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Rajiv Gandhi University of Health Sciences, Karnataka, Bangalore

4th T Block, Jayanagar, Bangalore – 560 041

No. R(E)/Comp Sec/PG-Superspecialty/DM-Oncopathology/10/2022-23 Date. 26.07.2022

NOTIFICATION

Sub: Curriculum for DM Oncopathology Programme – reg

- Ref: 1) Minutes of the meeting of BOS in Superspecialty held on
25.07.2022
2) Orders of Hon'ble Vice-Chancellor dated 26.07.2022

* * *

In exercise of the powers conferred under section 13(2) of RGUHS Act, 1994, the Curriculum for DM Oncopathology Programme is notified as per Annexure-1.

The said curriculum comes into effect from the academic year 2019-20 onwards.

(Approved by Hon'ble Vice-Chancellor)


REGISTRAR

To
Principals of all affiliated colleges conducting DM Oncopathology Programme.

Copy to :-

1. The Secretary to Governor, Governors Secretariat, Raj Bhavan, Bengaluru- 560 001
2. The Secretary to Government, Health & Family Welfare Department (Medical Education), M.S. Building, Bengaluru- 560 001
3. The Director, Department of Medical Education, Ananda Rao Circle, Bengaluru- 560 009
4. PA to Vice-Chancellor/Registrar/Registrar(Evaluation)/Finance Officer
5. Director, Curriculum Development Cell
6. Deputy Registrar, Admission/Affiliation
7. The homepage of RGUHS Website
8. Guard File/Office copy

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Rajiv Gandhi University of Health Sciences, Karnataka

4th "T" Block, Jayanagar, Bangalore – 560041

Curriculum for DM Oncopathology Programme



**Rajiv Gandhi University of Health Sciences,
Karnataka**

4th "T" Block, Jayanagar, Bangalore – 560041

Regulations and Curriculum

for

D. M. ONCOPATHOLOGY

2022



Rajiv Gandhi University of Health Sciences, Karnataka

4th 'T' Block, Jayanagar, Bangalore - 560 041

(Annexure to University Notification No. UA/ORD-6/99-2000 dated 01.01.2000)

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Rajiv Gandhi University of Health Sciences, Karnataka Bangalore

The Emblem



The Emblem of the Rajiv Gandhi University of Health Sciences is a symbolic expression of the confluence of both Eastern and Western Health Sciences. A central wand with entwined snakes symbolises Greek and Roman Gods of Health called Hermis and Mercury is adapted as symbol of modern medical science. The pot above depicts Amrutha Kalasham of Dhanvanthri the father of all Health Sciences. The wings above it depicts Human Soul called Hamsa (Swan) in Indian philosophy. The rising Sun at the top symbolises knowledge and enlightenment. The two twigs of leaves in western philosophy symbolises Olive branches, which is an expression of Peace, Love and Harmony. In Hindu Philosophy it depicts the Vanaspathi (also called as Oushadi) held in the hands of Dhanvanthri, which are the source of all Medicines. The lamp at the bottom depicts human energy (kundalini). The script “Devahitham Yadayahu” inside the lamp is taken from Upanishath Shanthi Manthram (Bhadram Karnebhi Shrunuyanadev...), which says “**May we live the full span of our lives allotted by God in perfect health**” which is the motto of the Rajiv Gandhi University of Health Sciences.

Rajiv Gandhi University of Health Sciences, Karnataka

Bangalore

Vision Statement

The Rajiv Gandhi University of Health Sciences, Karnataka, aims at bringing about a confluence of both Eastern and Western Health Sciences to enable the humankind “Live the full span of our lives allotted by God in Perfect Health”

It would strive for achievement of academic excellence by Educating and Training Health Professionals who

- ❖ Shall recognize health needs of community,
- ❖ Carry out professional obligations Ethically and Equitably and in keeping with National Health Policy,

It would promote development of scientific temper and Health Sciences Research.

It would encourage inculcation of Social Accountability amongst students, teachers and institutions.

It would Support Quality Assurance for all its educational programmes

Motto

Right for Rightful Health Sciences Education

Rajiv Gandhi University of Health Sciences, Karnataka, Bangalore.
Regulations for Post Graduate Degree and Diploma Courses in Medical Sciences

D M (Doctor of medicine)

ONCOPATHOLOGY

CURRICULUM

RAJIV GANDHI UNIVERSITY OF HEALTH SCIENCES

CHAPTER I REGULATIONS

1.1. Eligibility for Students admission

D.M.: Candidate seeking admission for D.M courses in any subject must possess recognized degree of MD (or its equivalent recognized degree) in the subject specified in the regulations of the Medical Council of India /National Medical Commission(NMC) from time to time.

