

**PROFESSIONAL BOARD FOR RADIOGRAPHY AND CLINICAL TECHNOLOGY
GUIDELINES FOR EXAMINATIONS OF FOREIGN QUALIFIED RADIOGRAPHERS IN
THE CATEGORY RADIOTHERAPY RADIOGRAPHY**

A. INTRODUCTION

All individuals who practice any of the health care professions incorporated in the scope of the Health Professional Council of South Africa (HPCSA), obliged by the Health Professions Act, 1974, to register with the HPCSA, such that failure to do so constitutes a criminal offense.

In terms of the policy of the Professional Board for Radiography and Clinical Technology all foreign qualified candidates are required to challenge the entry examination in order to determine whether or not they can register with the HPCSA. Registration with the HPCSA does not imply that employment is guaranteed. The onus for finding employment rests with the candidate.

B. ADMISSION CRITERIA

1. Candidates who are registerable as radiotherapy radiographers/ radiotherapists/ radiation therapists/ radiation therapy technologists (herein after referred as **therapists**), if applicable, in the country where they have obtained their radiography qualification will be granted entry to the examination.

Proof of the following must be provided:

- i) registration as a therapist in the country in which the qualification was obtained.
 - ii) current registration as a therapist in the country in which the candidate is currently employed
2. A candidate, who has trained in, or is employed in a country where professional registration as a therapist is not a requirement, must provide an affidavit to verify this.

3. A minimum of twelve (12) years of schooling must precede the training in radiography.

Proof of the following must be provided:

- i) Certificate of highest level of schooling achieved

4. The duration of the therapy training should have been a minimum of three (3) years.

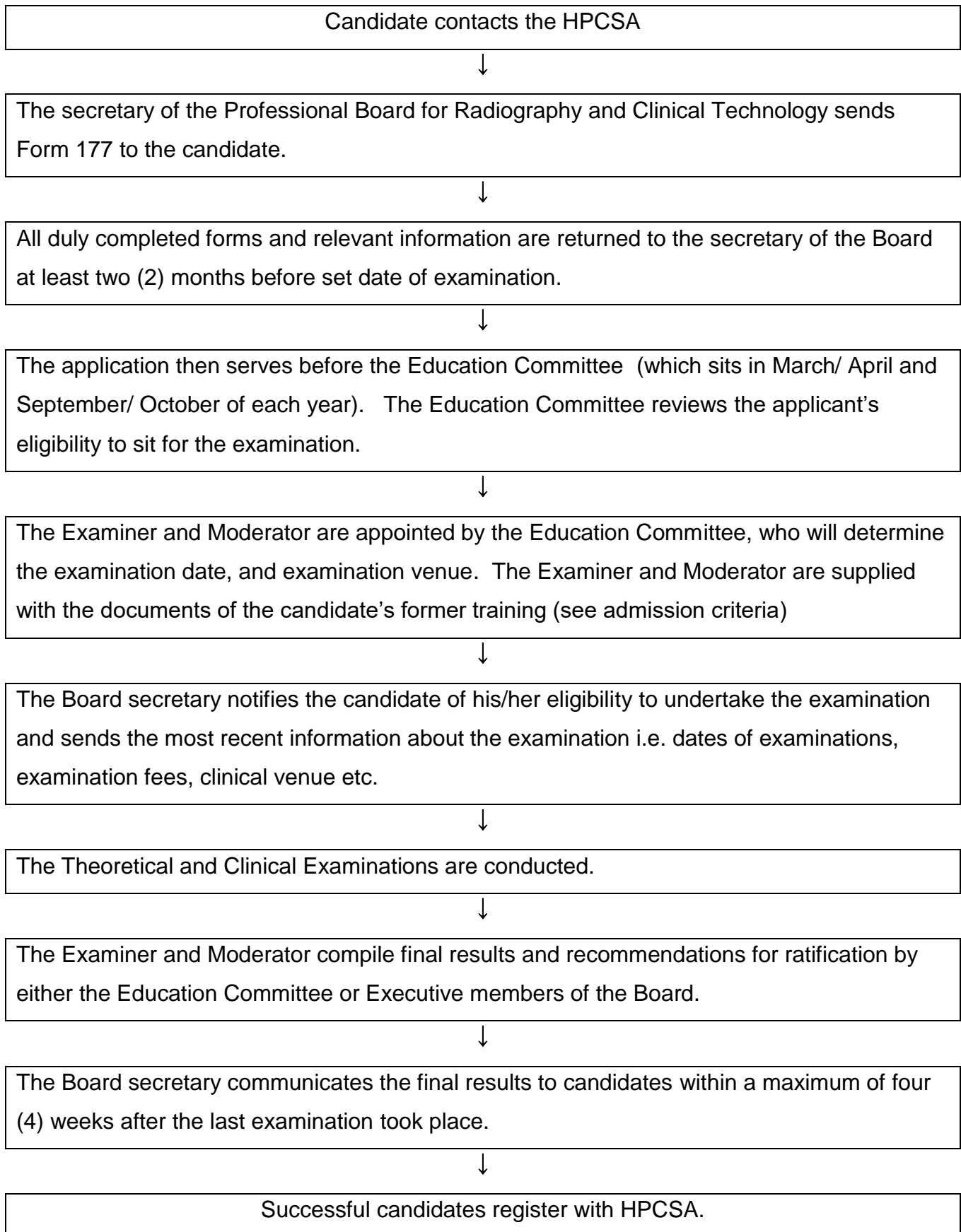
Proof of the following must be provided:

