

**THE TAMILNADU Dr.M.G.R. MEDICAL UNIVERSITY,
No.69, Anna Salai, Guindy, Chennai – 600 032.**

**D.M/ M.Ch
SUPER SPECIALTY DEGREE COURSE**



SYLLABUS AND CURRICULUM

2017-2018

DM - MEDICAL ONCOLOGY

THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY, CHENNAI
Syllabus – D.M - MEDICAL ONCOLOGY

I. AIMS AND OBJECTIVES:

It is a 3-year course that imparts intense training to DM candidates into the field of medical oncology and related subjects with adequate exposure to clinical and laboratory based activities.

II. THEORY SYLLABUS :

1) Basic Scientific Principles:-

As foundations for treating malignant disease, the trainee should understand the biology of cancer, principles of therapy and proper conduct and interpretation of clinical research.

Trainees should know the biology of normal cells and the basic processes of carcinogenesis. They should have an understanding the gene structure, organization, expression and regulation. A fundamental understanding of the cell cycle, its control by oncogenes and its interaction with chemotherapy is important. They should understand tumour cell kinetics, proliferation and programme cell death and the balance between cell death and cell proliferation.

1. Essentials of Molecular Biology – Basic Principles. Genomics and Cancer, signal transduction, Immunology, Cytogenetics, Cell Cycle, Apoptosis, inversion and metastases, angiogenesis and Carcinogenesis, - Genetics, Viral Physics and Chemical.

2. Epidemiology – Epidemiologic methods, Descriptive and Analytical epidemiology.

3. Principles of cancer management: Surgical Oncology, Medical Oncology, Radiation Oncology and Biologic therapy.

4. Cancer Chemotherapy.

5. Pharmacology of Cancer: Biotherapeutics – interferon's interleukins, hormonal therapy, differentiating agents, monoclonal antibodies, antiangiogenic factors.

6. Clinical Trials.

7. Cancer Prevention – tobacco related cancers, diet chemoprevention.

8. Cancer Screening.

9. Cancer Diagnosis – Molecular pathology and Cytology, Imaging, Endoscopy, Laparoscopy.

10. Specialized techniques – minimal access surgery. Vascular access, isolated perfusion, intensity modulated radiation therapy.

11. Systemic Oncology:

- i) Head and Neck Cancer.
- ii) Lung Cancer.
- iii) Mediastinal neoplasms.
- iv) Gastrointestinal tract cancer.
- v) Cancers of the Genitourinary system.
- vi) Gynaecologic cancer.
- vii) Breast cancer.
- viii) Endocrine Malignancies.
- ix) Musculoskeletal tumours.
- x) Mesothelioma.
- xi) Cancer of the Skin.
- xii) Malignant Melanoma.
- xiii) Central nervous system – malignancies.
- xiv) Paediatric malignancies.
- xv) Lymphomas and leukemia.

12. Paraneoplastic syndromes

13. Cancer of the unknown primary site.

14. Peritoneal carcinomatosis.

15. Cancer in immunosuppressed host.

16. Oncologic emergencies – SVC syndrome, spinal cord compression, metabolic emergencies, urologic emergencies.

17. Treatment of metastatic cancer – brain, lung, bone, liver, malignant effusions and ascitis.

18. Haemopoietic therapy- transfusion, growth factors, autologous and allogeneic stem cell transplantation.

19. Infection in the cancer patient.

20. Supportive care and quality of life- pain management, nutritional support, sexual problems, genetic counseling, psychological issues, community resources, care of the terminally ill patient.

21. Adverse effects of treatment- Nausea and vomiting. Oral complications, pulmonary toxicity, cardiac toxicity, hair loss, genital dysfunction, second cancers, miscellaneous toxicity.

22. Rehabilitation of the cancer patient.

23. Oncology nursing including venous access.

24. Ethical issues in oncology.

25. Information systems in Oncology.

26. Alternative methods of cancer treatment.

27. Newer approaches in cancer treatment- Gene therapy, molecular therapy, cancer vaccines, image guided surgery, heavy particles in radiation therapy.

28. Reconstructive surgery.

Bioethics

1. Respect human life and the dignity of every individual.
2. Refrain from supporting or committing crimes against humanity and condemn all such acts.
3. Treat the sick and injured with competence and compassion and without prejudice and apply the knowledge and skills when needed.
4. Protect the privacy and confidentiality of those for whom we care and breach that confidence only when keeping it would seriously threaten their health and

- safety or that of others.
5. Work freely with colleagues to discover, develop, and promote advances in medicine and public health that ameliorate suffering and contribute to human well being.
 6. Educate the public about present and future threats to the health of humanity.
 7. Advocate for social, economic, educational and political changes that ameliorate suffering and contribute to human well being.
 8. Teach and mentor those who follow us, for they are the future of our caring profession.