1.2. Eligibility of the Teaching Staff

The ordinance governing curriculum of DM-Onco-Pathology programme has to be implemented as per MCI/NMC guidelines issued under Gazette of India from time to time. [CG-DL-E-23022022-23 3681. Notification dated 14 FEB 2022 Teachers Eligibility Qualifications in Medical Institutions Regulations, 2022 F.No.NMC/MCI-23(I)/2021-MED]

2 . Obtaining Eligibility Certificate by the University before making Admission

No candidate shall be admitted for any postgraduate degree/diploma course unless the candidate has obtained and produced the eligibility certificate issued by the University. The candidate has to make an application to the University with the following documents along with the prescribed fee :

1. MBBS and MS pass / degree certificate issued by the University.
2. Marks cards of all the university examinations passed MBBS course.
3. Attempt Certificate issued by the Principal.
4. Certificate regarding the recognition of the medical college by the Medical Council of India/ National Medical Commission
5. Completion of internship certificate.
6. In case internship was done in a non-teaching hospital, a certificate from the Medical Council of India/ National Medical Commission that the hospital has been recognized for internship.
7. Registration by any State Medical Council and
8. Proof of SC/ ST or Category I, as the case may be.

Candidates should obtain the Eligibility Certificate before the last date for admission as notified by the University.

A candidate who has been admitted to super specialty course should register his / her name in the University within a month of admission after paying the registration fee.

3. Intake of Students: The intake of students to each course shall be in accordance with the ordinance in this behalf.

4. Duration of Study D.M: The courses of study shall be for a period of 3 years consisting of 6 terms.

5. Method of training

The training of students for DM course shall be residency pattern with graded responsibilities in the diagnosis of various tumours. The participation of the students in all facets of educational process is essential. Every candidate should take part in seminars, group discussions, journal review meetings, CPC and tumor boards. Every candidate should be

required to participate in the teaching and training programme of postgraduate and paramedical students. Training should include involvement in laboratory and experimental work and research studies. Basic medical sciences students should be posted to allied and relevant clinical departments or institutions.

6. Attendance, Progress and Conduct

A candidate pursuing DM course should work in the concerned department of the institution for the full period as a full time student. No candidate is permitted to run a clinic/laboratory while studying super specialty course.

Each year shall be taken as a unit for the purpose of calculating attendance.

Every student shall attend symposia, seminars, conferences, journal review meetings, grand rounds, CPC, case presentation and lectures during each year as prescribed by the department and not absent himself / herself from work without valid reasons.

Every candidate is required to attend a minimum of 80% of the training during each academic year of the super specialty course. Provided further, leave of any kind shall not be counted as part of academic term without prejudice to minimum 80% attendance of training period every year.

Any student who fails to complete the course in the manner stated above shall not be permitted to appear for the University Examinations

7. Monitoring Progress of Studies

7.1 Work diary / Log Book - Every candidate shall maintain a work diary and record of his/her participation in the training programmes conducted by the department such as journal reviews, seminars, etc. (please see Chapter VII for model checklists and logbook specimen copy). Special mention may be made of the presentations by the candidate as well as details of laboratory procedures, if any conducted by the candidate. The work diary shall be scrutinised and certified by the Head of the Department and Head of the Institution and presented in the university practical/clinical examination.

7.2 Periodic tests:

In case of degree courses of three years duration (MD/MS, DM, MCh.), the concerned departments may conduct three tests, two of them be annual tests, one at the end of first year and the other in the second year. The third test may be held three months before the final examination. The tests may include written papers, practicals and viva voce

7.3 Records: Records and marks obtained in tests will be maintained by the Head of the Department and will be made available to the University or MCI/NMC.

8. Schedule of Examination

The examination for D M courses shall be held at the end of three years. The university shall conduct two examinations in a year at an interval of four to six months between the two examination. Not more than two examinations shall be conducted in an academic year

9. Scheme of Examination: D M:

The examination shall consist of theory, /practical and viva voce examination.

9.1 (Theory) (Written Examination): The theory examination shall consist of four question papers, each of three hours duration. Each paper shall carry 100 marks. Out of the four papers, the first paper will be on basic medical sciences. Recent advances may be asked in any or all the papers.

9.2 Practical / Clinical Examination:

In case of practical examination, it should be aimed at assessing competence, skills of techniques and procedures as well as testing student's ability to make relevant and valid observations, interpretation and experimental work relevant to his / her subject.

9.3 In case of practical examination, it should aim at examining laboratory skills and competence of candidates for undertaking independent work as a specialist. The maximum marks for Practical shall be 200.

9.4 Viva Voce: Viva Voce examination shall aim at assessing thoroughly depth of knowledge, logical reasoning, confidence and oral communication skills. The maximum marks shall be 100.

9.5 Examiners: There shall be at least four examiners in each subject. Out of them, two shall be external examiners and two shall be internal examiners. The qualification and teaching experience for appointment as an examiner shall be as laid down by the Medical Council of India/ National Medical Commission.

9.6 Criteria for declaring as pass in University Examination: A candidate shall secure not less than 50% marks in each head of passing which shall include (1) Theory, (2) Practical including viva voce examination.

A candidate securing less than 50% of marks as described above shall be declared to have failed in the examination. Failed candidate may appear in any subsequent examination upon payment of fresh fee to the Registrar (Evaluation).

9.7 Declaration of distinction: A successful candidate passing the University examination in first attempt will be declared to have passed the examination with distinction, if the grand total aggregate marks is 75 percent and above. Distinction will not be awarded for candidates passing the examination in more than one attempt.

