

Diploma In Medical Oncology (DMO) **(Course duration two years)**

I. Introduction to the diploma course:

Due to acute shortage of trained oncologists in periphery, this full time two year diploma course in medical oncology is designed to train mid-level specialists who should be able to diagnose and safely treat common cancers in a secondary level periphery hospital and shall be experienced enough to refer rare or complicated cancer cases to the relevant tertiary care cancer center.

The medical oncology program faculty shall include a minimum of one full-time qualified teaching faculty member (supervisor). Each of the faculty members must devote substantial time (at least 10 hours per week) to teaching, research and evaluation of the performance, progress, and competence of the trainees. The unit concerned should have a minimum of twenty beds and should take both acute as well as chronic patients. Experience shall be provided in KMU based teaching hospitals as well as other Hospitals or centers with academic and clinical activities in the field of oncology.

In addition to their full time clinical training, huge emphasis shall be laid on professionalism and ethics as well as good clinical practice. The trainee shall be judged on his personal conduct and development, morals and ethics during his training and if not up to the mark, either training shall be terminated or the award of degree can be refused. Trainee shall be on full time training and shall be expected to perform all the on call duties allocated to him/her. The trainee shall maintain a record of training in the form of a log book. The supervisor shall check this record regularly for evidence of training and to confirm the progress made by the trainee and also countersign it. Being a full time course, trainees shall not be allowed private practice. Engagement in any type of private business activities or practice shall be grounds for termination of training.

2. General regulations (Eligibility):

1. Candidates must be medical graduates with MBBS or equivalent basic medical qualification recognized and registered by PMDC
2. In case of candidates with foreign degree, he/she must be registered with PMDC and with the medical registration authority of the country from where MBBS (or equivalent degree) was awarded
3. Candidate must have completed six months house job in medicine or allied and six months house job in surgery or allied
4. Enrollment for the two year course shall be open every year.
5. Prior experience in any field of oncology in an oncology department shall be preferable. Candidates shall be expected to have at least one year post house job experience in general medicine however those with at least one year post house job experience in clinical hematology, general surgery or gynecology and

obstetrics may also be considered. Certificate of experience must be produced from Head of the concerned department

6. Certificate of good standing from Head of the Department last attended
7. Names of at least two referees to be provided with references / testimonials if any.
8. Registration and deposit of the required fee (as determined by PGMI or KMU) is must before course can be started

3. Training Programme:

Eighteen months out of two years of training shall be for their sub-specialty training in Medical Oncology (including malignant hematology) while six months will be for full time training in general medicine. Training modules for the specialty are discussed in detail below. Break up of the course shall be as follows:

- Medical Oncology and hematology	14 months
- General medicine	06 months
- Radiation therapy	06 weeks
- Pathology including hematology	06 weeks
- One optional rotation in relevant field	04 weeks

4. CURRICULUM

(A) BASIC SCIENCES:

Trainees shall be imparted knowledge about the following aspects of basic sciences pertaining to medical oncology:

(a) Molecular biology of cancer and other basics of oncology including oncologic pharmacology and radio-diagnostics.

(b) Principles of diagnostic skills, staging, response criteria, treatment outcomes etc.

(B) GENERAL MEDICINE:

A trainee should be well versed with proper history taking and clinical examination methods. Should be able to diagnose and treat common medical conditions (both acute and chronic) at the end of his six months compulsory full time rotation in medical ward.

(C) CLINICAL ONCOLOGY:

(a) Principles of multidisciplinary cancer therapy and its indications:

They shall be trained in the basic aspects of cancer therapeutic agents (pharmacology) as well as principles of cancer chemotherapy including targeted therapies (its indications and contraindications) and its related effects. They should be well accustomed to various types of cancer therapies including:

- Principles of surgical oncology
- Principles of radiation oncology
- Principles of oncologic pharmacotherapy
- Principles of targeted and biologic therapy

(b) Management of site-specific cancers:

In addition to general medical knowledge, trainees should have thorough knowledge of the etiology and risk factors, epidemiology, genetic basis, screening, sign symptoms, interpreting diagnostic data (both laboratory based and radiology based), staging, clinical examination skills, current literature as well as state of the art treatment plans for the following cancers:

(1) Breast cancer

(2) Endocrine cancers

(3) Primary malignant tumors of the lung and pleura:

- Small-cell lung cancer
- Non-small-cell lung cancer
- Pulmonary carcinoid
- Mesothelioma
- Thymoma

(4) Cancers of the Genito-urinary tract:

- Cancer of the kidney
- Cancer of the urinary bladder
- Prostate cancer
- Cancer of the testes
- Cancer of the penis

(5) Gynecologic malignancies:

- Cancer of the uterine cervix
- Carcinoma and sarcoma of the endometrium (uterus)
- Carcinoma of the ovary
- Germ cell tumors of the ovary

(6) Sarcomas:

- Bone sarcomas (adult and pediatric)
- Soft tissue sarcoma (adult and pediatric)
- Gastrointestinal stromal tumors

(7) Skin cancers:

- Melanoma
- Basal cell and squamous cell cancers

(8) Central nervous system malignancies:

- Gliomas
- Medulloblastomas
- Metastasis to CNS and neoplastic meningitis

(9) Head and neck cancers:

- Cancers of the oral cavity
- Nasopharyngeal cancers
- Thyroid cancer
- Parathyroid cancer
- Salivary gland tumors

(10) Gastrointestinal cancers:

- Esophageal cancer
- Gastric cancer
- Neuro-endocrine tumors, adrenal tumors and tumors of the small bowel
- Colo-rectal cancer
- Anal cancer
- Hepatic cancers
- Cancers of the biliary tract
- Pancreatic cancer

(11) Hematologic malignancies:

- Leukemias (acute and chronic leukemias)

Lymphomas (Hodgkin's disease, Non-Hodgkin's lymphoma, cutaneous T-cell lymphoma)
Plasma cell dyscrasias and myelodysplastic syndromes

(12) AIDS related malignancies

(13) Carcinoma of unknown primary site

(c) Medical emergencies, supportive care, palliative treatment and end of life issues:

Trainees should be fully conversant with anticipating, diagnosing and promptly treating medical emergencies in oncology and common conditions associated with cancer or its treatment. They should be able to diagnose and promptly treat anxiety and depression. They should be able to handle end of life issues and end of life/terminal care

(d) Trainees shall also be imparted training in the following disciplines:

(a) Communication skills, Medical Ethics, Psycho-oncology and Rehabilitation:

(b) Practical Procedures in Oncology:

Trainees should be able to perform the following practical procedures at the end of the course: Preparation and administration of chemotherapeutic drugs, Bone marrow aspiration and trephine biopsy, lumbar puncture, triple intra-thecal therapy, pleural fluid drainage and ascites tapping.

5. EXAMINATION:

a. Conduct of examination:

1. English shall be the medium of instruction and examination.
2. Examination shall be held by Khyber Medical University, Peshawar after completion of two years training.
3. Examination shall be held only once a year, 80% attendance is a must.
4. Examination shall be conducted in one part with written examination as well as clinical assessment and viva
5. Head of Department of Medical Oncology, Postgraduate Medical Institute, (Khyber Medical University), Hayatabad Medical Complex, Peshawar shall be the convener of the examination.
6. There shall be two sets of examiners; two internal examiners from KMU (or its affiliated institutions) (including Head of Oncology Dept) and two external examiners selected by Controller of examinations, KMU, in consultation with Head of Oncology Dept, PGMI.
7. Questions for papers and MCQs shall be shared equally (50%) by Internal and External examiners.
8. Board of Examiners shall arrange the result of written, clinical/practical and oral examinations in consolidated form and send it with in ten days after completion of examination to the Controller of Examination KMU for formal declaration.
9. The candidates shall be eligible for four consecutive examinations after completion of the course. All trainees shall be judged on their morals and ethics

during their training and if found not up to the mark, either their training shall be terminated or the award of diploma can be refused by PGMI/KMU.

10. Upon successful completion of examination the candidate shall be awarded the Diploma in Medical Oncology (DMO) by Khyber Medical University, Peshawar.

11. Trainees shall be trained and assessed in the following fields:

- General medical knowledge and skills
- Basic molecular oncology and epidemiology/ disease prevention
- Clinical skills including case based studies with discussion and problem solving
- Practical procedures
- Patient investigations and staging
- Patient management
- Communication skills
- Data and information handling skills
- Research project assignment.

b. Examination syllabus:

PAPER A:

Part I: Written paper and MCQs in general medicine (30 marks)

Part II: Written paper and MCQs in genetics, cellular and molecular biology related to oncology, epidemiology, statistics, etiology, screening (70 marks)

TOTAL MARKS FOR PAPER A: 100 marks

PAPER B:

Part I: Oncological pharmacology and therapeutics (30 marks)

Part II: Written and MCQs in medical oncology (disease specific paper) and malignant hematology (70 marks)

TOTAL MARKS FOR PAPER B: 100 marks

Time allowed for written papers is three hours

VIVA VOCE:

A Oral examination/viva 100

B Short cases (two) 50

C Long case (one) 50

TOTAL FOR VIVA: 200 marks

TOTAL MARKS IN THE EXAMINATION: 400 marks

Viva shall include full discussion on any aspect of medical oncology and malignant hematology as well as x-rays, scans, laboratory reports etc.

Minimum passing marks in each module (written and oral) shall be 50% with 55% aggregate marks.

6. ADMISSION FEE AND EXAMINATION FEE:

Admission fee shall be charged to the trainee as determined by PGMI/KMU

A fee of Rs. 2000/- (or whatever amount stipulated by PGMI/KMU from time to time) shall be charged as examination fee.

7. RECOMMENDED BOOKS:

- Textbook of Medical Oncology by Cavalli, Hansen, Kaye (Taylor and Francis Publishers)
- Cancer and its management Robert Souhami and Jeffrey Tobias (Blackwell Publishing)
- Cancer Management: A multidisciplinary approach by Richard Pazdur, Lawrence Coia, William J Hoskins, Lawrence D Wagman) (The Oncology Group, CMP Medica Publishers)
- Clinical Hematology by Ludlam (ELBS Publishing)

8. RECOMMENDED JOURNALS:

- Journal of Clinical Oncology
- Annals of Oncology
- Cancer
- Blood
- The Oncologist
- New England Journal of Medicine

REFERENCES:

Hansen HH, Bajorin DF, Muss HB, Purkalne G, Schrijvers D, Stahel R. ESMO/ASCO Task Force on Global Core Curriculum in Medical Oncology. Recommendations for a global core curriculum in Medical Oncology. J Clin Oncol 2004; 22 (22): 4616-4625.

Higher Medical Training. Curriculum for Medical Oncology: Joint Committee on higher medical training (JCHMT), London (January 2003) www.jchmt.org.uk