



MALABAR CANCER CENTRE



STUDENTS MANUAL

B.Sc. Medical Radiological Technology

About the Institute

Malabar Cancer Centre, Thalassery (MCC) is an autonomous institution under Health and Family Welfare Department, Government of Kerala, started with an aim to establish a comprehensive cancer centre, providing the much-required oncology care to the population of Northern region of Kerala and neighbouring parts of Karnataka and Tamilnadu states and Union territory of Puducherry. The main objective of the centre is not only to provide comprehensive cancer care but also to develop as a Research and Training Centre of international standards. A society named Malabar Cancer Centre Society was registered under Societies Registration Act XXI of 1860 with the above aims and clinical work in MCC started from March 2001 onwards. At present MCC has around 210 beds with 150 in patient bed strength which is expected to be increased to 400 plus in near future. The control and management of the Society are vested in the Governing Body consisting of 23 members with the Hon'ble Chief Minister of Kerala as the Chairman. The routine activities and functions of the Centre are supervised by the Executive Committee, with the Secretary, Department of Health and Family Welfare, Government of Kerala being the Chairperson of the Committee. The members in the Governing Body and Executive Committee are functioning by virtue of their official positions.

MCC is providing a full spectrum of ontological care as an **Autonomous not-for-profit institution** funded by the State Government and other sources. During the last fifteen years period, a total of around 30000 new cancer patients had registered for various modalities of cancer treatment and about 4 lakhs patient visits made during this period. The main modalities of treatment offered by MCC to patients, presently, include radiotherapy, chemotherapy, onco-surgery and palliative care. The Centre also carries out Community Oncology activities including cancer awareness and early detection programmes. With affiliation to Kannur University MCC started BSc.MRT course from 2011-12 onwards and since 2013 the course has been transferred and affiliated to Kerala University of Health Sciences (KUHS).

VISION

To be a centre of excellence in education and research to produce globally competent professional minds with human values and ethics to serve the society by taking part in scientific, innovation and academic activities .

MISSION

The College strives to provide professionals with the skills necessary for the diagnosis, treatment and prevention of disease and disability in order to assure optimum health conditions in the community and beyond, with an unwavering commitment to ethical practice.

FACILITIES

Diagnostic facilities

1. **X-ray:** GE DX 525 X-Ray Unit was commissioned in 2005 along with Automatic Film Processing Unit. A digital x ray – Definium 6000-I, two portable x ray, and a C-Arm also included in X- ray section
2. **Mammography:** Has one of the best mammography machine- HologicSelenia Dimension with 3D mammography, stereotaxic and mammotome biopsy facility. Unit also has CAD facility.
3. **Ultrasound Scan:** Three Ultrasound Scanners available - GE LOGIQ 200 Ultrasound Machine, Portable Ultrasound Scanner MUS 602, Color Doppler Ultrasound Scanner (Hitachi EUB).
4. Major services includes routine abdominal scans, doppler, USG guided biopsies, drainage, pigtail insertion and brachytherapy application.
5. **CT Scanner:** The GE Lightspeed Multi slice CT scanner with GE Advantage Sim Virtual simulation workstations was commissioned in 2007.The major activity includes routine spiral CT scan, CT Angiography, Multi phase studies, guided biopsies, drainage procedures, pigtail insertion and treatment planning. New CT Scanner,Revolution EVO,GE Hangwei Medical Systems Pvt.Ltd. Installed and started clinical use in 2020.
6. **MRI Scanner:**HDxT 1.5T Signa 16 Channel GE MRI scan was commissioned in January 2013. The machine has capability for routine imaging, whole body imaging, whole body DWI, endorectal coils for prostate, rectal and cervix imaging with prostate spectroscopy, dedicated breast coils and non contrast whole body angiography.