9.8 Number of Candidates per day D M Course: The maximum number of candidates for practical and viva-voce examination shall be maximum of 3 per day

CHAPTER II

GOALS AND GENERAL OBJECTIVES OF POSTGRADUATE MEDICAL EDUCATION PROGRAM

GOAL

The goal of postgraduate medical education shall be to produce competent specialist and /or Medical teacher:

- (i) who shall recognize the health needs of the community, and carry out professional obligations ethically and in keeping with the objectives of the national health policy;
- (ii) who shall have mastered most of the competencies, pertaining to the specialty, that are required to be practiced at the secondary and the tertiary levels of the health care delivery system;
- (iii) who shall be aware of the contemporary advances and developments in the discipline concerned;
- (iv) who shall have acquired a spirit of scientific inquiry and is oriented to the principles of research methodology and epidemiology; and
- (v) who shall have acquired the basic skills in teaching of the medical and paramedical professionals.

GENERAL OBJECTIVES

At the end of the postgraduate training in the discipline concerned the student shall be able to:

- (i) Recognise the importance of the concerned specialty in the context of the health need of the community and the national priorities in the health sector.
- (ii) Practice the specialty concerned ethically and in step with the principles of primary health care.
- (iii) Demonstrate enough understanding of the basic sciences relevant to the concerned specialty.
- (iv) Identify social, economic, environmental, biological and emotional determinants of health in each case, and take them into account while planning therapeutic, rehabilitative, preventive and promotive measures/strategies.
- (v) Diagnose and manage majority of the conditions in the specialty concerned based on clinical assessment, and appropriately selected and conducted investigations.
- (vi) Plan and advise measures for the prevention and rehabilitation of patients suffering from disease and disability related to the specialty.

- (vii) Demonstrate skills in documentation of individual case details as well as morbidity and mortality data relevant to the assigned situation.
- (viii) Demonstrate empty and humane approach towards patients and their families and exhibit interpersonal behaviour in accordance with the societal norms and expectations.
- (ix) Play the assigned role in the implementation of national health programmes, effectively and responsibly.
- (x) Organise and supervise the chosen/assigned health care services demonstrating adequate managerial skills in the clinic/hospital or the field situation.
- (xi) Develop skills as a self-directed learner, recognise continuing educational needs; select and use appropriate learning resources.
- (xii) Demonstrate competence in basic concepts of research methodology, epidemiology, and be able to critically analyse relevant published research literature.
- (xiii) Develop skills in using educational methods and techniques as applicable to the teaching of medical/nursing students, general physicians and paramedical health workers.
- (xiv) Function as an effective leader of a health team engaged in health care, research or training.

STATEMENT OF THE COMPETENCIES

Keeping in view the general objectives of postgraduate training, each discipline shall aim at development of specific competencies, which shall be defined and spelt out in clear terms. Each department shall produce a statement and bring it to the notice of the trainees in the beginning of the programme so that he or she can direct the efforts towards the attainment of these competencies.

COMPONENTS OF THE PG CURRICULUM

The major components of the PG curriculum shall be:

- i) Theoretical knowledge
- ii) Practical/clinical Skills
- iii) Attitudes, including communication.
- iv) Training in research methodology.

Source: Medical Council of India/National Medical Commission, Regulations on postgraduate medical education, 2000.

Annexure to University Notification No: No. UA/ORD-06/1999-2000, dated, 01.01.2000

CHAPTER III

D.M ONCO-PATHOLOGY

Course Description

Goals

The super-specialty course in Oncopathology is intended to produce a well informed and trained Specialist who can diagnose and categorize based on recent molecular classifications. He/She should be academically strong and be able to keep up to date.

A Oncopathologist is a super specialist who has undergone additional specific training in tumour pathology. A good Oncopathologist is one who applies the thoughtful approach to problem solving. Multiple other interactions occur with Diagnostic radiology, radiation oncology, pediatric oncology, medical oncology, surgical oncology, oral and head & neck oncology, Neuro-oncology, Gynecologic oncology, Rehabilitation Medicine to arrive at a diagnosis.

Research

No cancer is so well treated that an improvement in outcome or therapeutic approach cannot readily be imagined. Thus, research is imperative. Furthermore, therapies that allow preservation of the involved organ are much to be desired, and investigations that have led, in many patients, to organ preservation, limb salvage, bladder conservation, and avoidance of abdomino-perineal resection are major dividends in the diagnosis of cancers in these organs. Although in these instances it would appear self-evident, measuring the quality of life is now quantitatively valid and has added a major opportunity to each value judgment. Every established paradigm of diagnostic oncopathologist arose from some investigative effort. In many instances, these were one-armed studies that were so successful they became adopted.

Every oncopathologist's office should be a research station. Every oncopathologist during his or her training was exposed to, and almost always was a participant in, clinical research.. There is much reason to anticipate that progress would be more rapid if clinical research were accepted as an integral part of the practice of Oncopathology, so that more oncopathologists and patients would participate than at present. The technology exists in pathology for community oncologists to ally themselves with their alma mater or other academic centers to participate in diagnostic, preventive, prognostic and therapeutic research trials using the computer, e-mail, and fax as expedient tools. As a part of the commitment to Oncopathology, an Onco-pathologist should reserve a certain number of hours per week for participation in clinical research. This has the virtue of maintaining greater currency with ongoing investigation. Clinical investigation should serve as the bridge to fundamental science and the excitement in the new molecular biologic understanding of the cancer cell. A set-aside for research, however, constitutes the same imperative commitment as a set-aside for education and updating.

