



Ziauddin University

Program: MD in Diagnostic Radiology

**Department: Diagnostic Radiology
Ziauddin University and Hospital**

STATUTES

1. The minimum duration of studies for M.D. Degree shall be of four years.
2. The requirement for the degree of M.D. shall be:

At the end of 4 years training students will be examined. Three parts of examination:

1. Theory Examination
2. Clinical TOACS / Viva Voce
3. Defense of Thesis

He / she will be allowed to appear examination when he/she has fulfilled all criteria:

1. 4 year satisfactory training certificates by supervisor
2. Approval of thesis
3. One paper and one review article (Published or accepted for publication in PMDC approved Journal)
4. Compulsory preparatory courses / mandatory skill training workshops

REGULATIONS

1. Application for admission shall be made to the Registrar on the prescribed form. Candidates possessing MBBS or equivalent qualification recognized by PMDC and have done one year of House Job in a position recognized by PMDC. Candidates with experience in Radiology will be preferred. Eligible candidates may be required to pass an entrance test and will be interviewed for suitability by a committee appointed by the BASR. Candidates accepted for training will be given a trainee appointment in the hospital for which they will receive a stipend.
2. To produce experienced and skillful Radiologists who will utilize information gained from the appropriate utilization of imaging studies, to learn how to knowledgeably discuss and treat a patient's condition. Clinical experiences are intended to assist transition from didactics to integrated clinical evaluation, decision making and management of patients with medical problems.
3. Correct diagnosis and appropriate management of the patient often depend on timely diagnostic imaging techniques. Therefore, the resident must understand and appreciate the appropriate indications for and the merits of the available imaging procedures. Furthermore, he/she should be able to interpret the resultant images in order to facilitate appropriate and timely patient management.
4. Each student will be continuously evaluated through evaluation and log books in each year of the course. The examination shall cover not only the formal material in the syllabus but also include reading and discussion of literature emphasizing on the ability to solve problems of the types trainee is likely to confront while working independently. At the end of four years a qualifying examination will be given which shall consist of a written and clinical examination TOACS / Viva Voce.

5. If the progress of the student is unsatisfactory, the candidate will be informed in writing to improve. If the candidate fails to improve despite warning, the BASR will recommend the termination of admission.

Regulation Relating to Clinical Training

Objective

At the end of the training of MD in Diagnostic Radiology, the candidate should have developed the following expertise:

Clinical

- To provide supervised training in the field of Radiology.
- Demonstrate and discuss the appropriate and judicious ordering of various radiologic examinations.
- Demonstrate a basic understanding of the investigative approach for interpretations of examinations.
- Demonstrate a thorough understanding of methods, indications, and contraindications for commonly ordered radiologic examinations.
- Demonstrate ability to interpret (appropriate to the level of training) the more common examinations with an emphasis on the interpretation of chest radiography and emergent plain film examinations.
- Demonstrate knowledge of the use of the Radiology department as an appropriate and cost-effective way to solve common clinical problems.
- Demonstrate knowledge of the proper sequence of procedures to evaluation for specific clinical problems.
- Demonstrate and discuss radiation safety including radiation biology, dosimeter, and exposure limits, radiation protection and waste disposal.
- Describe/discuss the many procedures of interventional radiology, and how they complement traditional surgical options.
- Understand the use of PACS (Picture Archiving and Communication System), access to radiology ordering and reporting systems.
- Describe the use, indications, risks, complications and differences of contrast used in CT scanning, interventional radiology and MRI.
- At the completion of the radiology rotation, the student should be able to:
 - Understand the role of the Radiologist on the health care team and the relationship of Radiology to other clinical disciplines.
 - Develop an appreciation of the Radiologist's needs for adequate clinical history.

Administrative

- Be a role model member of the patient care team and display communication skills with other health professionals, community, patient's family etc.
- Produce administrators with good administrative qualities.
- Ability to advise or organize training for other professional / paramedical colleagues & trainees in areas pertinent to his own interest and acquired skills.

Research

The prime objective of research training is to promote/enhance critical thinking in day to day professional life.

Thesis

Synopsis

By the end of the first year of training a detailed synopsis defining the subject of the research, the objectives, the methodology and references must be submitted to the postgraduate office. This will be evaluated by the professor / supervisor / Dean of Research; and finally approved by the Board of Advanced Studies and Research.

Final Thesis

By the end of 4 years training a final thesis must be submitted to the postgraduate office for evaluation by the Board of Advanced Studies & Research. The panel of examiners will also include external examiners before being awarded the MD degree and the candidate will undergo a defense of the thesis before a committee.

Pre-requisite for Submission of Thesis

- The Supervisor shall submit satisfactory progress and report of completion of training which may be placed before the board.
- Attend compulsory preparatory courses.
- One paper and one review article (Published or accepted for publication in PMDC approved Journal).

THESIS

The thesis should be a piece of work embodying either a discovery of new facts or a fresh interpretation of facts or theories. In either case the work should show the candidate's capacity for critical assessment, interpretation and judgment.

GUIDELINES

The thesis should embody original observations together with the analysis of the data collected and conclusions drawn. The candidate should make a statement in the summary of the thesis in what respect his/her work has contributed to the knowledge in the selected field of specialty. The bibliography of the thesis should contain the list of references which s/he has read first hand and quoted in the body of the thesis. The passages from the books should not be copied in the thesis but these must be clearly indicated as such and their sources shall be given.