III. CLINICAL TRAINING:

1. WARD POSTING (IN PATIENT CARE)

Total period – **14 months**

The candidate is posted to work in male ward, female ward and special wards each 3 months in turn. He or she is required to workup patients admitted on those beds and to discuss it with the concerned consultants regarding treatment plan and to present it on the grand rounds and to assume complete responsibility of the patients during their hospital stay. He should work in harmony with the ward nurses. Candidate should learn about administration of chemotherapy and supervision of side effects. Third year post graduates will work in the ward for 2 months in turns (male and female wards) along with 1st year post graduates.

The candidate is posted to Gynaec and Pediatric oncology at Institute of Obstetric and Gynaecology for 3 months to get trained in treatment of Gynaec and pediatric malignancies. (1st year post graduates)

2. OUT PATIENT DEPARTMENT (OPD) POSTING:

Duration is **15 months**.

The candidate should attend to the patient in OPD and plans either admission for chemotherapy/evaluation. They are expected to see new as well as follow-up patients so as to plan out the management and assess the therapeutic responses of a particular patient. The candidates posted to these clinics work under the supervision of consultants.

Also to refer the patient as per the need to other specialty clinics. He also interacts with other specialty departments like gastrointestinal, urology, pain clinic, orthopedics, pediatric surgery, Surgical oncology, Radiation oncology, gynecology oncology, pulmonary medicine. Each candidate is posted for 3 months in turns to administer and monitor day care chemotherapy at OPD.

3. EXTERNAL POSTING :

Duration is **2 months**.

- Molecular oncology and lab training at reputed Institutions for 1 month. (3rd year post graduates)
- The candidate are expected to learn about various laboratory procedures like cytogenetics, flow cytometry , FISH technique and molecular oncology lab procedures.
- Training and observation in a Haematology unit at reputed Institutions for 1 month.(2nd year post graduates). Candidates get to trained in autologous and allogenic Bone marrow transplant and BMT related issues.

4. PERIPHERAL POSTING :

It will be for **2 months** as follows: (3rd year post graduates)

- ◆ Surgical oncology (2 weeks)
- ◆ Radiation oncology (2 weeks)
- ◆ Pathology(2 weeks)
- ◆ Radiodiagnosis (2 weeks)

During II year, students are encouraged to undergo special postings for learning new advanced techniques / Procedure / Skills in institutions of higher repute where the requisite facilities are available without affecting the duties of the parent department.

IV. SKILL TRAINING:

Candidates posted in wards are expected to do minor procedure and learn skills about

- Bone marrow aspiration & Biopsy

- Liver biopsy
- Core needle biopsy
- Lumbar puncture
- Intrathecal chemotherapy
- Aspiration of pleural , ascitic, and pericardial effusions
- Introducing percutaneous subclavian, internal jugular, and Brachial femoral vein catheters

V.TEACHING METHODOLOGY:

Integrated teaching program to expose the candidate to various fields of oncology are provided by regular clinico-pathologic conferences, seminars, case discussion sessions, and radiology conferences. Following academic activities are planned throughout the year. The candidate will be encouraged to actively participate in these meetings, carefully listen to the topics, ask questions, critically analyze and give his/her comments and suggestions.

PROGRAMME

- **OP case discussion by the Professors and Assistant Professors.**
- **Difficult case discussion and basic science topic presentation by the candidate.**
- **Case Presentation & Discussion by Professor and Assistant Professors.**
- **Tumor board Discussion.**
- **Journal club/Haematology and Pathology slides discussion.**
- **Weekly evaluation with theory tests**
- **Grand Rounds**
- **Symposium – twice a month.**
- **Dept CME(Once in two month) on single subject**
- **CME with other departments(Once a month) like Medical Gastroenterology, Surgical Gastroenterology, Surgical oncology, Radiation oncology etc.**
- **CPC (Clinico-Pathological-Conference)**
(Once a month)

VI. RESEARCH WORK:

The candidate is introduced to the field of research in medical oncology; both at clinical and laboratory level.

The candidate will be trained in the ability to

- Frame a research question.
- Plan a study to answer the question.
- Collect the relevant information and
- Evaluate appropriately the collected data to draw a conclusion.

The candidate should become conversant with the reporting of these results as a research paper, in journals and as a presentation in conferences.

The activities would consist of:

Planning and organizing relevant studies to be submitted as a Research paper at the end of the course.

Students should compulsorily attend the Research Methodology workshop conducted by the University within first six months of D.M Course.

VII. LOG BOOK:

The Postgraduate student of a Postgraduate Degree Course in Super specialties shall maintain Log Book of the work carried out by them and the training programme undergone during the period of training including details of surgical operations assisted or done independently by.

The Log Book shall be checked and assessed by the faculty members imparting the training.

Periodical evaluation of Log Book to be done by the Head of the Department as per 52nd SAB.

The Evaluation of the candidates in both theory and practical aspects will help the candidate in the improvement of his/her knowledge skills & attitude.

