



**ODISHA UNIVERSITY OF HEALTH SCIENCES,  
BHUBANESWAR**



**PG Curriculum  
M.Ch. Surgical Oncology**

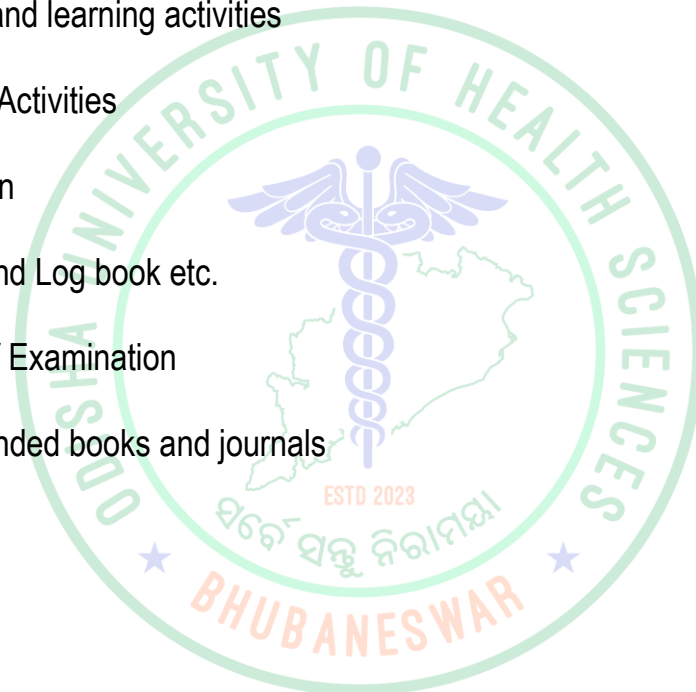
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# M.Ch. Surgical Oncology PG Curriculum

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## 1. GOAL OBJECTIVES, KNOWLEDGE AND SKILL

### GOAL

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

- (i) Who shall recognise 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 post doctorate MCh 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 sufficient understanding of the basic sciences relevant to the concerned specialty.
- iv) Identify social, economic, environmental, biological and emotional determinants of health in a given 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 on the basis of 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 and 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 MCh 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 MCH CURRICULUM

The major components of the MCh curriculum shall be:

- Theoretical knowledge
- Practical/clinical Skills
- Attitudes, including communication
- Training in research methodology.

Source: Medical Council of India, Regulations on MCh medical education, 2000.

## **2. Course content (Syllabus in detail)**

### **Goals**

The surgical oncologist differs from his colleagues in general surgery in several respects with rapid advances in surgery, radiation, medical oncology, and new disciplines such as immunotherapy and hyperthermia, the surgical oncologist is in a critical position to help integrate these approaches to the management of an individual patient. It is likewise critical that the surgical oncologists have special training that makes it possible for him or her to understand these divergent fields and appreciate their potential roles in treatment. The surgical oncologist should take the responsibility for training new residents and educating the general surgical staff of their hospitals and medical schools to better define the concepts and indications of advances in cancer diagnosis and management.

The surgical oncologist should be specially trained to perform unique and complicated surgical procedures, such as resection of soft tissue sarcomas and total pelvic exenteration, not normally performed by the community-based general surgeon. It is expected that general surgeons will perform most of the standard cancer resections, with more complex and less frequently performed procedures being handled by specialists in surgical oncology

The surgical oncologist should be involved with clinical and basic science research activities in oncology and should help to organize clinical protocols for the study of cancer patients. Management of each patient's care should be coordinated with medical oncologists, radiation therapists, and other disciplines in the practice of medicine as needed, in order to establish the highest possible standards of care for treatment of cancer. Finally, surgical oncologists must lead fellow surgeons who remain the

primary treatment source for most patients with malignant disease. Such leadership includes establishment of protocols for research, convincing colleagues that patients should be entered into clinical trials and other studies, helping to explain the results of such trials, and being critical of ineffective or poorly conceived studies. Thus the surgical oncologist will both direct and stimulate better investigation and treatment, and also provide a critical viewpoint as new and innovative management approaches come to the clinical arena.

### **Cancer Prevention**

Medical oncologists-because of their knowledge of neoplastic disease and because of their recognition of social, occupational, nutritional, and sexual practices that contribute to neoplasia-have a special obligation among physicians to educate the general public, including other professionals with a less intense interest in cancer prevention Smoking is the principal correctable cancer-inducing activity. Medical oncologists should counsel patients and families about good nutrition and healthy sexual practices. This is entirely appropriate for conditions known to be associated with a genetic predisposition, but not for all types of cancer. It is usually the medical oncologist's responsibility to assess the risk for a particular disease and to conduct the necessary surveillance.