7. **Intervention Radiology system** : M/S Siemens Artis Zee FMSIR Interventional Radiology Unit started functioning since 2020.
8. **Robot arm assisted biopsy and RFA therapy**
9. **PACS**
10. Department of CLSTR with state of art Clinical Biochemistry & Haematology Microbiology & Virology , Genetics & Molecular Biology and Covid Testing Labs.
11. Division of Oncopathology with subdivisions of Histopathology, Cytopathology & Haematopathology including techniques of frozen sections and automated immunohistochemistry, Fluorescent Insitu Hybridisation, Flow Cytometry and Liquid based cytology
12. Tumor bank for archiving paraffin blocks, frozen tissue and blood for research projects in the future
13. Cancer awareness classes and early detection camps for the community

Clinical facilities

1. **Linear Accelerator (Varian ClinacIX):** This dual energy high end Linear Accelerator is a complete and integrated platform for delivering state of the art Radiation Therapy treatments e.g. 3DCRT/IMRT/RapidArc/IGRT/SBRT/SRS. The system is capable of treatment with 2 Photon Beam Energies and 6 Electron Energies. It is equipped with On Board Imaging System capable of KV Xrays and Cone Beam CT images for online treatment verification and adaptive radiotherapy. The machine treats about 65 - 70 patients daily with 65 - 70% being treated with conformal radiotherapy (3DCRT, IMRT, VMAT, IGRT, SBRT, SRS). This machine has successfully treated more than 3000 patients since its commissioning in November 2011.
2. **Linear Accelerator (Elekta Versa HD):** This is a dual energy high end LINAC with FFF for delivering the radiotherapy treatments like 3DCRT/IMRT/VMAT/IGRT/SBRT/SRS/ABC technique for Breast and Lung malignancies.
3. **Nucletron 18 Channel HDR Brachytherapy:** The system is capable of delivering brachytherapy treatment to various sites. The Centre practices Intracavitary, Interstitial, Intraluminal and Surface Mould Brachytherapy. A dedicated Brachytherapy OT is situated beside the brachytherapy vault.
4. **Tele Cobalt 60:** New unit under installation.
5. **Treatment Planning System:** The Department has the latest ARIA Oncology Information System along with the ECLIPSE treatment planning system. In addition it has the ADVANTAGE Simsystems, ONCENTRA BRACHY Treatment Planning System and Monaco Planning System for Versa HD.
6. **CT Simulator:** Department has a dedicated CT simulator for treatment planning both conventional and advanced treatment.

7. **Conventional Simulator:** The Department has Conventional Imagin Simulator in which patients are routinely simulated for conventional planning. The images can be fluroscopically transferred to the Treatment Planning Systems.
8. **Mould Room:** The Department has a well-equipped mould room with facility to make custom thermoplastic immobilization masks, vaccum cushions, compensators, Electron cutouts etc.
9. Outpatient service is being conducted 6 days a week.
10. On an average more than 1000 outpatient visits in a month.
11. Cancer Palliative Medicine Clinic.
12. Recognized institution for possession and supply of Oral Morphine.
13. **Operation Theatre:** Well equipped to perform all major surgical procedures
14. Endoscopy services with Oesophagogasitric, Colonoscopy and Bronchoscopic examinations.
15. **Fully functional Modern Blood Bank** (Division of Transfusion Medicine) provides clinical services to support patients in need of blood component therapy, apheresis components, cellular therapy, therapeutic apheresis, irradiated blood and specialized laboratory diagnostics like flow cytometry, HLA typing.
16. Day care chemotherapy ward, Separate general wards for male and female in-patients, pre-operative Ward, post-operative Wards and Paywards.
17. Well equipped Medical ICU, High Dependency unit, Intensive Chemo ward and Bone marrow transplantation unit.
18. **24 hours Pharmacy** dispensing all the medicines for cancer patients.
19. **Tobacco Cessation Clinic**
20. **Stoma Clinic and Lymphedema Clinic.**