VIII. COMPETENCY ASSESSMENT:

Overall:

1. Communication / Commitment / Contribution /

Compassion towards patients and Innovation

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10 Marks

2. Implementation of Newly learnt techniques - 10 Marks

3. Documentation of case sheets / discharge

Summary / Review - 10 Marks

4. Number of cases presented in Clinical Meetings/

Journal Clubs / Seminars / Papers presented in

Conference. - 10 Marks

5. No. Of Medals/ Certificates won in the conference

/ Quiz competitions and other academic meetings

with details. - 10 Marks

Total 50 Marks

Assessment	I	- February	-	First Year
	II	- August	-	First Year
	III	- February	-	Second Year
	IV	- August	-	Second Year
	V	- February	-	Third Year
	VI	- May	-	Third Year

VIVA INCLUDING COMPETENCY ASSESSMENT – 100 Marks (50+50)

IX. THEORY EXAMINATION:

Paper I - Basic sciences(Radiation Physics Tumour Biology, Biochemistry, Biometry Immunology & Pharmacology)

Paper II - General oncology including Tumor pathology, Radiology & Nuclear Medicine

PaperIII- Medical Oncology including Therapy, Epidemiology and Rehabilitation.

Paper IV - Recent advances in Medical Oncology

1. Essay questions (2)	-	2 X 15 = 30 Marks
2. Short Notes (10)	-	10 X 7 = 70 Marks
Total		----- 100 Marks -----

X. PRACTICAL SCHEME:

Particulars	Time for candidate to examine the cases	Time for examiners to question the candidates	Maximum Marks
Long Case	1 Case x 60 Minutes	60 Minutes	100
Short Case	2 Cases x 15 Minutes	30 Minutes	100
Ward Rounds	3 Patients x 10 Minutes	30 Minutes	100
OSCE	5 Stations x 3 Minutes	15 Minutes	50
Viva Voce		15 Minutes	100
Log Book			50
Total			500

As per Medical Council of India Post Graduate Medical Education Regulations 2000 (amended upto 10th August 2016) clause **13.9 A Postgraduate student of a Postgraduate degree Course in broad specialties/ Super Specialties would be required to present one poster presentation to read one paper at a National/State conference and to present one Research paper which should be published/accepted for publication/sent for publication during the period of his Postgraduate studies so as to make him eligible to appear at the Postgraduate Degree**

Examination.

Apart from Poster/Oral paper presentation in National/State conferences, the Research paper published by the candidate in the University Journal of Medical Sciences will be considered as equivalent to the Research Paper as mentioned in 13.9. clause. Case Reports can also be published in University Journal of Medical Sciences but case reports will not be considered as Research Paper.

The candidate can also present Research Paper as per Clause 13.9 of Post Graduate Education Regulation 2000, and if the article sent for publication by the candidate as primary author or corresponding author which has not yet been published/accepted for publication, the candidate should submit a letter from the HOD, stating that the article sent for publication is of publishable merit and the proof of the Research Article submitted to the Journal for publication should be sent to the university forwarded through the HOD [as per 53rd SAB]

The candidate can submit articles for the University journal anytime from the time of registration in the University till 6 months prior to theory examination.

XI. OSCE: (5 Stations)

1. Clinical Scenario - 4 stations
2. Peripheral blood smear/bone marrow aspiration smear reports
- 3.HPE/IMMUNOPHENOTYPING Report analysis
- 4.Instruments
- 5.Image reporting(radiology)

XII. REFERENCE BOOKS:

- 1 Caner Principles and Practice of Oncology Vincent T. Devita
- 2 Principles and Practice of Pediatric Oncology Philip A. Pizzo
- 3 Decision Making in Oncology Bengamin Djubegovic
- 4 Current Medical Diagnosis and Treatment Lange Medical Book

- International edition
- 5 The Basic Science of Oncology IanF. Tannock
- 6 Cancer Treatment Charles M Haskel
- 7 Cancer Chemotherapy Chabner
- 8 Principles of Internal Medicine Harrison
- 9 Text Book fo Pediatrics Nelson
- 10 Text Book of Oncology Abeloff and Armitage
- 11 Principles and practice of Gynecologic oncology by Barakat.
- 12 Principles of Radiation Oncology by Bradi and Perez.

****Note:** The editions are as applicable and the latest editions shall be the part of the syllabi.

XIII. JOURNALS :

- 1 Cancer Treatment Review
 - 2 Journals of Pediatric Hematology/Oncology
 - 3 Current Opinion in Oncology
 - 4 The Indian Journal of Cancer
 - 5 The Seminars in Oncology
 - 6 Haematology/Oncology Clinics of North America
 - 7 Medical and Pediatric Clinic of North America
 - 8 Cancer
 - 9 Current Problems in cancer
 - 10 Journal of Clinical Oncology
 - 11 Lancet
 - 12 NEJM (New England Journal of Medicine)
 - 13 Blood
 - 14 British Journal of Hematology
 - 15 Bone Marrow Transplantation
 - 16 Seminars in Hematology
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