### **Clinical 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 breast preservation, limb salvage, bladder conservation, and avoidance of abdomino-perineal resection are major dividends in the treatment 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 medical oncologic management arose from some investigative effort. In many instances, these were one-armed studies that were so successful they became adopted.

Every oncologist's office should be a research station. Every oncologist during his or her training be exposed to, and almost always be a participant in, clinical research. Virtually no regimen or treatment for any tumor is entirely satisfactory. 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 medical oncology so that more oncologists and patients would participate than at present. The technology exists in medical informatics for community oncologists to ally themselves with their alma mater or other academic centers to participate in diagnostic, preventive, and therapeutic research trials using the computer, e-mail, and fax as expedient tools. As a part of the commitment to medical oncology, a medical oncologist 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 a candidate completes the course. The Objectives may be considered under the subheadings

Knowledge

Skills

Human values, Ethical practice and Communication abilities

**Knowledge**

- Describe etiology, patho-physiology, principles of diagnosis and management malignancies including emergencies, in adults and children.
- Demonstrate understanding of basic sciences relevant to this specialty
- Identify socio-economic, environmental and emotional determinants in a given case, and take them into account for planning therapeutic measures
- Describe indications and methods for blood transfusion and pheresis
- 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 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 and order relevant tests and interpret them to come to a reasonable diagnosis & staging of disease
- Perform common procedures relevant to the specialty
- Undertake complete monitoring of the patient

### **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 Contents**

#### **Knowledge**

#### **1. Cancer Biology**

Molecular Biology

Cell Proliferation, Differentiation, and Apoptosis

Growth Factor Signal Transduction in Cancer

Oncogenes

Tumor Suppressor Gene Defects in

Recurring Chromosome Rearrangements in Human

Cancer

Biochemistry of Cancer Invasion and Metastases  
Tumor Angiogenesis

## **2. Tumor Immunology**

Tumor Immunology

## **3. Cancer Etiology**

Genetic Predisposition to Cancer  
Chemical Carcinogenesis  
Hormones and the Etiology of Cancer  
Ionizing Radiation  
Ultraviolet Radiation Carcinogenesis  
Physical Carcinogenesis  
Trauma and Inflammation  
Tumor Viruses  
Herpesviruses  
Papillomaviruses and Cervical Neoplasia  
Hepatitis Viruses  
Parasites

## **4. Cancer Epidemiology**

Cancer Epidemiology

## **5. Theory and Practice of Clinical Trials**

Theory and Practice of Clinical Trials

## **6. Cancer Prevention**

Prevention of Tobacco-Related Cancers  
Nutrition in the Etiology and Prevention of Cancer  
Chemo-prevention of Cancer  
Cytokinetics  
Drug Resistance and its Clinical Circumvention  
Principles of Dose, Schedule, and Combination  
Chemotherapy  
Regional Chemotherapy  
Animal Models in Developmental Therapeutics  
In Vitro and In Vivo Predictive Tests  
Pharmacology  
Toxicology by Organ System

## **7. Chemotherapeutic Agents**

Folate Antagonists  
Pyrimidine and Purine Antimetabolites  
Alkylating Agents and Platinum Antitumor compounds  
Anthracyclines and DNA Intercalators/  
Epidodophyllotoxins/DNA Topoisomerases  
Microtubule-Targeting Anticancer Drugs Derived from Plants and Microbes: Vinca

Alkaloids, Taxanes, and Epothilones, Asparaginase

## **8. Principles of Endocrine Therapy**

Steroid Hormone Binding and Hormone Receptors

Hypothalamic and Other Peptide Hormones

Corticosteroids

Estrogens and Antiestrogens

Clinical Use of Aromatase Inhibitors in Breast Carcinoma

Progestins

Androgen Deprivation Strategies in the Treatment of Advanced Prostate Cancer

## **9. Cancer Screening and Early Detection**

Cancer Screening and Early Detection

## **10. Principles of Cancer Pathology**

Principles of Cancer Pathology

## **11. Principles of Imaging**

- a. Imaging Cancer of Unknown Primary Site
- b. Imaging Neoplasms of the Head and Neck and Central Nervous System
- c. Imaging Neoplasms of the Thorax
- d. Imaging Neoplasms of the Abdomen and Pelvis
- e. Cross-Sectional Imaging of Musculoskeletal Neoplasms
- f. Imaging the Breast
- g. Ultrasound in Cancer Medicine
- h. Radionuclide Imaging in Cancer Medicine
- i. Perspectives in Imaging  
Interventional Radiology for the Cancer Patient

