



MAHATMA GANDHI UNIVERSITY
of
MEDICAL SCIENCES & TECHNOLOGY
JAIPUR

Super Specialty Courses

SYLLABUS **DM – MEDICAL ONCOLOGY**

Notice

1. Amendment made by the Medical Council of India in Rules/Regulations of Post Graduate Medical Courses shall automatically apply to the Rules/Regulations of the Mahatma Gandhi University of Medical Sciences & Technology (MGUMST), Jaipur.
2. The University reserves the right to make changes in the syllabus/books/guidelines, fees-structure or any other information at any time without prior notice. The decision of the University shall be binding on all.
3. The Jurisdiction of all court cases shall be Jaipur Bench of Hon'ble Rajasthan High Court only.

Contents

1. NAME OF THE COURSE:	4
2. DURATION OF THE COURSE:	4
3. ELIGIBILITY:.....	4
4. MODE OF SELECTION:	4
5. SCHEME OF EXAMINATION:	7
6. GOALS AND OBJECTIVES OF THE PROGRAM	10
7. SYLLABUS CONTENT:	11
8. TEACHING AND TRAINING ACTIVITIES.....	12
i) ACADEMIC SCHEDULE:	12
ii) CLINICAL POSTINGS:	13
9. THESIS PROTOCOL AND THESIS:	15
10. LOG BOOK AND LEAVE RULES:.....	18
11. RECOMMENDED BOOKS AND JOURNALS:.....	20
i) RECOMMENDED BOOKS:	20
ii) RECOMMENDED JOURNALS:.....	20
12.FORMATIVE ASSESSMENT:.....	21

Syllabus of DM / M.Ch. Courses
DM – MEDICAL ONCOLOGY (.....)

SELECTION OF CANDIDATES:

There shall be a uniform entrance examination to all medical educational institutions at the Postgraduate level namely ‘National Eligibility-cum-Entrance Test’ for admission to postgraduate courses in each academic year and shall be conducted under the overall supervision of the Ministry of Health & Family Welfare, Government of India.

In order to be eligible for admission to Postgraduate Course for an academic year, it shall be necessary for a candidate to obtain minimum of marks at 50th percentile in the ‘National Eligibility-Cum-Entrance Test for Postgraduate courses’ held for the said academic year. However, in respect of candidates belonging to Scheduled Castes, Scheduled Tribes, and Other Backward Classes, the minimum marks shall be at 40th percentile. In respect of candidates with benchmark disabilities specified under the Rights of Persons with Disabilities Act, 2016, the minimum marks shall be at 45th percentile for General Category and 40th percentile for SC/ST/OBC.

The percentile shall be determined on the basis of highest marks secured in the All India Common merit list in National Eligibility-cum-Entrance Test for Postgraduate courses.

Provided when sufficient number of candidates in the respective categories fail to secure minimum marks as prescribed in National Eligibility-cum-Entrance Test held for any academic year for admission to Postgraduate Courses, the Central Government in consultation with Medical council of India may at its discretion lower the minimum marks required for admission to Post Graduate Course for candidates belonging to respective categories and marks so lowered by the Central Government shall be applicable for the academic year only.

The reservation of seats in Medical Colleges/institutions for respective categories shall be as per applicable laws prevailing in States/Union Territories. An all India merit list as well as State-wise merit list of the eligible candidates shall be prepared on the basis of the marks obtained in National Eligibility-cum-Entrance Test and candidates shall be admitted to Postgraduate Courses from the said merit lists only.

There shall be no admission of students in respect of any academic session beyond 31st August under any circumstances. The Universities shall not register any student admitted beyond the said date.

ELIGIBILITY:

Educational qualification: Any medical graduate with MD/MCI in General Medicine/Paediatrics or Radiotherapy qualification, who has qualified the Entrance Examination conducted by NMC and fulfill the eligibility criteria for admission to DM Medical Oncology in India is eligible to participate in the examination and Counseling for allocation of DM Medical Oncology seats purely on merit cum choice basis.

Common Counseling:

There shall be a common counseling for admission to all Postgraduate Super specialty Courses (DM/ M.Ch.) in all Medical Educational Institutions on the basis of merit list of the National Eligibility-cum-Entrance Test.

Period of Training:

The period of training for obtaining DM/M.Ch Degrees shall be three completed years including the examination period.

Migration:

Under no circumstance, Migration/transfer of student undergoing any Super Specialty course shall be permitted by any University/ Authority.

Staff - Faculty:

Only those teachers who possess 6 years teaching experience out of which at least 2 years teaching experience as Assistant Professor gained after obtaining the higher specialty degree shall be recognized post graduate teacher.

No teacher shall be considered as a postgraduate teacher in any other institution during the period till the postgraduate course at the institute which has been granted permission considering him as a postgraduate teacher is recognized u/s 11(2) of the Indian Medical Council Act, 1956.