Supportive Facilities

1. **Drug Bank:** Drug Bank is formulated for collection of drugs from Doctors in and around Thalassery and also sample medicines issued from various pharmaceutical companies. Such medicines are issued free of cost to the needy poor patients, who are undergoing treatment from this Centre.
2. **Home care services:** Home care services provided to patients staying nearby and who are unable to travel to MCC for availing treatment.
3. **Hospital Library for patients and relatives:** A unique Hospital library for patients, their relatives and staff is functioning in the centre since 2005. The library is funded by Kerala State Library Council.
4. **Tele Medicine Unit:** Telemedicine facility has been started in MCC with financial assistance from NRHM and technical assistance from C-DAC and Kerala State IT mission.
5. National Knowledge Network connectivity
6. Dynamic website **www.mcc.kerala.gov.in** in English and Malayalam Languages

7. Implemented e-Procurement System of Govt. of Kerala.
8. Two Smart Class Rooms
9. 26 acres of elevated greenery land
10. 11KV dedicated line, which can drop power up to 2.5MW
11. Transformer capacity of 1600KVA
12. DG of 250 KVA and 500KVA
13. Effluent Treatment Plant with 110 KLD
14. Incinerator with capacity of 25KG/hr
15. Open well to cater all needs of the Hospital
16. Incinerator with capacity of 15kg/hr
17. Canteen for Patients, staff, students and general public
18. Dormitory for bystanders

DEPARTMENTS AND FACULTIES

Departments and Divisions

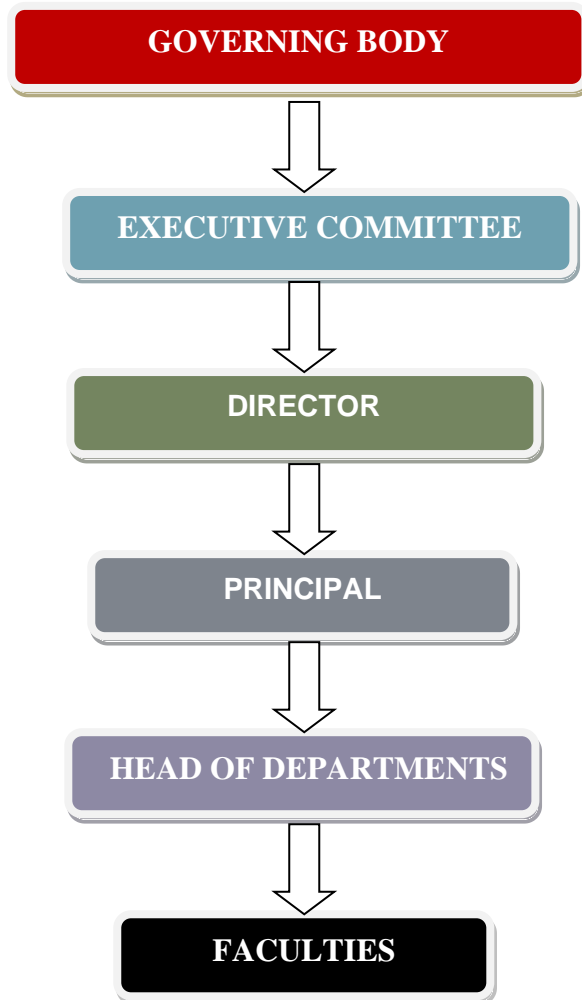
Sl. No	Name of the Department	Divisions under the Department
01	Department of Radiation Oncology	<ul style="list-style-type: none">• Radiation Oncology Division• Radiation Physics Division
02	Department of Imageology	<ul style="list-style-type: none">• Department of Imageology
03	Department of Clinical Hematology and Medical Oncology	<ul style="list-style-type: none">• Clinical Hematology Division• Medical Oncology Division• Division of General Medicine• Division of Paediatrics/ Pediatric Oncology
04	Department of Respiratory Medicine and Critical care	<ul style="list-style-type: none">• Respiratory Medicine and Critical care
05	Department of Surgical Oncology	<ul style="list-style-type: none">• Surgical Oncology Division• Division of Rehabilitation- Physiotherapy, Speech and Swallowing therapy• Division of Gynaecology/ Gynaecologic Oncology
06	Department of Clinical Laboratory Services and Translational Research	<ul style="list-style-type: none">• Oncopathology Division• Molecular Oncology Division• Biochemistry Division• Microbiology Division• Blood Bank and Transfusion Medicine Division• Division of Genetics and Cytogenetics
07	Department of Clinical Nutrition and Dietetics	Clinical Nutrition and Dietetics
08	Department of Cancer Registry and Epidemiology	<ul style="list-style-type: none">• Cancer Registry and Epidemiology Division• Medical Records Division• Health Information Technology Division• Clinical Research and Biostatistics Division
09	Department of Community Oncology	<ul style="list-style-type: none">• Community Oncology Division• Tobacco Cessation Division