## **12. Principles of Surgical Oncology**

Principles of Surgical Oncology

Vascular Access in Cancer Patients

## **13. Principles of Radiation Oncology**

Physical and Biologic Basis of Radiation Oncology

Principles of Hyperthermia

Photodynamic Therapy of Cancer

## **14. Principles of Medical Oncology**

Principles of Medical Oncology

## **15. Principles of Biotherapeutics**

Immunostimulants

Active Specific Immunotherapy with Vaccines

Interferons

Cytokines: Biology and Applications in Cancer Medicine

Hematopoietic Growth Factors



Monoclonal Serotherapy

Cancer Gene Therapy

**16. Principles of Bone Marrow Transplantation**

Autologous Bone Marrow and Stem Cell Transplantation

Transplantation of Allogeneic Hematopoietic Cells for the Treatment of Malignancies

**Principles of Psycho-Oncology**

**Principles of Oncology Nursing**

Principles of Oncology Nursing

**Principles of Cancer Rehabilitation Medicine**

Principles of Cancer Rehabilitation Medicine

**Principles of Multidisciplinary Management**

Principles of Multidisciplinary Management Palliative Care

**Neoplasms of the Central Nervous System**

Neoplasms of the Central Nervous System

**Neoplasms of the Eye**

Neoplasms of the Eye

**Neoplasms of the Endocrine Glands**

Pituitary Neoplasms

Neoplasms of the Thyroid

Neoplasms of the Adrenal Cortex

Neoplasms of the Neuroendocrine System and

Neoplasms of the Gastroenteropancreatic

Endocrine System

**Neoplasms of the Head and Neck**

Head and Neck Cancer

Odontogenic Tumors

**Neoplasms of the Thorax**

Cancer of the Lung

Malignant Mesothelioma

Thymomas and Thymic Tumors

**Neoplasms of the Female Reproductive Organs**

Neoplasms of the Vulva and Vagina

Neoplasms of the Cervix

Endometrial Cancer

Neoplasms of the Fallopian Tube

Ovarian Cancer

Gestational Trophoblastic Disease

Gynecologic

**Neoplasms of the Breast**

Neoplasms of the Breast

**Neoplasms of the Skin**

Neoplasms of the Skin

**Malignant Melanoma**

Malignant Melanoma

**Neoplasms of the Bone and Soft Tissue**

Bone Tumors & Sarcomas of Non-osseous Tissues

**Neoplasms of the Hematopoietic System**

Myelodysplastic Syndrome

Acute Myeloid Leukemia in Adults

Chronic Myeloid Leukemia

Tumors of the Heart and Great Vessels

Primary Germ Cell Tumors of the Thorax

Metastatic Tumors in the Thorax

Hairy-Cell Leukemia

Hodgkin's Disease

Non-Hodgkin's Lymphomas

Mycosis Fungoides and the Sézary Syndrome

Plasma Cell Tumors

Mast Cell Leukemia and Other Mast Cell Neoplasms

Polycythemia Vera and Essential Thrombocythemia

**Neoplasms of the Alimentary Canal**

Neoplasms of the Esophagus

Neoplasms of the Stomach

Primary Neoplasms of the Liver

Treatment of Liver Metastases

The Gallbladder

Diagnosis and Management of Biliary Tract Cancer

Neoplasms of the Ampulla of Vater

Neoplasms of the Exocrine Pancreas

Neoplasms of the Small Intestine, Vermiform

Appendix, and Peritoneum

Adenocarcinoma of the Colon and Rectum

Neoplasms of the Anus

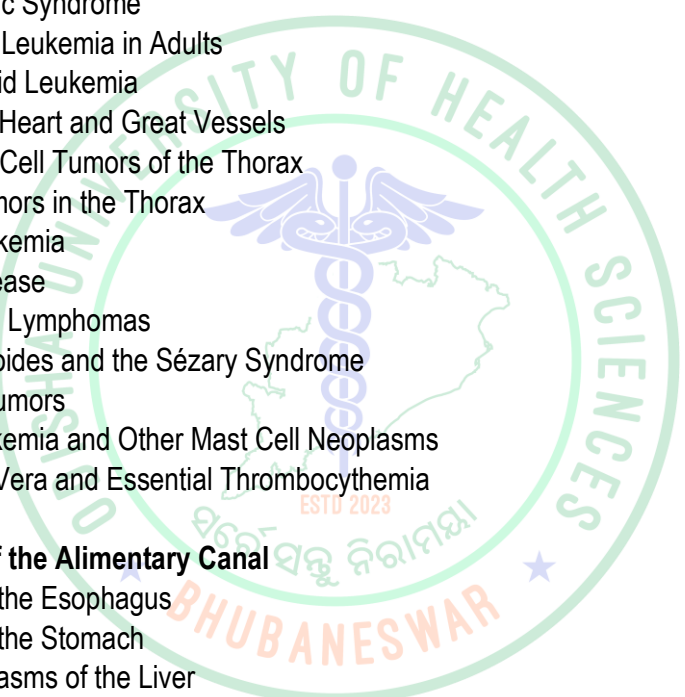
**Neoplasms of the Genitourinary Tract**