Minimum staff required (Super-speciality):

- 1- Professor
- 1- Associate Professor
- 1- Assistant Professor
- 1- Senior Resident
- 2- Junior Resident

Training Programme:

All the candidates joining the Post Graduate training programme shall work as 'Full Time Residents' during the period of training and shall attend not less than 80% (Eighty percent) of the imparted training during each academic year (Academic Term of 6 months) including assignments, assessed full time responsibilities and participation in all facets of the educational process.

No candidate shall be permitted to run a clinic/work in clinic/laboratory/nursing home while studying postgraduate super specialty course. No candidate shall join any other course or appear for any other examination conducted by this university or any other university in India or abroad during the period of registration.

Every institution undertaking Post Graduate training programme shall set up an Academic cell or a curriculum committee, under the chairmanship of a senior faculty member, which shall work out the details of the training programme in each speciality in consultation with other department faculty staff and also coordinate and monitor the implementation of these training Programmes.

The training programmes shall be updated as and when required. The structured training programme shall be written up and strictly followed, to enable the examiners to determine the training undergone by the candidates and the Medical Council of India inspectors to assess the same at the time of inspection.

Post Graduate students shall maintain a record (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 M.Ch. candidates.

The Record (Log) Books shall be checked and assessed periodically by the faculty members imparting the training.

During the training for award of Degree / Superspecialty in clinical disciplines, there shall be proper training in Basic medical sciences related to the disciplines concerned; so also in the applied aspects of the subject; and allied subjects related to the disciplines concerned. In the Post Graduate training programmes including both Clinical and Basic medical sciences, emphasis has to be laid on Preventive and Social aspects. Emergency care, facilities for Autopsies, Biopsies, Cytopsies, Endoscopy and Imaging etc. shall also be made available for training purposes.

The Post Graduate students shall be required to participate in the teaching and training programme of undergraduate students and interns.

Training in Medical Audit, Management, Health Economics, Health Information System, basics of statistics, exposure to human behaviour studies, knowledge of pharmaco – economics and introduction to nonlinear mathematics shall be imparted to the Post Graduate students.

The teaching and training of the students shall include graded responsibility in the management and treatment of patients entrusted to their care; participation in Seminars, Journal Clubs, Group Discussions, Clinical Meetings, Grand Rounds, and Clinico-Pathological Conferences; practical training in Diagnosis and Medical and Surgical treatment; training in the Basic Medical Sciences, as well as in allied clinical specialities.

The training programme shall be on the same pattern as for M.D. / M.S. in clinical disciplines; with practical training including advanced Diagnostic, Therapeutic and Laboratory techniques, relevant to the subject of specialization. Postgraduate Superspecialty Residents in Surgical Specialties shall participate in Surgical operations as well.

A postgraduate student of a postgraduate degree course in super specialities 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.

ENROLMENT AND REGISTRATION:

Every candidate who is admitted to DM/MCh. course in Mahatma Gandhi Medical College & Hospital shall be required to get himself/herself enrolled and registered with the Mahatma Gandhi University of Medical Sciences & Technology (MGUMST) after paying the prescribed eligibility and enrolment fees.

The candidate shall have to submit an application to the MGUMST through Principal of College for the enrolment/eligibility along with the following original documents and the prescribed fees within two months of his/her admission or up to November 30 of the year of admission whichever is later without late fees. Then after, students will have to pay applicable late fees as per prevailing University Rules.

- (a) MD/MS pass Marks sheet/Degree certificate issued by the University.
- (b) Migration certificate issued by the concerned University (in case the University is other than the MGUMST).
- (c) Date of Birth Certificate
- (d) Certificate regarding registration with Rajasthan Medical Council / Medical Council of India / Other State Medical Council.

No candidate shall be allowed to appear in University examination without his/her enrolment with the University

SCHEME OF EXAMINATIONS:

The examination shall be held at the end of three academic years (six academic terms). The academic term shall mean six months training period. The examination shall consist of: Theory and Clinical/Practical and Oral.

The examinations shall be organised on the basis of 'Marking system' to evaluate and to certify candidate's level of knowledge, skill and competence.

For passing DM/M.Ch. examination as a whole, a candidate shall secure not less than 50% marks in each head of passing which shall include (1) Theory (2) Clinical / Practical and Oral examination.

(1) Theory:

There shall be four theory papers of 3 hours duration and 100 marks each. The theory examination shall be held in advance before the Clinical and Practical examination, so that the answer books can be assessed and evaluated before the commencement of the clinical/Practical and Oral examination.

Paper I and II will be set by one external examiner from outside of the state and paper III and IV by another external examiner from outside of the state. The external examiner, who is paper setter for paper I & II shall evaluate the answer books of paper II. The external examiner, who is paper setter for paper III & IV shall evaluate the answer books of paper III. The answer books of paper I & IV shall be evaluated by internal examiners. The answer books of paper IV shall be evaluated by the Head of the Department and the answer books of paper I shall be evaluated by the second Internal Examiner.

