



YENEPOYA

(DEEMED TO BE UNIVERSITY)

Recognized under Sec 3(A) of the UGC Act 1956

Accredited by NAAC with 'A' Grade

YENEPOYA (DEEMED TO BE UNIVERSITY)

Deralakatte, Mangaluru -575018

REGULATIONS AND CURRICULUM GOVERNING

FELLOWSHIP IN ONCO PATHOLOGY

(CURRICULUM - EFFECTIVE FROM 2019-20)

ATTESTED

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NOTIFICATION – 35-ACM/20/2019 dtd.27.05.2019

Sub: Proposal to start Fellowship in Oncopathology

Ref: Resolution of the Academic Council at its 35th meeting held on
24.05.2019, vide Agenda -20

The Academic Council at its 35th meeting held on 24.05.2019 & subsequently the Board of Management at its 46th meeting have resolved to approve the proposal for starting of Fellowship in Oncopathology under Yenepoya (Deemed to be University).

This notification is issued for implementation with effect from the academic year 2019-20.


REGISTRAR
mj 6/6

To:

The Principal - YMC

Copy to:

1. Professor & HoD, Department of Pathology
2. Dr. Siddhartha Biswas, Professor of Oncology
3. Dr. Jalaluddin Akbar K.C, Associate Professor & I/c HoD of Oncology
4. File copy

11/6/2019

Ref: No. Y/REG/ACA/39-ACM/2020

09.09.2020

NOTIFICATION – 39-ACM/03/2020 dtd. 09.09.2020

Sub: Modification and change of nomenclature of fellowship programme from
Oncopathology to Surgical Oncopathology

Ref: Resolution of the Academic Council at its 39th meeting held on 27.08.2020
vide agenda - 5

The Academic Council at its 39th meeting held on 27.08.2020 & subsequently the Board of Management at its 50th meeting held on 28.08.2020 have resolved to approve the proposal for modification and change of nomenclature of fellowship programme from Oncopathology to Surgical Oncopathology.

This notification is issued for implementation with effect from the academic year 2020-2021.


REGISTRAR
mj

To:

The Principal - YMC

Copy to:

1. Controller of Examinations
2. Professor & HoD, Department of Oncology
3. Professor & HoD, Department of Pathology
4. File copy

FELLOWSHIP IN SURGICAL ONCOPATHOLOGY

- 1. Aim and Objectives:** The aim of the fellowship is to provide comprehensive, multidisciplinary training to individuals who are committed to a career in Surgical Oncopathology.

Objectives:- The fellowship course will enable the students to:

- a)** Use the latest technology used in diagnostic pathology and research.
- b)** Critically analyze clinical findings and correlate with pathological findings.
- c)** Acquire additional diagnostic skill by participating in the multidisciplinary discussion with various clinical departments.
- d)** Develop expertise to handle the full range of oncopathological problems encountered in a tertiary oncology practice.
- e)** Acquire basic research skills.
- f)** Understand cancer biology.
- g)** Diagnose rare cancer cases using special stains, IHC, Cytogenetic, molecular biology.
- h)** Do routine, ultra sound guided and CT guided FNAC and cell block study.
- i)** Apply Knowledge of clinical implication in pathological diagnosis.
- j)** Understand fundamentals of principles of radiation oncology, medical oncology, all solid tumor pathology, diagnostic radiology, genetics and medical research
- k)** Practice effectively in an academic, tertiary care setting and to participate in medical education and translational research.

Curriculum including syllabus/course contents

❖ Syllabus for fellowship in Oncopathology:

I. General Topics in Oncopathology

1. Introduction to training programme.
2. Overview of oncological practice.
3. General principles in practice of oncopathology.
4. Quality assurance in oncopathology.
5. Laboratory safety.
6. Medico legal problems.
7. Cell and tissue staining methods in oncopathology.
8. Immunohistochemical and immunocytochemical techniques.
8. FISH
9. Molecular diagnostic techniques.
10. Role of flow cytometry in oncopathology.
11. Automation in oncopathology.
12. Genomics and proteomics.
13. Carcinogenesis and its molecular basis.
14. Cancer cytogenetics.
15. Tumour immunology.
16. Tumour markers in cancer diagnosis.
17. Pathology of treatment related changes.
18. Epidemiology and role of Registries (PBCR & HCR) in oncopathology.
19. Early detection methods and screening programmes.

20. Multidisciplinary approach to the diagnosis and management of cancer.
21. Guidelines to establish an oncopathology laboratory set up.
22. Telepathology.
23. Training in cancer research methodology.
24. Training in teaching skills.
25. Differential diagnosis of metastatic tumours.