Objectives:

The following objectives are laid out to achieve the goals of the course. These objectives are to be achieved by the time the candidate completes the course. The Objectives may be considered under the subheadings

- I. Knowledge
- II. Skills
- III. Human values, Ethical practice and Communication abilities

Knowledge

- Describe etiology, patho-physiology, and principles of diagnosis and prognostication of malignancies.
- Demonstrate understanding of basic sciences relevant to this speciality
- Identify socio-economic, environmental and emotional determinants in a given case, and take them into account for planning diagnostic tests.
- Recognize conditions that may be outside the area of his specialty/competence and to interact with other disciplines.
- Update oneself by self-study and by attending courses, conferences and seminars relevant to the specialty.
- Teach and guide his team, colleagues and other students.
- Undertake audit.
- Use information technology tools and carry out research, both basic and clinical, with the aim of presenting or publishing his/her work in various scientific forum or journals.

Skills

- Take a proper clinical history, examine the patient, perform essential diagnostic procedures (FNAC, bone marrow aspirations and biopsy) and order relevant tests and interpret them to come to a reasonable diagnosis & staging of disease.
- Perform common procedures relevant to the specialty.

Attitude and Communication Abilities

- Adopt ethical principles in all aspects of his/her practice. Professional honesty and integrity are to be fostered. Care is to be delivered irrespective of the social status, caste, creed or religion of the patient.
- Develop communication skills, in particular the skill to explain various options available in management and to obtain a true informed consent from the patient & breaking of bad news.

- Provide leadership and get the best out of his team in a congenial working atmosphere.
- Apply high moral and ethical standards while carrying out human or animal research.
- Be humble and accept the limitations in his knowledge and skill and to ask for help from colleagues when needed.
- Respect patient's rights and privileges including patient's right to information and right to seek a second opinion.

Course description

Postings during the first year of DM oncopathology

Divided into two sessions

For the first academic term (6 months) they will be posted in the department of pathology, Histopathology unit, KMIO. During this period they have to learn grossing of oncopathology specimens, refresh their knowledge on basics of tissue processing, sections cutting, staining, frozen section reporting and start learning the synoptic reporting of oncopathology specimens. During this period they will have to learn oncopathology routine reporting, trouble shooting in tissue processing and staining techniques and cytochemistry : Peroxidase/Sudan black B, PAS, LAP, NSE and Perls stain.

During the second academic term they will be posted in the department of pathology KMIO (Haematology unit – 3months, Cytology unit – 3months). During this period they will have to refresh their knowledge on cytology (staining and interpretation including LBC) haematology – basic of staining and reporting including the analysis, interpretation of the flow cytometry report

DM students will be taking grossing duties, FNAC duties, holiday duties at KMIO and assist in reporting with consultants of histopathology, cytology, haematology.

Internal assessment test at the end of the year-Theory and Practicals

Postings during the second year of DM oncopathology

Divided into two sessions

For the third academic term(6 months) they will be posted to IHC, FISH, and Cytogenetics and upcoming molecular pathology lab and vigorously trained to do the test along with learning the interpretation independently. A log book will be maintained by each student for each day work mentioning the details and the test done including the patient and lab details by herself/himself / with interpretation and results. This will be assessed by the consultant.

During the fourth academic term they will be sent for the peripheral postings of 3 months for learning neuropathology, Molecular pathology atleast in two institutions of higher level.

Formative assessment test in both theory and practical aspects will be conducted at the end of second year.

Post graduate will be taking grossing duties, FNAC duties, holiday duties at KMIO and assist in reporting with consultants of histopathology, cytology, haematology during the entire second year.

Postings during the third year of DM oncopathology

Divided into two sessions

For the fifth academic term(6 months)

During this period they will have to learn difficult oncopathology case reporting, frozen section reporting, Immunohistochemistry reporting, liquid based cytology reporting, interpretation of flow cytometry, FISH and PCR.

During the sixth term they will be posted in cytopathology for 3 months. Two months haematooncology and 1 month molecular pathology including cytogenetics.

During the last term they will have to see teaching slides prepared for post graduates, revise all techniques pertaining to DM examination.

No thesis submission for DM Oncopathology as per RGUHS guidelines.

All students must publish at least one paper in scientific indexed journal. Submitted for publication is also acceptable.

During the three year of learning the post graduates will be taking grossing duties, FNAC duties, holiday duties at KMIO and they will be proficient in independently reporting cases of all formats of oncopathology.