- i) A summary of the training course undertaken, (to include the subjects completed and an outline of the contents of each subject).
- ii) A summary of the clinical training received during the training course, (to include the total amount of time spent in clinical training, as well as a breakdown of the amount of time spent in the different divisions of the radiotherapy department, including the time worked on major equipment during clinical training)

N.B.: Where the duration of the training is less than three (3) years, entry to the examination will not be granted. The candidate should be referred to a Higher Education Institution to apply to apply for Recognition of Prior Learning of a South African qualification.

5. The training should be of an academically acceptable standard and the candidate should have had adequate clinical training that is in line with the South African minimum requirement. In order to assess the candidate's academic and clinical/practical knowledge and skills, the candidate will be given the opportunity to do a written examination and a clinical assessment. The latter will be arranged at the discretion of the examiner and moderator and could include an Objective Structured Clinical Examination (OSCE), and/or an assessment in a clinical setting on patients or as a simulated clinical assessment.

C. APPLICATION AND EXAMINATION PROCESS



D. PURPOSE OF EXAMINATION

The purpose of the examination is to establish that all foreign qualified radiographers applying to work in South Africa are able to:-

1. Demonstrate competence in the performance of radiotherapy procedures, appropriate to the clinical presentation of the patients to ensure optimal patient preparation and planning for radiation treatment
2. Apply scientific knowledge and professional skills to perform therapeutic procedures for the accurate delivery of the radiation treatment prescribed.
3. Able to apply knowledge, clinical skills, human rights, medical law and ethics to provide and facilitate holistic patient care responsibly and effectively according to patients' needs
4. Demonstrate a critical understanding and application of quality assurance and radiation protection as appropriate to Radiation Oncology.
5. Demonstrate scientific knowledge and technical skills to perform basic radiation oncology laboratory techniques and procedures for optimal patient immobilisation and accurate delivery of the prescribed radiation treatment.
6. Demonstrate appropriate administrative / management skills and competencies appropriate to working in Radiation Oncology.
7. Display knowledge and understanding of the principles of and treatment accessories used in Radiation Oncology. (Note that familiarity with particular equipment brands is not a requirement)
8. Display an awareness and understanding of the South African health care system.

E. ADMISSION TO THE EXAMINATION

1. A duly completed Form 177 with relevant documentation must be submitted two (2) months prior to the set date of the examination.
2. Approval for entry to the examination must be granted by the Education Committee of the Board.
3. A non-refundable examination fee has to be paid to HPCSA four (4) weeks prior to the set date of the examination.

F. VENUE OF EXAMINATION

1. The examination will be conducted at a venue approved by the Professional Board for Radiography and Clinical Technology.
2. Candidates are responsible for their own traveling and accommodation costs.

G. FORMAT OF EXAMINATION

The examination is held annually in June/ July of each year. The theoretical examination and clinical assessment will be conducted on the same day.

Section 1: Theoretical Examination

1. This examination consists of one- 3 hour paper that is set at the equivalent level of the South African qualification.
2. This examination covers the integration of the following: radiation therapy treatment techniques; radiation physics; radiation dose planning (including localization); radiobiology; care of the patient undergoing radiation treatment; general oncology principles; construction of immobilization devices and beam modification devices

Section 2: Clinical Assessment

The venue for the clinical examination is approved by the Education Committee of the Board.

1. The clinical assessment will be in 2 parts. The assessment will be set at the equivalent of the South African radiotherapy qualification.
2. Part 1 of the clinical assessment will consist of four (4) tasks or assessment stations (in the case of an OSCE) that take approximately twenty (20) minutes per task.
3. This examination includes the critical assessment of all or any combination of simulator and portal images; dose calculations; mould-room practice; computerized treatment planning.
4. After a short recess the candidate will proceed to Part 2 of the clinical assessment. This will involve the treatment set-up, image verification and treatment delivery for two (2) patients. This can be simulated assessment or involve patients.