Candidates will be required to attempt all the questions in every question paper. In Paper I, Paper II and Paper III there will be 10 questions. Each question shall carry 10 marks. In Paper IV there will be 5 questions of 20 marks each.

Obtaining a minimum of 40% marks in each theory paper and not less than 50% cumulatively in all the four papers shall be compulsory to pass the examination.

The paper wise distribution of the Theory Examination shall be as follows:

Paper I: Basic Sciences, Includes Cancer Biology, Tumor Immunology, Cancer Etiology, Pharmacology, Radiation Biology, Tumour Pathology.

Basic sciences in Oncology: Molecular basis of cancer, Radiation physics and radiobiology, Tumor Biology, Biochemistry, Biometry, Immunology and Pharmacology of anti-cancer agents.

Paper II: Principles of Medical Oncology, Management of Solid tumors

General Oncology, Tumor Pathology, Staging, Diagnosis, Imaging in cancer, Nuclear

Medicine, Molecular diagnostic tests in cancer, Radioisotopes in diagnosis and therapy, Principles of Surgical Oncology.

Paper III: Haemato-Oncology

Medical Oncology including Chemotherapy of adult solid tumours and hematological malignancies, paediatric oncology (Solid Tumours and Hematological Malignancies)

Paper IV: Cancer Epidemiology, Cancer Prevention, Psycho-oncology, Palliative care, Rehabilitation, Societal Oncology.

Epidemiology, Rehabilitation, End of Life and Terminal care, Palliative care and Hospice Care, Research methodology Clinical trials and the ethics of cancer research, Cancer Prevention.

(2) Clinical / Practical and Oral:

Clinical/Practical examination shall be conducted to test / aimed at assessing the knowledge and competence of the candidate for undertaking independent work as a specialist / teacher. Practical examination shall consist of carrying out special investigative techniques for Diagnosis and Therapy. M.Ch candidates shall also be examined in surgical procedures. Oral examination may be comprehensive enough to test the candidate's overall knowledge and competence about the subject, investigative procedures, therapeutic technique and other aspects of the specialty, which shall form a part of the examination.

Obtaining of 50% marks in Clinical / Practical and Oral examination shall be mandatory for passing the Clinical / Practical and Oral examination-

Maximum Marks: 400.

One Long case	1 x 100 =	100 Marks
Two Short cases	2 x 50 =	100 Marks
Spotters		50 Marks
Viva		100 Marks
Log Book		25 Marks
Thesis		25 Marks
	TOTAL :	400 Marks

Result:

For passing DM/M.Ch. Examination, a candidate will be required to obtain at least 40% marks in each theory paper, 50% marks in the aggregate of all the four theory papers and 50% marks in the aggregate of Clinical / Practical and Oral examination separately. A candidate failing in any theory paper or in the aggregate of all four theory papers or Clinical / Practical and Oral examination shall have to repeat the whole DM/M.Ch. examination.

Grace Marks:

No grace marks will be provided in DM/M.Ch. examinations.

Revaluation / Scrutiny:

No Revaluation shall be permitted in the DM/M.Ch. examinations. However, the student can apply for scrutiny of the answer books as per University Rules

Examiners:

As per the Amendment Notification of the MCI dated June 5, 2017, no person shall be appointed as an internal examiner in any subject unless he/she has three years experience as recognized PG teacher in the concerned subject. For external examiners, he/she should have minimum six years of experience as recognized PG teacher in the concerned subject.

For all Post Graduate Super specialties examinations, the minimum number of Examiners shall be four, out of which at least two (50%) shall be External Examiners, who shall be invited from other recognised universities from outside the State.

Number of Candidates:

The maximum number of candidates to be examined in Clinical / Practical and Oral on any day shall not exceed three for D.M./M.Ch. Examinations.

Number of Examinations:

The university shall conduct not more than two examinations in a year, for any subject, with an interval of not less than 4 and not more than 6 months between the two examinations.

D.M. – MEDICAL ONCOLOGY (2020-2021)

Duration : 3 Years

Admission Eligibility : MD/DNB from MCI approved institution in General Medicine/Pediatrics or MD in Radiotherapy from MCI approved institution.