10	Department of OncoAnesthesiology	<ul style="list-style-type: none"> • OncoAnesthesiology Division
11	Department of Cancer Palliative Medicine	<ul style="list-style-type: none"> • Cancer Palliative Medicine Division • Psycho-Oncology and Clinical Psychology Division. • Home Care Services Division.
12	Department of Dentistry & Rehabilitation	<ul style="list-style-type: none"> • Dentistry • Rehabilitation Oncology
13	Department of Engineering & Maintenance	Engineering & Maintenance
14	Department of General Administration	<ul style="list-style-type: none"> • General Administration Division • Hospital Administration • Academic Division & Library and Information Science • Public Relations and Clinical Services Division • Accounts Division • Purchase/ Stores Division & Pharmacy • Human Resources and Establishment Division • Security Division
15	Department of Oncology Nursing	<ul style="list-style-type: none"> • Nursing Services Division

Authorities of the Institution

- Director: Dr Satheesan. B MS, DNB, MCh (Surgical Oncology)
- Principal: Dr Sangeetha.K.Nayanar MD,DNB(Pathology)
- Head of Department: Dr.Geetha.M MD,DMRT
- Administrative Officer: Shri.A.K.Rajesh

HEIRARCHY:



BSc. MEDICAL RADIOLOGICAL TECHNOLOGY

DETAILS OF COURSE

Title of course:

Bachelor of Science in Medical Radiological Technology- B.Sc. (M.R.T)

Duration of course:

The course is a professional course spanning FOUR years. First three years have theory and practical training. The practical training includes, lab works in first year and clinical postings in second and third years. The Fourth year is for intense practical training, where the student is trained to become a practicing Technician with hands on experience, under proper supervision. There shall be no theory classes in fourth year, but student shall be entrusted with seminars, teaching sessions for juniors, symposiums, group discussions etc. At the end of fourth year, a project report shall be submitted under the guidance of an assigned faculty

Objectives of course

To mould professionally competent Radiological Technologists/Technicians

After successful completion of the course the candidate should be:

1. able to do independently manage all routine radiographic procedures.
2. able to do special investigations, under the guidance of Specialists in diagnostic radiology.
3. able to execute all routine and state of the art radiotherapy programmes as per prescription and direction of Radiation Oncologists and Physicists
4. able to operate and maintain all equipments used in diagnostic and therapeutic procedures
5. able to exercise professional skill and optimisation in all technological aspects of existing and emerging branches of radiological and radiotherapy practices.
6. able to handle machines with ionising radiation observing all national and international guidelines on radiological safety and accepted protocols.
7. able to assist in the use of ionising and non-ionising radiations for diagnosis and treatment of diseases.

Medium of instruction: English.

Modes of teaching and training:

1. Theory classes
2. Seminars
3. Symposia
4. Group discussions
5. Assignments
6. Library sessions
7. Lab training
8. Clinical postings
9. Project works
10. Conferences

Faculty:

There are two types of faculties

1. In house faculties
2. Guest Faculties- For Computer sciences, Mathematics, Physics, Nuclear Physics

Details of In-house Faculties:

Name	Department	Designation
Dr.B.Satheesan	Surgical Oncology	Director
Dr.SajithBabu.T.P	Surgical Oncology	Professor
Dr.Nizamudheen.P	Surgical Oncology	Associate Professor
Dr.Geetha.M	Radiation Oncology	Associate Professor
Dr.SatheeshBabu T.V.	Imageology	Associate Professor
Dr.Vinin N.V.	Radiation Oncology	Associate Professor
Dr.Joneetha Jones	Radiation Oncology	Assistant Professor
Dr.Greeshma.K.E	Radiation Oncology	Assistant Professor
Dr.Chandran K Nair	Clinical Heamatology& Medical Oncology	Professor
Dr.VineethaRaghavan	Clinical Heamatology& Medical Oncology	Associate Professor