Renal Cell Carcinoma

Neoplasms of the Renal Pelvis and Ureter

Bladder Cancer

Neoplasms of the Prostate



Neoplasms of the Penis  
Neoplasms of the Testis  
**Neoplasms in AIDS**

Neoplasms in Acquired Immunodeficiency Syndrome  
**Neoplasms of Unknown Primary Site**  
Neoplasms of Unknown Primary Site

### **Neoplasms in Children**

- a. Principles and Practice of Pediatric Oncology
- b. Incidence, Origins, Epidemiology
- c. Principles of Pediatric Radiation Oncology
- d. Late Effects of Treatment of Cancer in Children and Adolescents
- a. Childhood Acute Lymphoblastic Leukemia
- b. Pediatric Acute Myeloid Leukemia
- c. Hodgkin's Disease in Children and Adolescents
- d. Non-Hodgkin's Lymphoma in Children
- e. Langerhans Cell Histiocytosis
- a. Hepatic Tumors
- b. Renal Tumors of Childhood
- c. Germ Cell Tumors:
- d. Neuroblastoma
- e. Soft Tissue Sarcomas of Childhood

### **Complications of Cancer and its Treatment<sup>23</sup>**

Management of Cancer Pain  
Anorexia and Cachexia  
Antiemetic Therapy  
Neurologic Complications  
Dermatologic Complications of  
Cancer Chemotherapy  
Skeletal Complications  
Hematologic Complications and  
Blood Bank Support  
Coagulopathic Complications of Cancer  
Urologic Complications  
Cardiac Complications  
Respiratory Complications  
Liver Function and Hepatotoxicity in Cancer  
Gastrointestinal Complications  
Oral Complications  
Gonadal Complications  
Endocrine Complications

Secondary Cancers: Incidence,  
Risk Factors, and Management,

### **Infections in Patients with Cancer**

Infections in Patients with Cancer

### **Oncologic Emergencies**

Oncologic Emergencies

### **Operative Surgery**

The trainee should have experience in the following Surgical Procedures:

#### **Breast Unit:**

- Modified radical mastectomy
- Radical Mastectomy
- Breast conservation surgery- wide local excision + axillary clearance
- Lumpectomy
- Breast reconstruction

#### **Gastrointestinal unit**

- Total radical gastrectomy + reconstruction
- Partial Radical gastrectomy + reconstruction - lower & upper
- Duodenal local excision + reconstruction
- Whipples pancreatic duodenectomy
- Total pancreatoco duodenectomy
- Distal pancreatectomy
- Splenectomy
- Segmental small bowel resection with reconstruction
- Right & left hemicolectomy
- Total colectomy
- Extended colectomy
- APR with TME
- Anterior resection
- Hartmann's procedure
- Pelvic exenteration - anterior/posterior/total
- Wide local excision of rectal / anal tumors
- Colostomy
- Ileostomy
- Mesentric tumors excision
- Retro peritoneal tumor excision
- Right & left hepatectomy
- Extended right & left hepatectomy
- Segmentectomy
- Non Anatomical resection

- Excision of extra biliary tumors with reconstruction

-

### **Genitourinary Unit**

- Radical Nephrectomy
- Radical cystectomy with reconstruction
- Partial cystectomy
- Radical Prostatectomy
- Pelvic lymphadenectomy
- Ureteric Tumor excision with reconstruction
- RPLND
- Radical/High Orchiectomy
- Hemi scrotectomy
- Penectomy-Partial/Total
- Inguinal/Ilio-Inguinal lymphadenectomy

### **Thoracic Oncology Unit**

- Pneumonectomy (R) & (L.)
- Lobectomy
- Segmental resection
- Non-Anatomical resection
- Hilar lymphadenectomy
- Mediastinal Tumors resection
- Transhiatal Esophagectomy
- Ivor-lewis transthoracic Esophagectomy
- Mckeowns three stage Esophagectomy
- Total Esophagectomy with three field lymphadenectomy

### **Bone & Soft tissue Oncology**

- Amputations/Disarticulation
  - Forequarter
  - Shoulder Disarticulation
  - Above and below elbow Disarticulation
  - Above and below elbow Amputation
  - Ray Amputation
  - Hemipelvectomy
  - Hind quarter Amputation
  - Extended Hemipelvectomy
  - Above/Below Knee Amputation
  - Hip disarticulation
  - Symes Amputation
  - Transmetatarsal Amputation
- Limb conserving procedures

- Wide excision with reconstruction with or without Lymphadenectomy of soft tissue and skin
- tumors
- Compartmental excision with reconstruction