Special features of DM oncopathology course

1. Grossing of oncopathology specimens including uncommon surgeries synoptic of surgical pathology specimens according to AJCC 8th edition and latest CAP guidelines.
2. Hands on training for IHC, FISH, TMA, RT-PCR and PCR. Exposure to whole exome sequencing and NGS in the Center for Molecular Oncology.
3. Posting to NIMHANS for training in Electron Microscopy, Neuro-oncopathology, Brain Banking and Partial Autopsy.
4. The Centre for Molecular Oncology is being established in the KMIO premises where a central lab with high end equipment will be placed. This will be available to all students and especially to Pathology MD and DM students to learn hands-on molecular techniques. Some

molecular tests will be offered as a routine service to patients-Eg: EGFR in lung cancer, KRAS in colorectal cancer.

5. DM oncopathology students will be trained to integrate findings obtained from cytology, cytogenetics, flow cytometry and histopathology including IHC for any given case in a holistic manner.

Course Contents and Details of the core curriculum

General Pathology

Cellular adaptation

Cell injury and death

Tissue renewal and repair

Genetic disease and tumor immunology

Carcinogenesis and neoplasia

Hereditary cancers and familial cancer syndromes.

Systemic Pathology

Tumors of GIT and hepato biliary system

Tumors of soft tissue and bone

Tumors of lung and mediastinum

Tumors of lymph node and hemopoietic system

Tumors of CNS and Eye

Tumors of Head and neck

Tumors of breast

Tumors of Female genital system

Tumors of male genital system

Tumors of urinary system

Tumors of Endocrine system

Tumors of skin

Tumor like lesions in all sites.

Immunohistochemistry and FISH for accurate subcategorisation of specific tumors.

Cyto-Oncopathology

Cytopathology techniques

Routine, guided (computed tomography (CT) and, ultrasound guided fine needle aspiration cytology.

- Liquid based cytology
- Non gynaec cytology including fluids, bronchial wash and BAL
- Automated cytology
- Oncocytology of different systems :
 - Lung and mediastinum
 - Soft tissue and bone
 - Lymphnode
 - Salivary glands
 - Breast
 - GIT, liver, abdominal organs
 - Thyroid
 - Kidney
- FNA for cytogenetics, cell blocks, IHC and ISH
- FNA for flowcytometry of lymphoproliferative disorders and paediatric solid tumors.

Haemato Oncopathology

- Basic techniques
- Automation and quality control
- Haematologic malignancies- PS, BM aspiration and BM biopsy
- MDS – Myelodysplastic syndrome
- Acute myeloid malignancies
- Acute lymphoid malignancies
- Chronic myeloid malignancies
- Chronic lymphoid malignancies
- CMPD (Chronic myeloproliferative disorders)
- CLPD(Chronic lymphoproliferative disorders)
- Plasma cell dyscrasias
- Flow Cytometry – panels for acute leukemia, CLPD
- Minimal Residual disease for patients on followup

Molecular Pathology

- Techniques in cytogenetics – routine karyotyping
- TMA (Tissue micro array)
- FISH (Fluorescence in-situ hybridization)
- CGH (Comparative genomic hybridization)
- PCR (Polymerase chain reaction) and RT-PCR
- NGS (Next generation Sequencing)

Recent advances in Oncopathology

CHAPTER IV
ACADEMIC ACTIVITIES IN THE DEPARTMENT

The courses of the study shall be for a period of three years consisting of six terms/semesters

Semesters I and II	-- First Year
Semesters III and IV	-- Second Year
Semesters V and VI	-- Third Year

The aim of the course is to impart thorough and comprehensive training to the candidate in the various aspects of this specialty to enable him/her:

- (a) To function as a faculty/consultant in the specialty
- (b) To carry out and help in conducting applied research in the field of oncopathology
- (c) To plan and set-up independent Oncopathology units catering to the needs of superspeciality cancer care hospital

Compulsory academic activities:

Journal club: once a week

Subject Seminar: Once a week

Slide Seminar: Once in 30 days

Multi disciplinary seminars: Once a week.

Case based discussion: Once a week

Teaching M.D. students, both KMIO and Outside Post graduates

Writing a paper (atleast 1):

Selection of topic and getting institutional approval – first year

Data collection and writing the paper- second year

Publication of paper – final year

In addition the trainee will be allowed to attend national and international conferences of Pathology and other relevant specialties

Journal Review Meeting

Journal Review should be held once a week. All students are expected to attend and actively participate in discussion and enter in logbook the relevant details.

All the students are expected to present articles of recent interest & clinical weightage by turn.

A timetable with name of student and moderator should be announced before hand. A record of the presentations made should be entered in logbook.

Seminars

Seminars should be made once a week. All students should present seminars by turn. At other times he is expected to actively attend the seminars. A list of name of students with topic and moderator should be submitted beforehand. Students should enter the presented seminars in logbook.

ClinicoPathological Conference and Interdepartmental Meeting

It is recommended once a month and all students are expected to present cases of interest by turn. Active participation by medical/ surgical/ radiation oncologist/ radiologists is recommended. Prior intimation of case by students to faculty members is expected. Such meetings should be entered into logbook.

Teaching Programme

A student must be familiar with use of Library, Computer network, Internet, PDQ etc.

A student should be actively involved in teaching nursing students, undergraduate (BSc MLT) & postgraduates.