Dr.Manu Prasad A	Clinical Heamatology& Medical Oncology	Associate Professor
Dr. V.P. Praveen KumarShenoy	Clinical Heamatology& Medical Oncology	Assistant Professor
Dr.Sangeetha K Nayanar	Clinical Lab services & Translational Research	Professor
Dr.SitharaAravind	Clinical Lab services & Translational Research	Associate Professor
Dr.Parthiban.R	Clinical Lab services & Translational Research	Associate Professor
Dr.Ashwathi Krishnan	Clinical Lab services & Translational Research	Assistant Professor
Dr. Kandathil Joseph Philip	Clinical Lab services & Translational Research	Assistant professor
Dr. Anand Narayanan	Clinical Lab services & Translational Research	Assistant professor
Dr.SajiniSamual	Clinical Lab services & Translational Research	Assistant Professor
Dr.Sarath K.E.	Clinical Lab services & Translational Research	Lecturer
Dr.M.S.Biji	Cancer Palliative Medicine	Assistant Professor
Dr.PramodSankar	Dentistry & Rehabilitation	Associate Professor
Dr.Saina Sunil Kumar	Cancer Registry & Epidemiology	Lecturer
Dr.Neethu.A.P	Community Oncology	Lecturer
Dr.Phinse M Philip	Community Oncology	Lecturer
Dr Deepak Roshan VG	Clinical Lab services & Translational Research	Assistant professor
Dr Vipin Gopinath	Clinical Lab services & Translational Research	Lecturer
Silpa Ajaykumar	Radiation Oncology	Lecturer in Radiation Physics
Suja.C.	Radiation Oncology	Lecturer in Radiation Physics
Resmi K Bharathan	Radiation Oncology	Lecturer in Radiation Physics
Lisha Jose	Radiation Oncology	Lecturer in Radiation Physics
Bindu.T	Cancer Registry & Epidemiology	Lecturer in Biostatistics
Ratheesan.K	Cancer Registry & Epidemiology	Lecturer in Biostatistics
Maya Padmanabhan	Clinical Research & Biostatistics	Lecturer in Biostatistics
Riyas.T	Clinical Research & Biostatistics	Lecturer in Biostatistics

Course outline:

Radiological Technology deals with the application of different types of radiations and allied tools for the diagnosis and treatment of diseases. Graduates in Radiological Technology are professionals who must often work as technologists in medical institutions. Graduates are also engaged in the design, manufacture, and sale of radiological systems as application specialists. There is a great demand for these professionals in all the developed and developing countries. Hence, career opportunities for radiology technologists will continue to be bright and rewarding in the near and distant future.

Subjects

First Year	Second year	Third year	Fourth year
<ul style="list-style-type: none">• Paper I - Anatomy• Paper II Physiology• Paper III General Physics & Electronics• Paper IV Atomic and Nuclear Physics• Paper V Mathematics• Paper VI Computer Science• Paper VII - General Papers:<ul style="list-style-type: none">✓ A. Special English,✓ B. Community Medicine,✓ C. Health education,✓ D. Psychology,✓ E. Sociology.	<ul style="list-style-type: none">• Paper VIII Radiation Physics I• Paper IX Radiotherapy I• Paper X Radio diagnosis I• Paper XI Pathology	<ul style="list-style-type: none">• Paper XII Radio diagnosis II• Paper XIII Radiotherapy II• Paper XIV Radiation Physics II• Paper XV - Radiological Protection and statutory aspects	In the fourth year, the students will be posted to get trained in diagnostic and therapeutic facilities in the institution and also carry out project work simultaneously

Logbook

- To be maintained by the candidate and counter signed by the concerned HOD.
- There shall be log book for each year.
- A log book has to be maintained by all students and this has to be reviewed by the HOD of the Department periodically. Periodic assessment has also to be done in the Department by the Teachers.
- Logbook is to be submitted at the time of practical examination for perusal by examiners.