### **Head and Neck Oncology**

- Tracheostomy
- Neck Dissections
- Radical Neck dissection
- Modified neck dissections
- Selective neck dissections
- Hemi mandibulectomy
- Marginal mandibulectomy
- Alveolectomy
- Total Glossectomy
- Hemi glossectomy
- Composite resections
- Partial Maxillectomy
- Total Maxillectomy
- Orbital tumors
- Enucleation
- Exenteration
- Skull Base surgeries
- Wide field laryngectomy
- Conservative laryngectomy
- Laryngopharyngo Oesophagectomy
- Trchio Esophagal Prosthesis (TEP)
- Superficial parotidectomy
- Radical parotidectomy
- Excision of submandibular gland tumors
- Hemi thyroidectomy
- Total thyroidectomy
- Wide excision & reconstruction of scalp tumor & other skin tumor of Head and Neck

### **Gynec Oncology**

- Cone excision/LEEP
- Radical hysterectomy for ca cervix
- Staging laparotomy for ca ovary
- Anterior/Total exenteration

### **Endoscopic & Laparoscopic procedures**

- Eg TURPT, TURBT, Polypectomy
- Diagnostic & therapeutic Laparoscopic procedures

### **3. Teaching & Learning Activities:**

### Procedures:

- 1<sup>st</sup> Year student : Basic sciences Endoscopic Procedures  
a) Diagnostic  
b) Therapeutic  
Imaging Techniques  
a) Conventional Radiology  
b) Nuclear Medicine  
c) CT Scan/MRI  
d) Mammography/Mammotome  
e) Biopsies (Punch/Frucut)  
f) Node Biopsies  
g) Breast-Mastectomy BCS  
h) Surface Surgery (Ca Penis)  
i) Pall Procedure Orchidectomy  
GJ/FJ/Colostomy Tracheostomy  
Observing & Assisting Major Surgical procedures  
& performing minor surgical procedures independently
- 2<sup>nd</sup> Year student : Performing major surgeries with assistances  
a) Breast Reconstruction  
b) H&N-Resection & Reconstruction  
c) GI- Gastroctomy  
Hemicolectomy  
APR  
d) GU-Nephrectomy  
e) BST-STs Excision
- 3<sup>rd</sup> Year student : Operating major surgeries independently  
under supervision  
a) Breast Oncoplasty  
b) H&N-Bigger Resection  
Larynx, Maxilla  
c) GI-Trans hiatal, Transthoracic  
d) Radical Cholecystectomy  
e) Whipples procedure  
f) LAR, Ultra LAR  
g) Exenteration  
h) Hepatectomy  
i) Cystectomy

### Clinical Rounds

Clinical rounds can be service or Teaching rounds

**Service rounds:** Students should do every day care of the patients Newly admitted patients should be worked up & presented to the seniors during the morning rounds.

**Teaching Rounds:** every unit should have grand rounds once a week for teaching purpose.

1 year students are expected to present the case. All faculty members are supposed to be present on rounds & impart positive discussion. Entries should be made in logbook

**PERIPHERAL ROTATION DURATION OF M.Ch RESIDENTS;  
Department of Surgical Oncology**

Radiation Oncology	1 Week
Medical Oncology	1 Week
Pathology	1 Week
Radiology	1 Week
Gynaecological Oncology	3 months
H&N Surgery	3 months
Pain Palliative Care	1 Week

**Attendance**

Every student 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/nursing home while studying the course. Every candidate is required to attend minimum 80% of the training during each academic year.

**4. Academic Activities:**

**(i) 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 weightge 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.

**(ii) Multi-Disciplinary Seminars:**

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

**(iii) Clinico Pathological Conference:**

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



**(iv) Interdepartmental Meeting:**

It is strongly recommended once a week especially with dept. of Radio-diagnosis, dept of Pathology. Either case presentations or a topic of common interest can be actively discussed.

**(v) Community Work/Field Visits:**

They are recommended once a month especially on Saturday They should undertake awareness programs regarding early detection of malignancies

**Others:**

Lectures-Lectures are recommended for different topics as

- Basic Sciences
- Bio-statistics & Research tools
- Clinical Trials

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

A student should be actively involved in teaching nursing students, undergraduate and post graduate students.

MCh 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

**5. Dissertation**

1. Every candidate pursuing MCh degree course is required to carry on The selected research project under the guidance of a recopied out graduate teacher. The results of such a work shall be submitted in the form of a dissertation.

2 The dissertation is aimed to train a post graduate student in research methods and techniques It includes identification of a problem, formulation of a hypothesis and review of literature, getting acquainted with recent advances, designing of study, collection of data, critical analysis comparison of results and drawing conclusions.