The assessment criteria for Part 2 of the clinical examination will include the following:

- Preparation of room and accessories for treatment
- Patient preparation
- Patient care and communication
- Systematic team approach to treatment set-up
- Systematic approach to treatment delivery
- Recording of patient treatment
- Safe handling of equipment and accessories
- Quality assurance of port-images taken

H. CALCULATION OF FINAL MARK

Theoretical examination – contributes 50% towards final mark

Clinical assessment – contribute 65% towards final mark

I. FULLFILLMENT FOR REGISTRATION

1. A sub-minimum of 50% is required for the Theoretical examination
2. A sub-minimum of 50% is required for each task of Part 1 of the clinical assessment
3. A pass mark of 65% for Part 2 of the clinical assessment must be obtained.
4. The candidate is required to obtain an overall final mark of 50% in order to register with HPCSA.

The candidate will only be allowed to sit for the entry examinations for a maximum of three (3) times.

J. BRIEF OVERVIEW OF 3rd YEAR SYLLABI

- a) Radiation therapy – treatment of tumours according to anatomy:
skin & lip; oral cavity; tonsil; nasopharynx; larynx; gastro-intestinal; thymus; pancreas;
liver; lung; cervix; kidney; bladder; testes; urthera; penis; soft tissue; bone; paediatric
cancers; breast; non-malignant tumours, with regard :-
- patient history
 - history, staging and spread
 - investigations
 - target volume
 - treatment methods
 - treatment technique
 - prescription dose
 - aspects of set-up
 - verification
 - documentation
 - side-effects
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- b) Radiation Dose planning – Immobilization and localization of sites mentioned in
radiation therapy; principles of dose planning; dose specifications; combination and
calculation of external beam fields; electron beam dose planning; contouring
methods; beam modifications; 2-dimensional and 3-dimensional treatment planning;
Treatment equipment – superficial x-rays; orhtovoltage machines; Cobalt-60
machines; Linear accelerators; Brachytherapy treatments; sealed and un-sealed
radio-active source treatments
- c) Clinical Oncology – Management of tumour sites mentioned in radiation therapy, in
terms of: tumour pathology, tumour spread, clinical presentations, complications,
prognosis, treatment methods, diagnosis, histology, investigations, staging, primary
aim of treatment, dose and fractionation, multi-disciplinary approach, systemic
treatment, clinical trials

- d) Radiation Physics & protection – Interaction of photons with material; attenuation processes; Half-value layer; effect of photons on material; luminescence; fluorescence; radiation measurement; radiation quality; filters; clinical radiation generators - kV & MV x-rays, Cobalt-60, accelerated particles; radiation protection – dose equivalent, protection, personnel monitoring; brachytherapy; beam calibration

K. SUGGESTED READING LIST

1. Dobb J , Barratt A, Ash D. **Practical Radiotherapy Planning**. 3rd edition. London : Edward Arnold, 1999. ISBN: 0340706317.
2. Bomford CK, Kunkler IH, Sherriff SB, J Walter & H Miller . **Walter & Millers text-book of Radiotherapy: Radiation Physics, Therapy & Oncology**. 6th edition. Churchill Livingstone, 2001. ISBN: 0443062013.
3. Rubin P . **Clinical Oncology: A multi-disciplinary approach for Physicians & students**. WB Saunders, 2001. ISBN: 0721674968.
4. Khan, F.M. **Treatment Planning in Radiation Oncology**. 3rd edition. Lippincott Williams and Wilkins, 2003. ISBN: 0781730651.
5. van Dyk, J. **The Modern Technology of Radiation Oncology**. Medical Physics Publishing, 1999
6. Faithfull S, and Wells M. **Supportive care in Radiotherapy**. Churchill Livingstone, 2003. ISBN: 0443064865.
7. Chao KSC, Perez CA, and Brady LW. **Radiation Oncology: Management Decisions**. 2nd edition. Lippincott Williams and Wilkins, 2001. ISBN: 0781732220.

L. REMARKING OF SCRIPTS

Only candidates who had obtained a minimum mark of 40% in the theoretical examination may apply for their scripts to be remarked. The Board manager may be contacted for information about the fee involved and procedure to follow.

Should a candidate fail the clinical examination, no re-assessment will be allowed.

M. ADDITIONAL INFORMATION

For further enquiry contact:

RCTBoard@hpcsa.co.za