AIMS AND OBJECTIVES OF THE PROGRAM

To ensure adequate supply of medical oncology experts who assume leadership role in their fields. To produce a medical oncologist who:

- I. **Provide specialized training in medical Oncology, including Hospital based oncology practice, Community Oncology development and Community Intervention Strategies.**
- II. **Instill the concept of wholesome management of a cancer patient.** Instill team spirit by involving the radiation oncologist, surgical oncologist, Nuclear medicine & allied imaging departments, palliative care specialists & pathologists as team players for patient care.
- III. **Management and Treatment of Individual Cancers and their associate complications** - The management of malignant diseases requires the expertise of many different medical subspecialties and the majority of patients with malignant diseases are best managed in a multidisciplinary approach with integration of the various sub-specialties because of increasing complexity of modern treatment.
- IV. **Psychosocial Aspects of Cancer** – The candidate should become skillful in handling cultural issues, spiritual conflicts, adaptive behavior, coping mechanisms, communication.
- V. **Patient Education** – The candidate should learn to consciously involve in educating the patients in matters of genetic counseling (screening and assessment of risk), health maintenance (Diet, smoking, alcohol consumption), long term complications, risk of treatment induced cancer, endocrine dysfunctions.
- VI. **Legal, and Economic Issues** – The candidate should be fully proficient in dealing with issues of taking informed consent for research activities, ethical conduct of medical research, legal issues (Life support and its withdrawal), cost efficiency and professional attitude.
- VII. **Skills** – During the training period the candidate should imbibe and develop the skills of anticancer agent administration (Prescribing, administering, Handling and disposal of chemotherapeutic and biologic agents), clinical procedures (Central Venous Access device insertion, bone marrow aspiration, biopsy, lumbar punctures, abdominal and thoracic paracentesis), ommaya reservoir management.
- VIII. **Community responsibilities** – He should be well versed with community aspects of cancer screening including cancer registry and other aspects of preventive oncology. He should become competent to plan and implement community intervention strategies and should be well trained to link up with the existing health care system and be able to address screening, early detection and health awareness issues.
- IX. **Constant Development** – He should be aware of the recent developments in the field of Medical Oncology, chemotherapeutics, preventive oncology, molecular biology. Communication Candidates should be able to communicate to patient and their family. They should be able to break bad news and act adequately in difficult situations. Candidates should learn to communicate and work together with other professional health care takers in a team.

SYLLABUS

6. SYLLABUS CONTENT:

A. Basic Science and General Oncology

1. Etiology and epidemiology
2. General pathology of cancer
3. Genetic in oncology
4. Molecular oncology
5. Cancer therapeutics
6. Cancer prevention and screening.
7. Clinical trials in cancer
8. Imaging Techniques of Cancer Diagnosis & Management
9. Specialized techniques of Cancer Diagnosis and Management
10. Vascular Access and Specialised Technique of drug delivery

B. Clinical Oncology (Medical) & Stem Cell Transplantation

1. Cancer of Head and Neck
2. Cancer of Lung and Mediastinum
3. Cancer of Gastro Intestinal Tract
4. Cancer of Genito Urinary System
5. Cancer of the Breast
6. Cancer of Endocrine System
7. Sarcomas of Soft Tissues & Bone
8. Benign & Malignant Mesotheliomas
9. Cancer of skin
10. Malignant Melanoma
11. Neoplasms of CNS
12. Cancers of childhood
13. Lymphomas
14. Leukemias and other Haematological Malignancies
15. Paraneoplastic Syndromes
16. Cancers of unknown primary site

17. A.I.D.S – related malignancies
18. Oncological Emergencies
19. Treatment of Metastatic Cancers
20. Gynaecological Cancers
21. High Dose Chemotherapy & Transplantation

C. Recent advances, Palliative care, Oncologic emergencies, Supportive Care, community oncology

1. Infections in cancer Patients and neutropenic patients
2. Management of oncologic emergencies
3. Adverse effects of treatment
4. Supportive Care and Quality of Life
5. Rehabilitation of Cancer Patient
6. Newer approaches in cancer treatment
7. Newer drugs in cancer treatment
8. Long term morbidities of cancer survivors
9. Community oncology
10. Socio-economic aspects of oncology

7. Teaching and Training Activities

Academic Schedule

1. Case presentations & discussion- once a week
2. Seminar – Once a week
3. Journal club- Once a week
4. Grand round presentation -once a week
5. Faculty lecture teaching- once a month
6. Clinical Audit-Once a Month
7. A poster and have one oral presentation at least once during their training period in a recognized conference.

The rounds should include bedside sessions, file rounds & documentation of case history and examination, progress notes, round discussions, investigations and management plan interesting and difficult case unit discussions.

Theoretical: The theoretical knowledge would be imparted to the candidates through discussions, journal clubs, symposia and seminars. The candidates are exposed to recent advances through discussions in journal clubs. These are considered necessary in view of an inadequate exposure to the subject in the undergraduate curriculum.

Symposia: Candidates would be required to present a minimum of 20 topics based on the curriculum in a period of three years to the combined class of teachers and candidates. A free discussion would be encouraged in these symposia. The topics of the symposia would be given to the candidates with the dates for presentation.

Clinical: The candidate would be attached to a faculty member to be able to pick up methods of history taking, examination, prescription writing and management in rehabilitation practice.

Bedside: The candidate would work up cases, learn management of cases by discussion with faculty of the department.