The supervisor will certify the work of the candidate himself/herself.

- The thesis must be written on paper 8 1/2" x 11" with a margin of 1 1/2" on each side. Only one side of the paper is to be typed. It shall be temporarily bound.
- The thesis must be checked and approved by the supervisor before final submission.
- Five copies of the thesis shall be submitted to the Department of Examination for evaluation.
- The Department of Examination shall submit the thesis to the BASR for appointment of external examiners.

THESIS EVALUATION

- The Board of Advanced Studies and Research shall appoint external examiners with scholarly background in relevant fields.
- The thesis will be examined separately by both examiners and evaluated on the given guidelines. The examiners shall send the evaluation report to the Department of Examination.
- If the thesis is approved, it will be classified as "Accepted", "Commended" or "Highly Commended". Successful candidates whose thesis has been accepted as "Highly Commended" will be declared to have passed the examination with distinction.
- After the examiners approve the thesis, any corrections or alteration agreed to during the examinations should be incorporated. The thesis should then be bound with the name of the author and title on the cover.

INADEQUATE THESIS

If the thesis is not approved it will be classified by the examiners as:

- Partially inadequate and requires minor changes and no extensive revision is required which should be resubmitted within 6 months. The supervisor may be authorized to check the corrections before submission to the University as "Accepted".
- Inadequate and requires extensive revision which may be resubmitted in the revised form within 6 months. The revised form of the thesis will require approval by the external and internal examiners.
- Totally inadequate will be the thesis which is rejected.

- The candidates with inadequacies in thesis of grades mentioned above will resubmit the thesis within 6 months, failing doing so will be considered to have failed in thesis and will submit fresh thesis if they so desire.
- Inadequacy in the above means the candidate will submit a fresh thesis and reappear in the written examination if s/he is interested.

DEFENCE OF THESIS

- Eligible (see Pre-requisite for submission of thesis).
- Candidates whose thesis have been evaluated and reported as “Accepted” by the examiners.
- Final Viva Voce Examination.
- The BASR shall appoint the committee for the final examination which shall consist of the following five members:
 - The chairman of the examination committee is the supervisor of the candidate.
 - Dean of Postgraduate Studies.
 - One internal examiner whose work and experience is in a relevant area.
 - External examiners shall be appointed with relevant experience and publications who are not in service of affiliated College/Institute where the student has conducted his/her research.
- The examination will be held according to the schedule announced by the Department of Examinations.
- The examiners shall report as to whether the candidate has adequate knowledge in the subject matter as well as s/he has defended his/her thesis successfully.
- If the examiners disagree to the acceptance or rejection of the thesis, a positive concurrence of four out of the five will be required.

AWARD OF DEGREE

The Controller of Examinations shall submit the evaluation reports of the examiners and the viva voce examination report to the Board of Advanced Studies and Research, which shall decide whether the MD is awarded.

STRUCTURED TRAINING PROGRAM

The training program will comprise 4 years of training in Diagnostic Radiology and in subspecialties. This training will be under the supervision of the respective faculty.

RECOMMENDED ROTATION SCHEDULE FOR MD IN DIAGNOSTIC RADIOLOGY

YEAR 01	
General Radiology (X-Ray, Mammography & Fluoroscopy)	04 months
Ultrasound (Including Doppler & Obs-Gynae)	05 months
CT scan	02 months
MRI	01 month
YEAR 02	
General Radiology	03 months
Ultrasound	03 months
CT scan	03 months
MRI	03 months
YEAR 03	
General Radiology	01 months
Ultrasound	02 months

CT scan	04 months
MRI	04 months
Angiography	01 month
YEAR 04	
General Radiology	02 months
Ultrasound	01-1-1/2 months
CT scan	03 months
MRI	03 months
Angiography	01 month
Nuclear Medicine	01 month
Echocardiography	Two weeks

Compulsory Rotation in the Following Sub-specialties

- Nuclear Medicine
- Echocardiography
- Angiography

COMPETENCY LEVELS

The evaluation of competence of a specialist is a varied and complex issue to be judged with certainty. However, evaluation of skills can be taken as a guideline only in the general evaluation process.

In the following tables competence levels have been classified into:

O : Observer status

A : Assistant status

SP : Supervised performance

P : Performance independently

At the end of training the trainee is expected to obtain competency level of 'P' (independent function) in all areas.

EVALUATION AND EXAMINATIONS

The evaluation process will include:

- Continuous evaluation through monthly test and evaluation
- M.D. qualifying exam at the end of 4 years
- Thesis to be submitted during the final year of training

LOG BOOKS

Prescribed log books must be taken from the postgraduate office on submission of a certain fee and maintained regularly by the trainees. These must be submitted to the postgraduate office each year to evaluate the status of training.

M.D. FINAL EXAM

At the end of 4 years of training the trainees will have to appear in an examination which will comprise of Theory Examination (SAQs and MCQs), TOACs & Oral Examination. This will be the final assessment of clinical competence.

At the end of 4 years of training the trainees will have to appear in the 'Defense of Thesis' examination. This will include defense of the thesis submitted by the trainee. The trainee will be expected to exhibit adequate background knowledge of the clinical aspects, applied basic sciences etc. pertaining to the subject of the thesis.

If successful, the trainee will be awarded the 'M.D.' degree.