Attendance:

There are two methods of attendance marking practiced.

1. Biometric punching
2. Physical register- one in the Department, One in class rooms for various classes and one for posting
3. The attendance details will be put up in the notice board every month. Students who do not meet 80% marks, will be given written notice and the copy will be sent to parents. Parents shall be intimated through Whatsapp, SMS, email and post.
4. The attendance of both biometric punching and physical registers will be calculated and whichever is less will be taken



EXAMINATIONS

Eligibility to appear for exams:

- No candidates shall be admitted to any year of B.Sc (MRT) examination unless he/she has a minimum of 80% attendance with the provision for one time condonation up to 10% on medical grounds (condonable limit 70%).
- Condonation for shortage of attendance shall be vested with a Committee, constituted by the Principal/ Head of Institution, with the Principal/ Head of Institution as the Chairman and five members (Senior Teachers) in the Committee, and remittance of required fee to the University.
- A candidate who has not attained 80% attendance and the shortage is beyond the condonable limit he/ she shall not be eligible to continue the course with the same batch of students. He/ she may obtain special sanction (Condonation of Break of Study) from the Institution and the University to continue with the junior batch of students.
- Those who obtain 50% of aggregate in each paper towards internal assessment will be eligible for appearing the University examinations. As a matter of policy, Condonation is generally not provided in MCC

Schedule of Regular/Supplementary examinations:

Every year there shall be an examination to examine the students. Each examination may be held twice a year. The first examination in a year shall be the annual examination and the second examination shall be supplementary examination. The examinations shall be of written and practical (including viva voce) carrying maximum marks for each part of a subject.

Project:

At the end of fourth year, candidate has to submit the completed project work to the University and a Project presentation/viva will be conducted by the University.

Leaves, Holidays:

As per the Calendar attached. There will not be any mid- summer holiday. After University examinations, a maximum of three days may be granted as Holidays before next year classes

Study leave: It is not a right to get study leave before University examinations. The Department may decide on the same. It is for a maximum of 7 days

How to avail leave:

Leave should be requested to HOD through proper channel. A leave letter format available in the Department shall be used. It has to be routed through batch coordinator. Parent should know about the leave. Prior approval of HOD is required. If any leave is taken without proper approval of Department Head, it will be considered as “absent” and it will lead to loss of two days attendance.

In case of any sickness leading to leave, the following should be submitted for approval of leave

1. Medical certificate from treating Doctor (any false and fraudulent Medical Certificate will lead to legal action against the Doctor)
2. Prescription sheet of the treating Doctor

Dress code:

White top and black bottom with black shawl for girls and white shirt with black pants for boys. Both of them should wear black shoes.

In- Campus celebrations:

1. Onam,
2. Christmas/New Year
3. College day
4. Graduation day
5. Art festival

Students shall join various commemorations days celebrated by MCC. College Day, Arts Festival and Graduation day may be partly supported by MCC. Students shall collect money among themselves and conduct the program. The internal mechanism of MCC shall support the students

Mentorship programme:

Mentoring is a guidance system where one faculty imparts their knowledge, skills, and experiences with student. The goal of mentorship is to help students learn skills and information that will help lead them to success in their careers. The students can approach their mentor whenever a need may arise. Mentors help students identify their own goals and offer empowerment and encouragement to guide them to achieve their goals, or solve any challenges

along the way. The students can discuss their academic as well as personal problems with their mentors. The mentor should arrange meetings with their mentee in regular intervals.

Various Committees related to students:

- Parent-Teacher Association- Executive Committee and General Body
- Student Support and Guidance program (SSGP)
- Anti-ragging Committee
- College Council
- College Union Committee
- Academic Monitoring Cell.
- Students Grievance Redressal Cell (SGRC)
- Sexual Harassment Prevention Committee

Parent Teacher Association (PTA)

There is an active PTA in Malabar Cancer Centre College and all main students' level activities will be discussed in PTA Executive Committee. The Executive Committee of PTA also contains the representatives from the parents of each batch. Minimum two Executive Committee meetings and two General Body meetings will be conducted every year. All the PTA members and Executive Committee members should attend the PTA General Body and Executive Committee meetings, respectively without failure.