DM students are encouraged to learn about clinical research by interacting with clinical investigators if any clinical trial is going on in the institution.

CME Programme

National level conference – 1 each year

State level Conference - 1 each year

PROPOSED ROTATIONAL POSTINGS

Postings for DM Oncopathology	
Basic structure of DM curriculum	
Histopathology	15 months
Cytopathology	6 months
Hematopathology	6 months
Clinical postings (medical/ pediatric/ gynaec/ radiology)	15 days each x 4=2 months
Neuropathology (NIMHANS)	1 month
FISH, cytogenetics, IHC	3 months
Molecular pathology	3 months

Log Book

The logbook is a record of the important activities of the candidates during his training; internal assessment should be based on the evaluation of the log book. Collectively, logbooks are a tool for the evaluation of the training programme of the institution by external agencies. The record

includes academic activities as well as the presentations and procedures carried out by the candidate.

Every student must maintain a record book (diary/log book) and the work carried out by him and the training programme undergone by him during the training, including details of rotation, night calls, procedure and consultations done as D.M candidates. These record books should be checked and assessed by faculty members imparting the training and certified by the head of the department.

Research Training

The candidate is introduced to the field of research in Oncopathology.

CHAPTER V

Scheme of Examination

Written Examination Marks : 400

There shall be four question papers, each of three hours duration. Each paper shall consist long essay questions, each question carrying 10 marks. Total marks for each paper will be 100. Questions on recent advances may be asked in all papers. Details of distribution of topics for each paper will be as follows.(as per course contents)

Paper I : Basic sciences and Principles of laboratory techniques

Paper II : Systemic Onco-Pathology I (Breast, Hematolymphoid, Bone and soft tissue, Neuro-oncopathology, Pediatric Oncopathology, Endocrine pathology)

Paper III : Systemic Onco-Pathology II (Head and neck, Gastrointestinal, Thoracic, Urologic, male and female genital tract)

Paper IV: Recent advances in Onco-Pathology

Practical Examination Marks : 200

To elicit Competence in diagnostic skills--,

1. Histo-pathology, hemato-pathology, cytology slides for interpretation,
2. Assessment of synoptic reporting (dataset as per CAP guidelines)
3. Grossing of specimens (as per dataset as per CAP guidelines)
4. Charts-ancillary techniques: IHC, flow cytometry, cytogenetics, FISH and other molecular pathology techniques

Viva voce: Marks : 100

All examiners will conduct viva – voce conjointly on candidate's comprehension, analytical approach, expression and interpretation of data. It includes all components of course contents, in addition candidates may be also be given case reports, Questions on use of instruments will be asked. It includes presentation and discussion on the paper published and recent advances.

Maximum marks

Theory	Practical	Viva	Grand total
400	200	100	700

CHAPTER VI

Recommended Books & Journals

Books (Latest Edition):

1. Robbins and Cotran Pathologic basis of disease
2. Rosai and Ackerman's Surgical Pathology
3. Atlas and Text of Haematology by Tejinder Singh
4. Orell's Atlas of Aspiration Cytology
5. Lever's Dermatopathology
6. Novak's Gynecologic and Obstetric Pathology with Clinical and Endocrine Relations by Edmund R. Novak
7. Bone Pathology by H. Jaffe
8. Mac Sween's Pathology of the liver
9. Iaochim's Lymph Node Pathology
10. Rosen's breast pathology
11. Text Book on Thyroid Pathology by Geetha Jayaram
12. Theory and Practice of Histological Techniques by Bancroft
13. Gray's Diagnostic Cytopathology
14. Sternberg's Diagnostic Surgical Pathology
15. Dacie's Practical Haematology
16. Wintrobe's Haematology
17. Enzinger's Soft Tissue Tumours
18. Henry's clinical diagnosis and management by laboratory methods
19. Atlas of clinical Haematology, BEGEMANN
20. Mckenzie Clinical laboratory Hematology
21. Leukemia, HENDERSON, E.S. et al
22. The Lymphomas, CANELLOS, G.P. et al
23. Molecular Diagnosis of Cancer , COTTER, F.E.
24. Biopsy interpretation series

25. AJCC Cancer' Staging Manual (American Joint Committee on Cancer)
26. Emery's elements of medical genetics
27. The chromosomes in human cancer and leukemia
28. Molecular diagnosis of cancer, Cotter
29. Dabbs Immunohistochemistry
30. Atlas for diagnostic oncology, Skarin
31. Basic sciences of oncology, Tannok
32. WHO blue books for specific systems

Journals :

1. Actacytologica
2. Indian journal of pathology and microbiology
3. ActaOncologica
4. Modern pathology
5. Brain pathology
6. Diagnostic cytopathology
7. Haematology/Oncology
8. British Journal of Cancer
9. Cancer
10. The Lancet
11. Cancer Genetics and Cytogenetics
12. Cancer Journal (Scientific American) (NP)
13. Histopathology
14. Seminars in Diagnostic Pathology
15. European Journal of Cancer
16. Genes, Chromosomes and Cancer
17. Haematological Oncology
18. Haematology Oncology Clinics of North America
19. Indian Journal of Cancer
20. International Journal of Cancer (UICC)
21. Journal Of PaediatricHaematology and Oncology
22. Seminars in Oncology
23. Archives of Pathology and laboratory medicine.
24. Diagnostic Histopathology
25. Human pathology
26. Blood

CHAPTER VII

Monitoring Learning Progress

It is essential to monitor the learning progress of each candidate through continuous appraisal and regular assessment. It not only also helps teachers to evaluate students, but also students to evaluate themselves. The monitoring is done by the staff of the department based on participation of students in various teaching / learning activities. It may be structured and assessment be done using checklists that assess various aspects. Checklists are given in Chapter IV.