3. Every candidate shall submit to the Registrar (Academic) of the Umperity in the prescribed proforma, a synopsis containing particulars of proposed dissertation work within six months from the date of commencement of the course on or before the dates notified by the University. The synopsis shall be sent through the proper channel.

4. Such synopsis will be reviewed and the dissertation topic will be registered by the University No change in the dissertation topic or guide shall be made without prior approval of the University.

5. The dissertation should be written under the following headings

- i. Introduction

- II. Aims or Objectives of study
- III. Review of Literature
- IV. Material and Methods
- V. Results
- VI. Discussion
- VII. Conclusion
- VIII. Summary
- IX. References
- X. Tables
- XI. Annexures

6. The written text of dissertation shall be not less than 50 pages and shall not exceed 150 pages excluding references, tables, questionnaires and other annexures It should be neatly typed in double line spacing on one side of paper (A4 size, 827" x 11.69") and bound properly. Spiral binding should be avoided. The dissertation shall be certified by the guide, head of the department and head of the Institution.

7. Four copies of dissertation thus prepared shall be submitted to the Registrar (Evaluation), six months before final examination on or before the dates notified by the University.

8. The dissertation shall be valued by examiners appointed by the University. Approval of dissertation work is an essential precondition for a candidate to appear in the University examination.

9. Guide: The academic qualification and teaching experience required for recognition by this University as a guide for dissertation work is as per National Medical Council of India Minimum Qualifications for Teachers in Medical Institutions Regulations, 2022 Teachers in a medical college/institution having a total of eight years teaching experience out of which at least five years teaching experience as Assistant Professor gained after obtaining M Ch/DNB degree shall be recognised as teachers.

A **Co-guide** may be included provided the work requires substantial contribution from a sister department or from another medical institution recognised for teaching/training by Medical Council of India. The co-guide shall be a recognised post graduate teacher.

**10. Change of guide:** In the event of a registered guide leaving the college for any reason or in the event of death of guide, guide may be changed with prior permission from the university.

## **6. Records and Log book etc.**

### **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, right calls, procedure and consultations done as MCH candidates These record books should be checked and assessed by faculty members imparting the training and certified by the head of the department.

Student diary should include following activities.

1. Cases seen on rounds-description of interesting cases and other miscellaneous topics discussed.
2. Out patient cases seen and details of interesting cases with follow up.
3. Procedures done on inpatients and outpatients and consultation done.
4. Undergraduate teaching done during the day with details.
5. Training programs attended - details of bedside clinics, basic sciences, subject and clinical seminars, Journal clubs, mortality meet and hospital conference.
6. Night duties- details of patients managed and emergencies, consultation, ward calls attended.
7. Details of study with topics covered during off-hours in library/home Periodicals and Journals reviewed with notes on interesting articles.

### **Research Training**

The candidate is introduced to the field of research in medical oncology both at the clinical and Lab level. The candidate is required to work on two projects. In addition at least two presentations/Publications at state /national/international level conferences/Journals.

### **Evaluation**

**Internal:** The candidate will be guided and judged as regards his/her abilities to provide competent care to his patients through various means like ward rounds, discussions held in OPD and weekly academic activities. Internal examination in the form of written examination will be held twice a year with an objective type of questionnaire.

### **7. Scheme of Examination**

There shall be four question papers, each of three hours duration. Each paper shall consist of 09 long essay questions each question carrying 10 marks and 5 short objective type questions each carrying 02 marks. Total marks for each paper will be 100. Questions on recent advances may be per cod in all papers. Details of distribution of topics for each paper will be as follows (as per course contents)

**Paper I:** Basic Sciences, includes Cancer Biology, Tumor Immunology, Cancer Etiology Pharmacology, Radiation Biology, Tumor Pathology

**Paper II:** Principles of Surgical Oncology, Management of Head & Neck, thorax, Gastrointestinal system.

**Paper III:** Genitourinary system, Gynecological cancer, Breast, Bone & Soft tissue, Endocrine tumors, Childhood cancers, Skin & Central nervous system

**Paper IV:** Cancer epidemiology, Prevention, psycho-oncology, Rehabilitation, societal Oncology

**Clinical Examination:** Marks 200

To elicit competence in clinical skills: one long case, two short cases and ward rounds

**Viva voce:** Marks=200

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, charts, gross specimens, Histo-pathology slides, X-rays, Ultrasound, CT scan images, etc, for interpretation Questions on use of instruments will be asked. It includes discussion on Research also.

Theory 4 papers (Distribution of chapters/Portions paper wise)  
Marks -400 (100X4)

Clinical/practical- I Long case 100 marks+ Short case (two cases)-100 marks = 200 marks  
Viva-Voce- 200 Marks

1 Equipment/Instrument/Charts -40 marks

2. Imaging -40 marks

3. Chemotherapy agents -40 marks

4. Pathology specimen -40 marks

5. Biomedical Research -40 marks

There should be 4 examiners 2 external (at least one from outside the State) and 2 internals. All should be surgical oncologists.