Student Support and Guidance program (SSGP)

Student Supporting Guidelines Programmes (SSGP) is conceived by the Kerala University of Health Sciences with the objective of keeping Academic success as paramount. Various aspects of SSGP concentrate include improving learning skills, counselling support, Academic guidance and extracurricular activities of the students.

Anti Ragging Committee

In view of directions of Hon'ble Supreme Court in SLP No 24295 of 2006 dated 16/05/2007 and civil Appeal no 887 of 2009 dated 8/05/2009 to prevent, prohibit and eliminate the scourge of ragging. Every college shall constitute a committee known as anti ragging committee to be nominated by principal and consisting representatives of faculty members, parents, students (seniors and fresher's) non teaching staff, local media, non govt organisation involved in youth activities, hostel wardens. Both male and female shall be in the committee. The duty of the committee is to ensure the preventive measures are properly taken and monitor anti ragging squad.

College Council

As per Kerala University of Health Sciences first statutes 2013, chapter XXI clause 15, one of the conditions for granting affiliation is the constitution of college council. Every college shall have a duly constituted college council representing the staff and students to advise the question relating to the internal affairs of the college. The council constitute Head of the departments, Administrative officer, PTA representative,

College Union chairman etc. Principal is the Chairman of the council.

College Union

All students enrolled in the college affiliated to the University shall be the member of the union. They have the right to vote and contest in all elections to the college Union.

The college union shall have an Executive Committee consisting of The Chairman, The Vice Chairman, The General Secretary, Councillor to the University Union, The Editor of college magazine, The Secretary for arts, The Secretary for sports, One Member representing the students of each year of graduate and post graduate courses, elected by the students of the respective years from among themselves. Two member elected by the lady students of the college from among themselves, as far as mixed colleges are concerned. One member representing the students belonging to the SC/ST TO be nominated by the executive committee in case none of the elected members belonging to SC/ST. The honorary Treasurer and staff advisor [Ex- officio]

The main objective of College union is to train the students of the College in the duties, responsibilities and rights of citizenship.

To promote opportunities for the development of character, leadership, efficiency, knowledge and spirit of service among the students.

To organize debates, seminars, work squads, tours and similar other activities.

To encourage sports, arts and other cultural, educational and recreational activities.

Academic Monitoring Cell

Academic Monitoring Cell (AMC) with the power of monitoring and evaluate all the academic activities of the MCC including DNB, Fellowship, BSc MRT, PG dissertation, internship and observership programme. The cell shall monitor the academic calendar, course calendar including academic schedule, roster for faculties and shall monitor its implementation. It shall provide assistance and inputs to Curriculum Implementation Cell. It shall do all the correspondence and compliance checking periodically and report to Director. The cell shall convene meeting on quarterly basis or whenever it is required. An evaluation report of the same should be submitted to Director.

Students Grievance Redressal Cell (SGRC)

The main functions of the Grievances Cell is to have a systematic receipts and thereafter redressal / follow-up of the difficulties / representation / complaints received from the students. Grievances Committee in this institution will deal with the grievances of the students to hear and settle grievances of students. The Committee will report to the Head of the Institution for further action, if any. The function of the Cell is to look into the complaints lodged by any student and parents and take necessary steps. The Grievance Cell is also empowered to look into matters of harassment-physical, mental and sexual. The primary responsibility of the Committee is to provide atmosphere for students to express their grievances / problems freely and frankly,

without any fear of being victimized. The institution provides mechanism to the students for redressal of their grievances with regard to their complaints on academic and non-academic matters.