The learning out comes to be assessed should included: (i) Personal Attitudes, (ii) Acquisition of Knowledge, (iii) Clinical and operative skills, and (iv) Teaching skills.

- i) **Personal Attitudes.** The essential items are:
- Caring attitudes
 - Initiative
 - Organisational ability
 - Potential to cope with stressful situations and undertake responsibility
 - Trust worthiness and reliability
 - To understand and communicate effectively with patients and others
 - To behave in a manner which establishes professional relationships with patients and colleagues
 - Ability to work in team
 - A critical enquiring approach to the acquisition of knowledge

The methods used mainly consist of observation. It is appreciated that these items require a degree of subjective assessment by the guide, supervisors and peers.

ii) **Acquisition of Knowledge:** The methods used comprise of 'Log Book' which records participation in various teaching / learning activities by the students. The number of activities attended and the number in which presentations are made are to be recorded. The log book should periodically be validated by the supervisors. Some of the activities are listed. The list is not complete. Institutions may include additional activities, if so, desired.

Journal Review Meeting (Journal Club): The ability to do literature search, in depth study, presentation skills, and use of audio- visual aids are to be assessed. The assessment is made by faculty members and peers attending the meeting using a checklist (see Model Checklist – I)

Seminars / Symposia: The topics should be assigned to the student well in advance to facilitate in depth study. The ability to do literature search, in depth study, presentation skills and use of audio- visual aids are to be assessed using a checklist (see Model Checklist-II)

Clinico-pathological conferences: This should be a multidisciplinary case study of an interesting case to train the candidate to solve diagnostic and therapeutic problems by using an analytical approach. The presenter(s) are to be assessed using a check list similar to that used for seminar.

Periodic morbidity and mortality meeting be held. Attendance and participation in these must be insisted upon. This may not be included in assessment.

iii) Laboratory skills

Day to Day work: Skills in grossing of Oncology specimens, performing FNA and preparation of cell block, interpretation of histopathology, cytology and hematology slides and flow cytometry should be assessed periodically. The assessment should include the candidates' sincerity and punctuality.

iv) Teachingskills: Candidates should be encouraged to teach postgraduate Pathology students and Para Medical students, if any. This performance should be based on assessment by the faculty members of the department and from feedback from the postgraduate students (See Model checklist IV)

vi) Periodic tests: The department may conduct three tests, two of them be annual tests, one at the end of first year and the other in the second year. The third test may be held three months before the final examination. The tests may include written papers, practicals / clinicals and viva voce.

vii) Work diary / Log Book- Every candidate shall maintain a work diary and record his/her participation in the training programmes conducted by the department such as journal reviews, seminars, etc. Special mention may be made of the presentations by the candidate .

viii) Records: Records, log books and marks obtained in tests will be maintained by the Head of the Department and will be made available to the University or MCI/NMC.

Log book

The log book is a record of the important activities of the candidates during his training. Internal assessment should be based on the evaluation of the log book. Collectively, log books are a tool for the evaluation of the training programme of the institution by external agencies. The record includes academic activities as well as the presentations carried out by the candidate.

Format for the logbook for the different activities is given in Tables 1, 2 and 3 . Copies may be made and used by the institutions.

Procedure for defaulters: Every department should have a committee to review such situations. The defaulting candidate is counseled by the guide and head of the department. In extreme cases of default the departmental committee may recommend that defaulting candidate be withheld from appearing the examination, if she/he fails to fulfill the requirements in spite of being given adequate chances to set himself or herself right.

Format of Model Check Lists

Check List -1. MODEL CHECK-LIST FOR EVALUATION OF JOURNAL REVIEW PRESENTATIONS

Name of the Student:

Name of the Faculty/Observer:

Date:

Sl. No.	Items for observation during presentation	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1.	Article chosen was					
2.	Extent of understanding of scope & objectives of the paper by the candidate					
3.	Whether cross references have been consulted					
4.	Whether other relevant publications consulted					
5.	Ability to respond to questions on the paper / subject					
6.	Audio-Visual aids used					
7.	Ability to defend the paper					
8.	Clarity of presentation					
9.	Any other observation					
	Total Score					

Check List - 2. MODEL CHECK-LIST FOR EVALUATION OF SEMINAR PRESENTATIONS

Name of the Student:

Name of the Faculty/Observer:

Date:

Sl. No.	Items for observation during presentation	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1.	Whether other relevant publications consulted					
2.	Whether cross references have been consulted					
3.	Completeness of Preparation					
4.	Clarity of Presentation					
5.	Understanding of subject					