Maximum no. of candidates per day - Maximum 04.

Criteria for declaring as pass in University exam.

A candidate shall secure not less than 50% marks in each head which shall include (1) Theory, (2) Clinical and vive voce

## 8. Recommended Books & Journals

### Books for Reading

### Molecular Biology

1. Molecular Diagnosis of Cancer, COTTER FE
2. Molecular Biology for Oncologists YARNOLD. JR. et al
3. Cancer Chemotherapy Handbook, BAQUIRANI DELIA

4. The Lymphomas, CANELLOS, GP et al
5. Chemotherapy source book, PERRY, M.C
6. Leukemia, HENDERSON, ES et al
7. Cancer Medicine, HOLLAND, 1.F. et al.
8. Atlas of clinical Haematology, BEGEMANN
9. Text book of Malignant Haematology, Degos L. et al
10. Clinical Haematology, ROCHARD Lee et al
11. Clinical Oncology, ABELOFF et al
12. Important Advances in Oncology, DEVITA, V.T
13. Cancer Principles and Practice of Oncology. DEVITA, VT et al,
14. 14 Decision Making in Oncology Evidence Based Management, DJULBEGOVIĆ B& SULLIVAN
15. 15. AJCC Cancer Staging Manual (American Joint Committee on Cancer
16. Cancer Treatment, HALNANE K
17. Cancer Treatment, HASKEL
18. Oncology for Palliative Medicine, HOSKIN PETER & MAKING WENDY)
19. Regional Therapy of Advanced Cancer, RUBIN, JT
20. MAGRATH, I. The Non-Hodgkin's Lymphoma,
21. Comprehensive Text book of Oncology, Vol 1-2, MOSSA, AR
22. Oxford textbook of Oncology PECKHAM, M. et al I
23. A Multi-disciplinary Approach for physicians and students, RUBIN Clinical Oncology.
24. Atlas of Diagnostic oncology, SKARIN, AT
25. Basic Science of Oncology, TANNOCK, ET
26. Pediatric oncology, Philip LANSZOWSKY
27. Comprehensive text book of Thoracic Oncology, AISNER J. at al
28. Pediatric Surgical Oncology, ANDRASSY, RJ
29. Breast: Comprehensive management of Benign and Malignant Diseases, BLAND
30. Gleenn's Thoracic and Cardiovascular Surgery, Baue, A E et al
31. Surgery of Childhood Tumors, CARACHI, R. et al
32. Cancer of the Colon, Rectum and Anus, COHEN, A M
33. Atlas of Surgical oncology, DALY, J.M. & CADY, B
34. Cancer of the Prostate, DASS & CRAWFORD, ED.
35. Prostate Cancer, ERNSTOFF, M.S. et al
36. Bone Marrow Transplantation, FORMAN, S.J
37. Minimal Access Surgery in Oncology, GERAGHTY, J.G.et. al
38. Clinical Management of Bladder Cancer, HALL, RR 1999 (Acc. No. 3667)
39. Soft tissue tumours, HARMS D & SCHODT. D
40. Cancer Surgery, HARVEY, J.C. & BEATTIE, E.J
41. Testicular cancer investigation & management, HORWICH, A
42. Bone tumors: Diagnosis, treatment and Prognosis, HUVOS, ANDREW G
43. Reconstructive Plastic Surgery for Cancer-, KROLL, S. S
44. Bailey & Love's Short practice of Surgery, Manrl, C,Vf Russel R. C.G
45. Surgical Emergencies, MONSON, J. et al
46. Gastric Cancer, NISHI, M
47. Superficial Bladder Cancer, PAGANO.F. et al
48. Carcinoma of the Kidney Testis and rare Urologic Malignancies, PETROVICH,Z.et al
49. Breast Cancer, ROSES, D.F

50. Breast Cancer, SINGLRYSTY. D.E
51. Atlas of Esophageal Surgery, SKINNER D.B.
52. Surgery of the Breast Principles and Art, SPEAR.S.L. et al
53. Gastric Cancer, SUGIMI'JRAJT & SASAKI.M.
54. Colorectal Cancer, WILLIAMS N.S
55. Campbell's Urology, WALSHIL et al
56. Soft tissue, WEISS, SW & BROOKS, JS.J
57. Urological Oncology WAXMANJ .J WILLIAMS.
58. Prevention and Early Detection of Colorectal Cancer, YOUNG GP et al
59. Maingot's AbdoJniJ1al Operation, ZINNER)M.J

### **Anesthesiology**

1. Pharmacology and Physiology in Anesthetic Practice, STOELTING, R.K
2. Anaesthesiology Problem-oriented Patient Management, YAO, FSF