Journal Clubs: This would be a weekly academic exercise. A list of suggested Journals is given towards the end of this document. The candidate would summarize and discuss the scientific article critically. A faculty member will suggest the article and moderate the discussion, with participation by other faculty members and candidate doctors. The contributions made by the article in furtherance of the scientific knowledge and limitations, if any, will be highlighted.

Research: The candidate would carry out the research project and write a thesis/ dissertation in accordance with MCI guidelines. He/ she would also be given exposure to partake in the research projects going on in the departments to learn their planning, methodology and execution so as to learn various aspects of research.

I. Clinical posting

A. Inpatient care (IPD) Duration is 12 months. The candidate is allotted certain beds and he is required to work up patients admitted on those beds. He plans out a diagnostic work up and treatment plan, discusses it with the concerned consultants, presents it on the grand rounds and assumes complete responsibility of the patients during their hospital stay. He should work in harmony with the ward nurses.

B. Out Patient Department (OPD) Duration is 12 months. The candidate is posted to chemotherapy evaluation clinics and various specialty clinics including breast cancer, gastrointestinal, urology, lymphoma-leukemia, pain evaluation, bone and soft tissue, pediatric tumors, head and neck, gynecology oncology, pulmonary oncology. The candidates posted to these clinics work under the supervision of consultants. 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.

C. Day Care And OPD Procedures (Minor OT) Posting

Duration is 4 months. During this posting a candidate is expected to learn skills

- I. In introducing per cutaneous subclavian, internal jugular, and femoral vein catheter,
- II. Familiarity with different venous access devices,
- III. Institution of chemotherapy and supervision of side effects,
- IV. Procedures like bone marrow biopsy, liver biopsy, trucut biopsy, lumbar puncture,
- V. Chemotherapy and aspiration of fluids.

D. Bone Marrow Transplantation Unit Posting

Duration is 4 months. The candidate works under the supervision of concerned consultants and assumes responsibility of managing the patients undergoing high dose chemotherapy and transplant. He is also made familiar with the various types of stem cell mobilization, harvesting, and cryopreservation techniques

E. Elective Posting

Duration is 4 weeks: As per academic needs, candidates shall be sent to certain other centres with specific intention of learning special skills as the need arises. Candidate will have to take permission from head of medical oncology and director of MGMUST.

F. Laboartories

Duration is 6 weeks.

The candidates are posted to various laboratories, some of which are attached to medical oncology itself, such as Biochemistry, Tumour marker lab , Flow cytometry Lab, cytogenetics

laboratory. In addition, candidate is posted in immunology, microbiology, and pathology laboratory.

The candidate is required to learn the basic techniques of tissue culture, cytogenetics, staining and study of peripheral/bone marrow smears, operation of blood cell counter and cell separator machine.

G. Ancillary Posting

Duration is 1 month.

- Preventive and palliative medicine (1 week)
- Radiation oncology (1 week)
- Pathology (1 week)
- Nuclear medicine (1 week)

H. Exam preparatory period:

Duration is 2 weeks.

2 weeks prior to the beginning of the final exit theory exams, the candidates shall be exempted from clinical works. But in case required, the HOD can call back the candidates during this period.

I. Social activities:

Candidates are encouraged to take part in the various departmental social activities, awareness campaigns, screening camps, rural clinics and so forth to increase their awareness about perceptions of the disease and its treatment in the society. This also will help improve their communication and presentation skills.

8. THESIS PROTOCOL AND THESIS

The candidates are required to submit a thesis at the end of three years of training as per the rules and regulations of NMC.

I. Guidelines for Submission of Thesis Protocol & Thesis by candidates

Research shall form an integral part of the education programme of all candidates registered for DM Medical oncology degrees of NMC. The Basic aim of requiring the candidates to

write a thesis protocol & thesis/dissertation is to familiarize him/her with research methodology.

The members of the faculty guiding the thesis/dissertation work for the candidate shall ensure that the subject matter selected for the thesis/dissertation is **feasible, economical** and **original**.

a) PROTOCOL REQUIREMENTS

- The thesis protocol should consist of the following word limits.
- Title : 120 characters (with spacing) page
- Synopsis : 250-300
- Introduction : 300-500
- Review of literature : 800-1000
- Aim and Objectives : Up to 200
- Material and Methods : 1200-1600
- 10-25 References [ICMJE style]

b) It is mandatory to have ethics committee approval before initiation of the research work. The researcher should submit an appropriate application to the ethics committee in the prescribed format of concerned.