II. Surgical Pathology

1. Grossing techniques in surgical pathology.
2. Synoptic pathology reporting.
3. Museum techniques.
4. Frozen section diagnosis in oncopathology.
5. Immunohistochemistry as a tool in oncopathology.
6. Automation in surgical pathology.
7. pTNM staging of Tumours and CAP protocol.
8. Surgical Pathology of the following tumours:
 - a. Gynecological neoplasia.
 - b. Neoplasia of breast.
 - c. Head and neck tumours including oral, Pharyngeal, salivary, thyroid and parathyroid neoplasia.
 - d. Bone tumours.
 - e. Soft tissue tumours.
 - f. Lymphoid neoplasia.
 - g. Gastrointestinal tumours.

- h. Adrenal tumours and tumours of paraganglia.
- i. Hepatobiliary Neoplasia.
- k. Neoplasia Urinary and Male Genital tract.
- l. CNS tumours.
- m. Tumours of Eye, Ocular adnexae and Ear.
- n. Skin tumours.
- o. Tumours of Respiratory tract.
- p. Tumours of Mediastinum.
- q. Tumours of Peritoneum, retroperitoneum and related structures.

III. Cytopathology

1. Introduction to training programmes in cytopathology
2. Overview of cytological practice in KMIO.
3. Technique of FNA cytology including its applications.
4. Imaging methods- CT & US guided FNA cytology.
5. Collection, Preparations and fixation of samples in routine cytology.
6. Staining principles, preparation of reagents and techniques-Pap, MGG and Special Stains.
7. Preparation of cell blocks.
8. Immunocytochemistry.
9. Cytology of body fluids, their processing and submission, including CSF.
10. Preparation and submission of GI & respiratory samples.
11. Collection and submission of Gynaec smears, FNA of POD mass, parametrial FNA.
12. Role of colonoscopy in Gynaec oncology.
13. Terminology and evaluation of Pap smears (TBS)

14. Liquid based techniques in cytology.
15. Methods of detection of HPV in Gynae cytology.
16. Systemic cytopathology of the following tumours
 - a. Gynecological neoplasia
 - b. Neoplasia of breast.
 - c. Head and neck tumours including oral, Pharyngeal, salivary, thyroid and parathyroid neoplasia.
 - d. Bone tumours.
 - e. Soft tissue tumours.
 - f. Lymphoid neoplasia.
 - g. Gastrointestinal tumours.
 - h. Adrenal tumours and tumours of paraganglia.
 - i. Hepatobiliary Neoplasia.
 - j. Pancreatic Neoplasia.
 - k. Tumours of Urinary and Male Genital tract.
 - l. CNS tumours.
 - m. Tumours of Eye, Ocular adnexae and Ear.
 - n. Skin tumours.
 - o. Tumours of Respiratory tract.
 - p. Tumours of the Mediastinum.
 - q. Tumours of Peritoneum, retroperitoneum and related structures.
17. Automation in cytopathology.
18. Fine tuning in cytology reporting including integration of clinical and other diagnostic data.
19. Diagnostic dilemmas in cytology practice.

20. Data management, archiving in cytology laboratory, cost accounting and financial management.
21. Quality assurance measures in cytology.
22. Evaluation of cytopathology training programme.

IV. Haemato Oncology

1. Interpretation of haemogram using automated haematology analyzer
2. Preparation of Peripheral smear, examination and interpretation.
3. Bone marrow aspiration and biopsy procedure using Jamshidi needle.
 - a) Procuring aspirate for various types of smears.
 - b) For other ancillary investigations like flow cytometry, cytogenetics and other molecular tests as and when needed.
 - c) Cytochemistry- Preparation of stains, procedure and interpretation including MPO, PAS, Sudan, Black, NSE, Oil Red O. Acid Phosphatase, TRAP and LAP
 - d) Bone marrow biopsy- Processing of biopsy including decalcification, Interpretation and IHC as and when needed.
4. Flow Cytometry in evaluation of new cases-
 - a) Collection of peripheral blood/Bone marrow samples.
 - b) Processing, acquisition and interpretation of data.
5. Automation in Haematology.
6. Characterization of acute leukemias- both acute lymphoid and myeloid Malignancies.
7. Characterization and classification of chronic leukemia - both lymphoproliferative and myeloproliferative disorders.
8. Diagnosis and classification of myelodysplastic disorders.
9. Pathology of plasma cell dyscrasias.
10. Staging of lymphomas with bone marrow evaluation as a tool.