### **Head & Neck Oncology**

1. Essentials of Head & Neck Oncology, CLOSE LG
2. Head & Neck Cancer: A Multidisciplinary Approach, HARRISON L.B
3. Complications in Head & Neck surgery, OSSOFF.R.H.
4. An Atlas of Head & Neck surgery, LORE. J, M
5. Management of Head & Neck Cancer Multidisciplinary Approach MILLION. C.R
6. Colour atlas of Head & Neck surgery Face Skull & Neck, SHAH. J.P
7. Colour atlas of operative **tech**nology in Head and Neck Surgery, Parotid.
8. Soft tissue and reconstructive surgery, SHAH. J.P
9. Surgery for cancer of the larynx and related structures. SILVER E.E
10. Multimodality Therapy for Head and Neck Cancer, SNOKS, G.B
11. Comprehensive Management of Head and Neck Tumors, THAWLEY .S.E et al
12. Basal & Squamous Cell skin Cancer of the Head and Neck, Weber, R. G. et al

### **Oral Oncology**

1. Burket's oral medicine: diagnosis and treatment. LYNCH,M.A.
2. Malignant Tumors of the mouth, jaws and salivary glands LANGDONJ.1.D & HENK,J.M.
3. Cancer of the face and mouth pathology and management of Surgeons, MCGREGOR, I.A & MCGREGOR.F.M.
4. Oral Oncology,(Proceedings of the 3rds international congress on oral cancer." VARMA, A.K.

### **Gynecologic Oncology**

1. BEREKJ & HACKER W .F Practical Gynaecologic Oncology
2. Gynaecological Oncology Guide to Clinical Management, BLAKE PETER et al
- 3 Gynaecologic oncology (Fundamental principles & clinical practice) COPPLEGON, M
- 4 New Developments in Cervical Cancer Screening and Prevention, FRANCO, E& MONSONECO, J
- 5 Principles and practice of gynecologic oncology, HOSKING, W.J et al
6. Ovarian Cancer: Controversies in Management, GERSHENSONID.M. & MCQUIRE. W. P
7. Essentials of Gynaecologic Cancer, LAKITON, F et al

8. Epithelial Cancer of the Ovary, LAWTON, FRANK, Getal
- 9 Hand Book of Colposcopy, LUESELY,D.et.al
- 10 Cancer and Pre-Cancer of the Cervix, LUESLEY DM & BARRASS R
- 11: Gynaecologic Cancer Surgery, MORROW CP et al
12. Synopsis of Gynaecologic Oncology, MORROKI CP & CURTUN.J.P.
13. Multimodality Therapy in Gynecologic Oncology, SEVIN, B.U et al
14. Ovarian Cancer SHARP. F et al
- 15 Cancer of the Cervix SHINGLETON HM & ORR. J. W.

### **Paediatric Oncology**

1. Colour Atlas of Paediatric Haematology, HANN.I.M.
2. Manual of Paediatric Haematology and Oncology, LANZKOWSKY PHILIP.
3. Priciples & Practice of Paediatric oncology, PIZZO P.A & POPLACK

### **Journals**

- 1.American Journal of Pediatrics
- 2.Acta Oncologica .
- 3.Hematology/Oncology
4. British Journal of Cancer
5. Cancer
- 6 CA.A Cancer Journal for Clinicians
7. Cancer Detection & Prevention
8. Cancer Genetics and Cytogenetics
9. Cancer Journal (Scientific American) (NP)
10. Cancer Survey (NP) 11. Cancer Treatment Review
12. Clinical Oncology
13. Current Problem in Cancer
14. Current Opinion in Oncology ★
15. European Journal of Cancer
16. European Journal of Surgical Oncology
17. Genes, Chromosomes and Cancer
18. Gynecologic Oncology
19. Hematological Oncology
20. Hematology Oncology Clinics of North America
21. Indian Journal of Cancer (Indian)
22. International Journal of Cancer (UICC)
23. International Journal of Gynecological
24. Cancer
25. International Journal of Radiation Oncology
26. Biology/Physics
27. Journal of Cancer Education (NP)
28. Journal of Clinical Oncology
29. Journal of National Cancer Institute (Gift)
30. Journal of Psycho social Oncology
31. Journal of Surgical Oncology



- 32. Medical & Pediatric Oncology
- 33. Nutrition and Cancer
- 34. Oncology (NP)
- 35. Psycho-Oncology
- 36 Radiotherapy & Oncology
- 37. Seminars in Oncology
- 38. Seminars in Oncology Nursing
- 39. Seminars in Radiation Oncology
- 40. Seminars in Surgical Oncology
- 41. Surgical Oncology Clinics of North America

