate and provide the candidate with the relevant instructions. This must include:
- The time allowed for all parts of the OSCE.
- The structure of the OSCE process.

12.2. The assessor should ensure that all the candidates' questions have been answered before commencing the assessment.

12.3. The test subject for the OSCE:
- The assessor will assess the candidate completing a CPET.
- The subject performing the CPET should be a willing volunteer.

12.4. **The technical viva**
- Once the practical assessment is complete, the candidate will begin their technical viva.
- The candidate will be asked several pre-defined questions that either relate to the CPET the candidate has performed or are general questions about technical aspects of CPET.

12.5. **Completion of the OSCE and notification of the outcome**
- On completion of the OSCE, the candidate will be thanked for their participation.
- Candidates will not be notified of the outcome of their assessment on the day; they will be notified of the outcome of their assessment by the ARTP Examinations Committee.
- If the candidate fails the OSCE, they will be provided with structured feedback and will be offered a further attempt to achieve a pass.

13. THE CLINICAL VIVA PROCESS

13.1. Following successful completion of the portfolio, candidates completing either the Full or Reporting certificate will be contacted to book a date to complete their OSCE. For those undertaking the Full level, the VIVA will be undertaken on the same day as their OSCE. For those undertaking the Reporting only level, the VIVA will be undertaken via virtual delivery.

13.2. The purpose of the clinical VIVA is to assess the candidate's underpinning knowledge around theory and clinical interpretation of CPET.
- Broadly, the clinical VIVA will include normal and abnormal exercise responses, threshold detection and case interpretation.

13.3. The candidate will have up to 30 minutes to complete the clinical VIVA.

13.4. Immediately before the commencement of the clinical VIVA, the assessor will email a candidate version of the assessment paperwork.
- The purpose of this will be to enable the candidate to closely observe and evaluate any graphical information which the assessor refers to during the examination.

13.5. The clinical VIVA will have a pass/fail outcome.
- To elicit a pass, the candidate will be required to achieve 60% of the available marks.

13.6. **Completion of the clinical VIVA and notification of the outcome**
- On completion of the clinical VIVA, the candidate will be thanked for their participation.
- Candidates will not be notified of the outcome of their assessment on the day; they will be notified of the outcome of their assessment within 5 working days of completing the assessment via email.
- If the candidate fails the clinical VIVA, they will be provided with structured feedback and will be offered a further attempt to achieve a pass.

14. EXAMINATION COMPLETION

14.1. The ARTP CPET certificate is only awarded when the candidate has successfully completed all the required components of the professional examination level for which they have registered in:
- **CPET Full Level**
  - MCQ
  - Portfolio
  - Practical OSCE + Technical VIVA
  - Clinical VIVA
- **CPET Performing Level**
  - MCQ
  - Portfolio
  - Practical OSCE + Technical VIVA
- **CPET Reporting Level**
  - MCQ
  - Portfolio
  - Clinical VIVA

14.2. **Allowances made due to failed attempts**
- In the event of a fail of any stage of the examination process further attempts may be made in order to complete each stage.
- The initial MCQ allows the candidate a maximum of 2 attempts
- The subsequent assessments allow the candidate a maximum of:

3 Portfolio submissions | 2 practical OSCE attempts | 2 clinical VIVA attempts

14.3. If further attempts are required, there will be an additional administration charge of £50 per attempt. Where more than two attempts are required to complete the OSCE, a further charge of £100 will be charged.

14.4. Each request for further attempts will be reviewed on a case-by-case basis and depending upon the reasons for repeated failure, the candidate may be advised to undertake further training before repeat portfolio submissions or assessment attempts are made.

15. RENEWAL OF CPET CERTIFICATE

15.1. Upon successful completion of the CPET certificate examination process, the candidate will be issued with a certificate of achievement.

15.2. The certificate will contain an expiry date. This date will be 5 years from the date of issue.

15.3. Candidates may wish to renew their certificate for a further 5 years.

15.4. The renewal process will require the candidate to submit evidence of maintenance of competency.

15.5. The following evidence will be required to be submitted by portfolio
- **CPET Full Level**
  25 instances of CPET test performance, CPET interpretation and clinical report writing dated within 12 months of renewal date
- **CPET Performing Level**
  25 instances of CPET test performance dated within 12 months of renewal date
- **CPET Reporting Level**
  25 instances of CPET interpretation and clinical report writing dated within 12 months of renewal date

15.6. **Declaration**
- All candidates are required to download and complete a self-declaration.
- The declaration is a confirmation that all the work within the portfolio is that of the candidate.

16. EXTENSIONS AND DEFERRALS

16.1. All candidates are required to submit all assessments and complete the examination process within a period of 12 months after they have completed their MCQ exam.