11. Evaluation of Bone marrow in Metastatic diseases both in adults and children- For diagnosis and staging.
12. Investigation of cytopenias in adults and children.
13. Evaluation of non-neoplastic hematological disorders like aplasia, ITP and storage disorders.
14. Interpretation of peripheral smear periodically in follow up of treated cases of various haematological disorders.
15. Surveillance of marrows in various haematological disorders-to evaluate remission in treated cases

V. Cytogenetics

1. Human genetics, an introduction to the subject.
2. Terminology, classification and nomenclature of human Chromosomes.
3. Methods for Karyotypic analysis
 - a) Culture of bone marrow, peripheral blood lymphocytes, solid tumours.
 - b) Direct preparations from tumour material
4. Characterisation of human chromosomes by G-banding techniques.
5. Karyotyping and analysis of chromosomal abnormalities.
6. Common chromosomal abnormalities in cancer and their genetic basis.

VI. Blood bank (Immunohaematology & Transfusion Medicine)

1. Immunologic and genetic principles in transfusion medicine.
2. Serologic principles in transfusion medicine.
3. Blood groups.
4. General laboratory methods in Blood Bank(Red cell typing, antibody detection etc)
5. Blood donation, collection, storage and component preparation.
6. Quality Assurance measures.
7. General safety principles.
8. Blood utilization management

❖ **Fundamental Components of the Fellowship:**

- a) The fellows must participate in the evaluation of a minimum of 2000 oncology cases,
- b) Participation in a minimum of 1000 guided FNAC.
- c) Intensive exposure to the interdisciplinary management of oncologic cases.
- d) Participation in the development and implementation of Oncologic research.
- e) Maintain a log book with entry of day to day activities.
- f) Students will also attend guest lecturers organized by department and other concerned departments of the institute.
- g) Outreach health camps and peripheral centers.
- h) Short study in the form of at least one publication in any oncology journal
- i) Involvement in community based intervention programme for cancer.

Teaching Learning Modalities

Sr. No	Activity	Number in a month
1	Case presentation and discussions (Including discussion by External faculties)	4
2.	Inter disciplinary seminars	2
3	Journal clubs	4
4.	Gross Seminar	1
6.	Lecture by faculty by experts in the field of basic sciences, preventive oncology, tumor registry, molecular biology & genetics.	2
7.	Group discussion on current updates	4
8.	Demonstration:- Hands on training on routine and newer oncology procedures	1
9.	Hospital tumor board	1

Details of Postings during 12 months

Histopathology –6 months

Cytopathology - 3 months

**Clinical posting –2 months(Surgical Oncology, Medical Oncology, Radiology,
KSHEMA(Radiation oncology and Cytogenetics)**

Periphery- 15days (TMH / KMIO)

YRC 15 days (2" month)

EVALUATION:

- 1) Internal assessment of the candidates by the faculty (100 marks). This will be done on continual basis with respect to the overall objectives of the course, and specifically with respect to their diagnostic skills, time spent in seminars, journal club, case presentation, log book & tumour board presentations.
- 2) University examination At the end of the course conducted by both internal & external examiners.

Consists of theory, practical and Viva:

Total marks **500**
(Theory+ Practicals+ Viva) **(200 + 250 + 50)**

(I) Theory:2 papers

2 Theory papers: $100 \times 2 = 200$ marks

Paper I: General Oncopathology & Recent Advances in oncopathology

Paper II: Surgical Oncopathology & Cytopathology

Duration: 3 Hours each.

Marks for each paper: 100

Type of questions:

1 Essay type question for 20 marks 20

8 Short questions for 10 (a+b+c+d) marks each 80

Total • 100

(II) Practical and Oral Exam:

There should not be more than 3 candidates per day.

There will be 1 external examiner from a reputed oncology center and 1 internal

examiner.

(i) Practical marks

Surgical Pathology 150

Cytopathology 100

(ii) Oral Examination marks

Viva 50

I. EXAMINERS

- (a) All the Post Graduate Examiners shall be recognized Post Graduate Teachers holding recognized Post Graduate qualifications in the subject concerned from a reputed oncology center.
- (b) For all Post Graduate Examinations, the minimum number of Examiners shall be two, out of which at least one (50%) shall be External Examiner, who shall be invited from other recognized universities.

II. NUMBER OF EXAMINATIONS

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

III. MAINTAINANCE OF LOG BOOK:

Log book (Performance record book):

Maintaining Log book (recording the work done during the course) is mandatory. The log book should be reviewed and assessed by the faculty of the department and shall be made available at the time of practical examination for review by examiners.

IV. Eligibility to appear for University examination

1. 80% attendance

2. 40% in internal assessment
3. Log Book

V. Criteria for pass:

Qualifying for a pass 50% Marks

Theory	Practical and Viva
200 (Max)	300 (Max)
100 (Min)	150 (Min)
50% Overall	50% in practical

A student shall secure not less than 50% marks in each head of passing, which shall include;

1. Theory,
2. Practical including clinical and viva voce examination.