

HKCRRT Certified Ultrasonographers

1. Admission of Members

- 1.1 A candidate may admit as a Member of the HKCRRT (Ultrasonography) and is entitled to use the title MHKCRRT(US) if satisfying the enlisted requirements.
- 1.2 Being a Radiographer registered with the Hong Kong Radiographers Board; **AND**
- 1.3 Have had 5 years of post-registration working experience in radiography, medical imaging or radiotherapy; **AND**
- 1.4 Academic requirements
 - 1.4.1 A recognized Master degree or above in (Ultrasonography); **OR**
 - 1.4.2 A recognized Bachelor degree in medical imaging or related fields or Professional Diploma in Diagnostic Radiography (PDDR) of the Hong Kong Polytechnic University or equivalent, plus a Ultrasonography specialist qualification recognized by the College (as outlined below in Section 2); **AND**
- 1.5 Have completed the required clinical training or experience (as outlined below in Section 3); **AND**
- 1.6 Being recommended by the Council.

2. Part A: Academic Requirements

Syllabus

(A) Principles and Instrumentation on Sonography

- I. Patient care, safety and communication
 - Patient identification / documentation
 - Patient interaction
 - Verification of requested examination
 - Infection control
 - Emergency situations
 - Universal precautions
 - Bioeffects and ALARA
- II. Physics principles and instrumentation
 - Properties of ultrasound waves
 - Interactions of sound with tissue
 - Power, intensity, and amplitude
 - Units of measurement
 - Artifacts
 - Imaging instruments
 - Hemodynamics
- III. Ultrasound transducers
 - Transducer construction and characteristics

- Transducer types (sector, linear, phased arrays, etc.)
- Spatial resolution
- Transducer selection

IV. Pulse-echo instrumentation

- Display modes and their formation (A-mode, B-mode, M-mode, 3-D, etc.)
- Transmission of ultrasound
- Reception of ultrasound (preprocessing)
- Beam former
- Postprocessing of ultrasound signals
- Pulse-echo imaging artifacts
- Tissue harmonic imaging
- Realtime ultrasound instrumentation
- Recording and storage devices

V. Doppler instrumentation and hemodynamics

- Ability to acquire color flow image
- Ability to acquire a Doppler spectral image
- Ability to take measurements from the spectral waveform
- Hemodynamics

VI. Quality assurance / quality control of equipment [5%]

- Preventive maintenance
- Malfunctions
- Performance testing with phantoms

(B) *Anatomy & Physiology*

- Normal anatomy and physiology
- Normal variant
- Perfusion and function

(C) *Pathology*

- Abnormal perfusion and function
- Abnormal physiology
- Congenital anomalies
- Postoperative (surgically-corrected) anatomy
- Differential Diagnosis

(D) *Vascular Technology specialty (VT)*

- Cerebrovascular
- Venous
- Peripheral Arterial
- Peripheral Venous
- Abdominal/Visceral

(E) *Integration of Data*

- Incorporate outside data (Clinical assessment, Past history, Lab values)
- Reporting results
- Serial Studies

- (F) **Protocols**
 - Clinical standards and guidelines
 - Measurement techniques
- (G) **Treatment**
 - Sonographer role in procedures
- (H) **Other**
 - Managing medical emergencies
 - Trauma

3. Part B Clinical Requirement

- 3.1 Candidates are required to complete 800 US examinations within a 2-year period. The 800 US examinations shall be related to the subspecialty.
- 3.2 The clinical component requires the candidate's Supervisor to acknowledge completion of the required clinical examinations.

4. HKCRRT Certification Examination for US:

- 4.1 A US specialist qualification is available to candidates who have attained a grade of 75% or above in an examination set by the US Faculty Committee of HKCRRT **AND** performed the required clinical training as outlined above in Section 3.
- 4.2 The Certification Examination will involve a 3-hour paper consisting of not more than 150 multiple choice questions.
- 4.3 The approximate percentages of questions related to each topic are listed below:

<i>US physics and principles</i>	10%
<i>Anatomy and physiology(related to the specialty)</i>	30%
<i>Pathology (related to the specialty)</i>	40%
<i>Patient care</i>	3%
<i>Integration of data(related to the specialty)</i>	8%
<i>Protocol(related to the specialty)</i>	3%
<i>Treatment(related to the specialty)</i>	3%
<i>Others</i>	3%
	<u>100%</u>

5. Admission of Fellows

- 5.1 A candidate may admit as a Fellow of the HKCRRT and is entitled to use the title FHKCRRT (Certified Ultrasonographer) if satisfying the enlisted requirements.
- 5.2 Being a Radiographer registered with the Hong Kong Radiographers Board; **AND**
- 5.3 In possession of the academic & clinical requirements
 - 5.3.1 A recognized Doctorate in Ultrasonography with 8 years of post-registration clinical experience; **OR**
 - 5.3.2 A recognized Master degree in Ultrasonography or a US specialist qualification recognized by the HKCRRT; plus 3-year full time equivalent post specialization clinical experience of US; **AND**

- 5.4 2 publications in peer-reviewed journals; **AND**
- 5.5 2 episodes in teaching / lecturing / presentation in open conferences; **AND**
- 5.6 Being recommended by the Council.
- 5.7 The clinical experience component requires the candidate's Specialty Supervisor to acknowledge completion of the requirements.
- 5.8 If applicants apply for fellowship directly, the clinical requirement as stated in Section 3 should be fulfilled.

6. Continuing Professional Development (CPD)

- 6.1 Once certified in Ultrasonography (US), the US specialists should perform at least 300 cases each year and complete 45 CPD credits in each triennium, of which 30 credits (or 30 hours of lectures) are relevant to Ultrasonography in order to maintain the certified specialist credential.