6.	Ability to answer questions					
7.	Time scheduling					
8.	Appropriate use of Audio-Visual aids					
9.	Overall Performance					
10.	Any other observation					
	Total Score					

Check List - 3

MODEL CHECK LIST FOR EVALUATION OF WORK IN LABORATORY

(To be completed once a month by respective Unit Heads including posting in other departments)

Name of the Student:

Name of the Unit Head:

Date:

Sl. No.	Points to be considered:	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1.	Regularity of attendance					
2.	Punctuality					
3.	Interaction with colleagues and supportive staff					
4.	Reporting of slides on daily basis					

5.	Ancillary techniques Interpretation (IHC,FISH,Flow cytometry,Cytogenetics)					
6.	Overall quality of assigned Lab work					
7.	Total Score					

Check List - 4

MODEL CHECK LIST FOR EVALUATION OF TEACHING SKILL PRACTICE

Sl. No.		Strong Point	Weak Point
1.	Communication of the purpose of the talk		
2.	Evokes audience interest in the subject		
3.	The introduction		
4.	The sequence of ideas		
5.	The use of practical examples and/or illustrations		
6.	Speaking style (enjoyable, monotonous, etc., specify)		
7.	Attempts audience participation		
8.	Summary of the main points at the end		
9.	Asks questions		
10.	Answers questions asked by the audience		
11.	Rapport of speaker with his audience		
12.	Effectiveness of the talk		
13.	Uses AV aids appropriately		

Model Overall Assessment Sheet

Name of the College:
Academic Year:

Check List No	Particulars	Name of Student and Mean Score				
		A	B	C		
I	Journal Review Presentations					
II	Seminars					
III	Work in laboratory					
IV	Teaching skill practice					
Total Score						

Note: Use separate sheet for each year.

CHAPTER VIII

Medical Ethics

Sensitisation and Practice

Introduction

There is now a shift from the traditional individual patient, doctor relationship, and medical care. With the advances in science and technology and the needs of patient, their families and the community, there is an increased concern with the health of society. There is a shift to greater accountability to the society. Doctors and health professionals are confronted with many ethical problems. It is, therefore necessary to be prepared to deal with these problems. To accomplish the Goal (i), General Objective (ii) stated in Chapter II (pages 2.1 to 2.3), and develop human values it is urged that *ethical sensitisation* be achieved by lectures or discussion on ethical issues, clinical case discussion of cases with an important ethical component and by including ethical aspects in discussion in all case presentation, bedside rounds and academic postgraduate programmes.

Course Contents

1. *Introduction to Medical Ethics*

What is Ethics

What are values and norms

Relationship between being ethical and human fulfillment

How to form a value system in one's personal and professional life

Heteronomous Ethics and Autonomous Ethics

Freedom and personal Responsibility

2. *Definition of Medical Ethics*

Difference between medical ethics and bio-ethics

Major Principles of Medical Ethics

Beneficence = fraternity

Justice = equality

Self determination (autonomy) = liberty

3. *Perspective of Medical Ethics*

The Hippocratic oath

The Declaration of Helsinki

The WHO Declaration of Geneva

International code of Medical Ethics (1993)

Medical Council of India Code of Ethics

4. *Ethics of the Individual*

The patient as a person

- The Right to be respected
 - Truth and Confidentiality
 - The autonomy of decision
 - The concept of disease, health and healing
 - The Right to health
 - Ethics of Behaviour modification
 - The Physician – Patient relationship
 - Organ donation
5. *The Ethics of Human life*
- What is human life
 - Criteria for distinguishing the human and the non-human
 - Reasons for respecting human life
 - The beginning of human life
 - Conception, contraception
 - Abortion
 - Prenatal sex-determination
 - In vitro fertilization (IVF), Artificial Insemination by Husband (AIH)
 - Artificial Insemination by Donor (AID),
 - Surrogate motherhood, Semen Intrafallopian Transfer (SIFT),
 - Gamete Intrafallopian Transfer (GIFT), Zygote Intrafallopian Transfer (ZIFT),
 - Genetic Engineering
6. *The Family and Society in Medical Ethics*
- The Ethics of human sexuality
 - Family Planning perspectives
 - Prolongation of life
 - Advanced life directives – The Living Will
 - Euthanasia
 - Cancer and Terminal Care
7. *Profession Ethics*
- Code of conduct
 - Contract and confidentiality
 - Charging of fees, Fee-splitting
 - Prescription of drugs
 - Over-investigating the patient
 - Low – Cost drugs, vitamins and tonics
 - Allocation of resources in health cares
 - Malpractice and Negligence
8. *Research Ethics*
- Animal and experimental research / humanness
 - Human experimentation
 - Human volunteer research – Informed Consent
 - Drug trials

9. *Ethical workshop of cases*
 - Gathering all scientific factors
 - Gathering all human factors
 - Gathering all value factors
 - Identifying areas of value – conflict, Setting of priorities,
 - Working out criteria towards decisions

Recommended Reading

Francis C.M., **Medical Ethics**, 1 Ed, 1993, Jaypee Brothers, New Delhi, p 189