II. Guidelines for Thesis

1. The proposed study must be approved by the institutional ethics committee and the protocol of thesis should have been approved by MCI.
2. The thesis should be restricted to the size of 80 pages (maximum). This includes the text, figures, references, annexures, and certificates etc. It should be printed on both sides of the paper; and every page has to be numbered. No page should be left blank. To achieve this, following points may be kept in view: a. The thesis should be typed in 1.5 space using Times New Roman/Arial/Garamond size 12 font, 1” margins should be left on all four sides. Major sections viz., Introduction, Review of Literature, Aim & Objectives, Material and Methods, Results, Discussion, References, and Appendices should start from a new page. Study proforma (Case record form), informed consent form, and patient information sheet may be printed in single space.

III. General Layout of a Thesis:

- **Title-** A good title should be brief, clear, and focus on the central theme of the topic; it should avoid abbreviations. The Title should effectively summarize the proposed research and should contain the PICO elements.
- **Introduction-** It should be focused on the research question and should be directly relevant to the objectives of your study.
- **Review of Literature -** The Review should include a description of the most relevant and recent studies published on the subject.
- **Aim and Objectives -** The ‘Aim’ refers to what would be broadly achieved by this study or how this study would address a bigger question / issue. The ‘Objectives’ of the research stem from the research question formulated and should at least include participants, intervention, evaluation, design.
- **Material and Methods-** This section should include the following 10 elements: Study setting (area), Study duration; Study design (descriptive, case-control, cohort, diagnostic accuracy, experimental (randomized/non-randomized)); Study sample (inclusion/exclusion criteria, method of selection), Intervention, if any, Data collection, Outcome measures (primary and secondary), Sample size, Data management and Statistical analysis, and Ethical issues (Ethical clearance, Informed consent, trial registration).
- **Results-** Results should be organized in readily identifiable sections having correct analysis of data and presented in appropriate charts, tables, graphs and diagram etc.
- **Discussion**–It should start by summarizing the results for primary and secondary objectives in text form (without giving data). This should be followed by a comparison of your results on the outcome variables (both primary and secondary) with those of earlier research studies.
- **Summary and Conclusion-** This should be a précis of the findings of the thesis, arranged in four paragraphs: (a) background and objectives; (b) methods; (c) results; and (d) conclusions. The conclusions should strictly pertain to the findings of the thesis and not outside its domain.
- **References-** Relevant References should be cited in the text of the protocol (in superscripts).
- **Appendices -**The tools used for data collection such as questionnaire, interview schedules, observation checklists, informed consent form (ICF), and participant information sheet (PIS) should be attached as appendices. Do not attach the master chart.

9. LOG BOOK & LEAVE RULES

A candidate shall maintain a log book of procedures performed during the training period, certified by the concerned post graduate teacher / Head of the department / senior consultant.

This log book shall be made available to the board of examiners for their perusal at the time of the final examination.

The log book should show evidence that the before mentioned subjects were covered (with dates and the name of teacher(s)) The candidate will maintain the record of all academic activities undertaken by him/her in log book .

- I. Personal profile of the candidate
- II. Educational qualification/Professional data
- III. Record of case histories
- IV. Procedures learnt
- V. Record of case Demonstration/Presentations
- VI. Every candidate, at the time of practical examination, will be required to produce performance record (log book) containing details of the work done by him/her during the entire period of training as per requirements of the log book. It should be duly certified by the supervisor as work done by the candidate and countersigned by the administrative Head of the Institution.

Leave Rules

1. Candidates are entitled to leave during the course as per the Leave Rules prescribed by MCI.
2. Candidate can avail a maximum of 20 days of leave in a year excluding regular duty off/ Gazetted holidays as per hospital/institute calendar/policy.
3. MATERNITY LEAVE :
 - a. A female candidate is permitted a maternity leave of 90 days once during the entire duration of MCI course.
 - b. The expected date of delivery (EDD) should fall within the duration of maternity leave.
 - c. Extension of maternity leave is permissible only for genuine medical reasons and after prior approval of MCI. The supporting medical documents have to be certified by the Head of the Institute/hospital where the candidate is undergoing MCI training.

- d. The training of the candidate shall be extended accordingly in case of any extension of maternity leave being granted to the candidate.
- e. Candidate shall be paid stipend during the period of maternity leave. No stipend shall be paid for the period of extension of leave.
4. Male MCI candidates are entitled for paternity leave of maximum of one week during the entire period of MCI training.
5. Under normal circumstances leave of one year should not be carried forward to the next year. However, in exceptional cases such as prolonged illness the leaves may be clubbed together with prior approval of department.
6. Any other leave which is beyond the above stated leave is not permissible and shall lead to extension/cancellation of MCI course.
7. Any extension of DM training for more than 2 months beyond the scheduled completion date of training is permissible only under extra-ordinary circumstances with prior approval of department. Such extension is neither automatic nor shall be granted as a matter of routine.
8. Unauthorized absence from MCI training for more than 7 days may lead to cancellation of registration and discontinuation of the MCI training and rejoining shall not be permitted.
9. Medical Leave
 - a. Leave on medical grounds is permissible only for genuine medical reasons should be informed by the concerned institute/hospital about the same immediately after the candidate proceeds on leave on medical grounds.
 - b. The supporting medical documents have to be certified by the Head of the Institute/hospital where the candidate is undergoing MCI training and have to be sent to MCI.
 - c. In case of medical treatment being sought from some other institute/hospital, the medical documents have to be certified by the Head of the institute/hospital where the candidate is undergoing DM training.