16.2. There may be occasions, due to unforeseen circumstances, that make it difficult or impossible to achieve the agreed deadline. In this case, the candidate may wish to apply for either an extension or deferral.
Extension – 2 months
Deferral - 6 months (with supporting evidence shown in 16.5)

16.3. Candidates wishing to apply for an extension/ deferral must complete the ARTP Extension and Deferral form found in the candidate resources section of the ARTP website

www.artp.org.uk/cpet-candidate-resources

16.4. The standard process would be to request an extension of deadline.

16.5. Deferrals may only be granted in exceptional circumstance e.g. long-term sickness or a family bereavement. The candidate must provide supporting evidence with their application.

16.6. A 12 month deferral will be granted to a candidate going on Maternity Leave who has sent across their MATB1 form.

16.7. All requests must reach the ARTP no later than two weeks before the deadline/completion date.

16.8. Failure to submit the extension/deferral request form in time will be regarded as a failed submission.

16.9. Each candidate is eligible for two extensions/deferrals without charge. If the candidate requires a further extension or deferral, this will incur an administrative fee of £35.00 per request for 6 additional months.

17. COMPLAINTS PROCESS

17.1. Should a candidate or another person feel dissatisfied and wish to raise a formal complaint regarding any part of the ARTP CPET Certification process they can do so in writing.

17.2. Complaints should be acknowledged by the ARTP Education Committee within 5 working days of receipt. The acknowledgement should say who is dealing with the complaint and when the person complaining can expect a reply. The ARTP complaints procedure can be viewed at https://www.artp.org.uk/resources/policy_complaints

17.3. Ideally, complainants should receive a definitive reply within four weeks of receipt. If this is not possible because for example, an investigation has not been fully completed, a progress report should be sent with an indication of when a full response will be given.

17.4. Whether the complaint is upheld or not, the reply to the complainant should describe the action taken to investigate the complaint, the conclusions from the investigation, and any action taken because of the complaint.

17.5. If the complainant feels that the problem has not been satisfactorily resolved, they can request that the complaint be reviewed at ARTP Council level. At this stage, the complaint will be passed to the ARTP President.

17.6. The request for Council level review should be acknowledged within 5 working days of receiving it. The acknowledgement should say who will deal with the case and when the complainant can expect a reply.

17.7. The ARTP President may investigate the facts of the case themselves or delegate a suitably senior person to do so. This may involve reviewing the paperwork of the case and speaking with the person who dealt with the complaint.

17.8. If the complaint relates to a specific person, they should be informed and given opportunity to respond.

17.9. The person who dealt with the original complaint at Stage One should be kept informed of what is happening.

17.10. Ideally, complainants should receive a definitive reply within four weeks. If this is not possible because for example, an investigation has not been fully completed, a progress report should be sent with an indication of when a full reply will be given.

17.11. Whether the complaint is upheld or not, the reply to the complainant should describe the action taken to investigate the complaint, the conclusions from the investigation, and any action taken because of the complaint.

17.12. The decision taken at this stage is final, unless the Council decides it is appropriate to seek external assistance with resolution.

17.13. **External Stage**
- The complainant can complain to the Charity Commission at any stage.
- Information about the kind of complaints the Commission is involved with can be found on their website at: www.charitycommission.gov.uk/publications/cc47.aspx

18. APPEALS PROCESS

18.1. In the instance where a candidate feels they have been unfairly assessed or under graded in any aspect of their examination, they have the right to appeal that decision.

18.2. A candidate wishing to appeal must do so in writing to the ARTP Education Committee within two weeks of being notified of the outcome of their assessment. The ARTP Education Committee should acknowledge receipt of the appeal within 5 working days. The ARTP Appeals procedure can be viewed at www.artp.org.uk/appeals

18.3. The appeal will be submitted to the ARTP Education Committee, which will include one or two Executive Board or Education Committee members and another two members who are not involved with ARTP committees but have knowledge of the relevant process. All members of the Appeals Committee must not be directly involved with the individual appeal case.

18.4. All relevant paperwork will be reviewed and re-evaluated by a second assessor following the standard assessment process. As the OSCE is an observed assessment, the Appeals Committee may contact the candidate and the assessor for further information before deciding.

18.5. Candidates should receive a definitive reply within 8 weeks of receipt of their appeal letter. If this is not possible because for example, an investigation has not been fully completed, a progress report should be sent with an indication of when a full reply will be given.

18.6. Whether the appeal is upheld or not, the reply to the candidate should describe the action taken to investigate the appeal, the conclusions from the investigation, and any action taken because of the appeal.