10. RECOMMENDED JOURNALS

- I. British Journal of Cancer
- II. Cancer
- III. CA.A Cancer Journal for Clinicians
- IV. Cancer Detection & Prevention
- V. Cancer Genetics and Cytogenetics
- VI. Clinical Oncology
- VII. European Journal of Cancer
- VIII. Genes, Chromosomes and Cancer
- IX. Gynecologic Oncology
- X. Hematological Oncology
- XI. Hematology Oncology Clinics of North America
- XII. Indian Journal of Medical & Pediatric Oncology
- XIII. International Journal of Cancer (UICC)
- XIV. International Journal of Gynecological Cancer
- XV. International Journal of Radiation Oncology Biology/Physics
- XVI. Medical & Paediatric Oncology
- XVII. Nutrition and Cancer
- XVIII. Radiotherapy & Oncology
- XIX. Seminars in Radiation Oncology
- XX. Blood
- XXI. British J. Hematology
- XXII. Bone Marrow Transplantation

BOOKS FOR READING (LATEST EDITION)

- I. Molecular Biology for Oncologists ,YARNOLD..J.R. et al
- II. Cancer Chemotherapy Handbook, BAQUIRANJ DELIA~
- III. Chemotherapy source book, PERRY,M.C,
- IV. Leukemia, HENDERSON,E.S.et al
- V. Atlas of clinical Haematology, BEGEMANN
- VI. Clinical Haematology, ROCHARD Lee. et al
- VII. Clinical Oncology, ABELOFF et al
- VIII. Cancer Principles and Practice of Oncology, DEVITA , V. T. et al,

- IX. Decision Making in Oncology Evidence Based Management, . DJULBEGOVIC. B & SULLIVAN.
- X. AJCC Cancer' Staging Manual (American Joint Committee on Cancer Cancer Treatment, HALNAN E .K
- XI. Cancer' Treatment, HASKEL • Oncology for' Palliative Medicine, HOSKIN PETER & MAKING WENDY)
- XII. Atlas of diagnostic oncology, SKARIN, A.T
- XIII. Pediatric oncology ,Philip LANSZOWSKY
- XIV. William's Haematology[Beutler, Lichtman, Collier & Kipps]
- XV. Wintrobe's Clinical Haematology [Greer et al]
- XVI. Practical Haematology [Dacie & Lewis]
- XVII. Bone Marrow Transplantation. [Forman, Blume & Thomas]
- XVIII. Clinical bone marrow and blood stem cell transplantation [Atkinson et al]
- XIX. Paediatric Haematology by [Nathan & Ozaskie] F.

11.EXAMINATION - FORMATIVE ASSESSMENT

Formative assessment includes various formal and informal assessment procedures by which evaluation of candidate's learning, comprehension, and academic progress is done by the teachers/ faculty to improve candidate attainment. Formative assessment test (FAT) is called as "Formative "as it informs the in process teaching and learning modifications.

The goal of the FAT is to collect information which can be used to improve the candidate learning process. Formative assessment is essentially positive in intent, directed towards promoting learning; it is therefore part of teaching. Validity and usefulness are paramount in formative assessment and should take precedence over concerns for reliability. The assessment scheme consists of Three Parts which has to be essentially completed by the candidates.

The FAT includes:-

Part I:- Conduction of theory examination

Part-II :- Feedback session on the theory performance

Part-III :- Work place based clinical assessment

The schedule is as follows :

Period	Exams	Topics
6th month	Theory and Viva	Supportive care, Oncologic emergencies, Cancer Chemotherapy, Medical ethics
1st year	Theory and Viva	Supportive care, Oncologic emergencies, Cancer Chemotherapy, Medical ethics
18th month	Theory and Viva	Thorax, CNS, Head & Neck, Genetics, CUPS Molecular oncology
2nd year	Theory and Viva	Breast, Gastrointestinal, Genitourinary, Soft tissue sarcoma & Bone, Hepatobiliary and pancreatice
30th month	Theory and Viva	Skin tumors, BMT, Endocrine
Pre-final exam	Theory and Viva	All topics

Scheme of Formative assessment

PART – I

CONDUCT OF THEORY EXAMINATION-Candidate has to appear for Theory Exam and it will be held for One day.

PART – II

FEEDBACK SESSION ON THE THEORY PERFORMANCE

Candidate has to appear for his/her Theory Exam Assessment Workshop.

PART – III

WORK PLACE BASED CLINICAL ASSESSMENT

After Theory Examination, Candidate has to appear for Clinical Assessment.

MODEL PAPER

DM-

MedOnco -I

**DM Examination Month, Year
MEDICAL ONCOLOGY**

Paper-I

**Basic Sciences, Includes Cancer Biology, Tumor Immunology, Cancer Etiology,
Pharmacology, Radiation Biology, Tumour Pathology.**

Time : Three Hours

Maximum Marks: 100

Attempt all questions

All questions carry equal marks

Draw diagrams wherever necessary

1. Immune Check point inhibitors- describe their mode of action and role in oncology. Discuss Pharmacology of Pemrolizumab and response assessment on check point inhibitor therapy.
2. Discuss apoptosis in tumor progression. Elaborate on the Drugs targeting the bcl-2 family.
3. Discuss the role of inflammation in cancer biology.
4. Write in brief- PARP Inhibitors
5. Brief write on The Spectrum and pathogenesis of L-Asparaginase toxicity.
6. Next generation sequencing versus PCR-Write in brief.
7. Discuss the principles of concurrent chemo radiotherapy,
8. Describe the Biological principles of Metronomic Chemotherapy.
9. Describe the Enzyme Polymorphisms in antimetabolite toxicity.
10. Describe the IDH-1 inhibitors

DM Examination Month, Year
MEDICAL ONCOLOGY

Paper-II

Principles of Medical Oncology, Management of Solid tumors

Time : Three Hours

Maximum Marks: 100

Attempt all questions
All questions carry equal marks
Draw diagrams wherever necessary

1. Discuss the role of Dual Her-2 blockade in the adjuvant therapy of early breast cancer.
2. Briefly Write on the staging and risk stratification of Neuroblastoma; mention the protocols of managing high risk neuroblastoma.
3. Tabulate the latest staging system of NSCLC. Mention the management NSCLC with brain metastasis. Discuss brain-directed and systemic therapy as per the driver mutation status.
4. Write in brief the role of chemotherapy and targeted therapy in the management of metastatic gastric cancer.
5. Discuss CART cell therapy in approved indications.
6. Enumerate the Indian guidelines for the management of high risk medulloblastoma- write in brief.
7. Describe the enumerate the differences between right and left colon cancer. Briefly discuss the management of Metastatic pancreatic neuroendocrine tumor.
8. Discuss Radio Frequency ablation
9. Discuss Metastatic Pheochromocytoma
10. Brief write on- Enumerate dose modifications of various chemo therapy drugs in liver dysfunction.

MODEL PAPER

DM-

MedOnco -III

**DM Examination Month, Year
MEDICAL ONCOLOGY**

Paper-III

Haemato-Oncology

Time : Three Hours

Maximum Marks: 100

Attempt all questions

All questions carry equal marks

Draw diagrams wherever necessary

1. How do you differentiate GCb versus ABC Diffuse Large B cell Lymphoma and Briefly mention the molecular pathways involved in each. Mention the management of DLBCL in frontline an relapsed settings.
2. Briefly describe the molecular biology of chronic myeloid leukemia. A 20 Year old male had recent onset CML, his 3rd month bcr-abl IS is 20% how do you manage the case? Mention the adverse effects of second generation bcr-abl tyrosine kinase inhibitors.
3. Discuss the risk stratification and management of multiple myeloma.
4. Describe the diagnosis of invasive aspergillosis. Enumerate various antifungals used in management of aspergillosis- mechanism, diagnosis, dosage and side effects.
5. Describe the pathophysiology of acute graft versus host disease. Mention the management of steroid refractory GVHD.
6. Briefly write on Haplo-identical stem transplantation.
7. Write in brief on Clofarabine.
8. Discuss the Deauville criteria
9. Describe the recent evidence in the management of Follicular Lymphoma in a young and fit patient
10. Write note on daratumumab in relapsed/refractory myeloma.

MODEL PAPER

DM-

MedOnco-IV

**DM Examination Month, Year
MEDICAL ONCOLOGY**

Paper-IV

**Cancer Epidemiology, Cancer Prevention, Psycho-oncology, Palliative care,
Rehabilitation, Societal Oncology**

Time : Three Hours

Maximum Marks: 100

Attempt all questions

All questions carry equal marks

Draw diagrams wherever necessary

1. Write briefly on the role of cancer registries in India and National Cancer Registry Programme (NCRP), Discuss the role of PBCR and HBCR in NCRP.
2. Discuss the management of a 62 years old lady with breast cancer with spinal metastases. The Metastases are hormone receptor positive and Her-2 negative. Mention the various spine-directed and systemic therapies for his patient.
3. Discuss the evolution of the concept of cancer survivorship and its place in contemporary oncology.
4. Write in Brief – Impact of Comprehensive Geriatric Assessment in the elderly cancer patient.
5. Briefly write on Fertility preservation strategies in a 24 year old female with early breast cancer.