A student who has any grievances at the Programme level shall make an application first to the class Coordinator/ Mentor as the case may be. They, after verifying the facts shall try to redress the grievance within a reasonable time, preferably within a week of the receipt of the complaint. If the student is not satisfied with the solution of the Class Coordinator/Mentor, as the case may be, then the same should be placed before the Head of the Department and if unresolved it will be addressed to Principal. They will refer the same to the respective College level Committee (Students Grievance Redressal Cell) for redressal, if necessary. Even though the students have the right to approach the Students Grievance Redressal Cell (SGRC) directly, it is preferable to move through the path described earlier. In case the grievance is towards any of the person/faculty in the path, it is better to refer the case to the Principal or the Committee. No student shall be penalized for raising complaint or grievance at any cost. The appellate authority is Director.

Sexual Harassment Prevention Committee

The Institution is committed to creating and maintaining a community in which students, teachers and non-teaching staff can work together in an environment free of violence and harassment, exploitation or intimidation. The Committee is headed by a woman and more than 50% of the members are women. Students representative is included in the committee. The committee will have three main functions: (1) Sensitization and awareness generation (2) Mediation and crisis management (3) Enquiry and formal redressal. The committee with the help of volunteers and professionals will undertake to sensitize the entire college about issues concerning sexual harassment. Students, teachers, non-teaching staff and administrators must be made aware of issues relating to gender equality and sexual harassment. When the complaint cannot be resolved informally, the Cell shall conduct enquiries and recommend punitive action against offenders, if necessary.

Disciplinary actions:

Violation of the institutional rules is punishable. Punishment shall be as follows based on the gravity of offence

1. Censure
2. Fine
3. Suspension for a defined period
4. Termination

Procedure of Enquiry:

- Preliminary enquiry
- Detailed enquiry by Enquiry officer

Elections:

As per the University schedule

Probable Schedule of Internal Examination:

There shall be atleast three internal examinations and many class tests. Student should score atleast 50% marks in internal examination to be eligible for appearance in the University examination. Best two internal assessment marks will be taken for calculation. The pattern of internal assessment marks will be as follows

1. Attendance (5 marks)
2. Seminars/Assignments (20 marks)
3. Examination marks (25 marks)
4. Log book

Total 50 marks

- ✓ First Internal Examination will be conducted during the month of December - January
- ✓ Second internal examination will be conducted during the month of April-May

Third Internal examination will be conducted during the month of August-September

University Examination:

Usually Regular University examinations are conducted during the month of August/September. The timing mentioned is only probable expected one and it might change as per KUHS decisions, from time to time.

Important dates for the four year course is given below

S.N O	DATE	EVENTS
1	OCTOBER 1ST	Syllabus orientation and commencement of class
2	1ST OCTOBER TO 15TH OCTOBER	Payment of fee without fine
3	15TH TO 25TH OCTOBER	Payment of fee with 2% of interest
5	December third week	I submission of log book
6	JANUARY THIRD WEEK	Department presentation of project protocol
7	JANUARY 4TH SATURDAY	Sports Day
8	FEBRUARY 1 ST SATURDAY	Arts day
9	FEBRUARY THIRD TUESDAY	PTA meeting -1
10	APRIL FIRST WEEK	II submission of log book
12	AUGUST FIRST WEEK	PTA meeting -2

13	NOVEMBER	Community outreach programme
14	JULY SECOND WEEK	Date for submission of internal marks statement by the coordinator
15	JULY THIRD WEEK / AS PER DATE INTIMATED BY KUHS	Last date of submission of internal marks to KUHS
16	JULY LAST WEEK	Date of publication of notification for University Examinations
17	JUNE SECOND WEEK	III submission of log book
18	JULY FIRST WEEK	Presentation of project in the department
19	AS PER DATE SUGGESTED BY KUHS	SUBMISSION OF PROJECT TO THE UNIVERSITY

II YEAR		
S.N O	DATE	EVENTS
1	OCTOBER 1 ST	Syllabus orientation and commensment of class
2	1ST OCTOBER TO 15TH OCTOBER	Payment of fee without fine
3	15TH TO 25TH OCTOBER	Payment of fee with 2% of interest
5	December third week	First Internal examination
6	January second week	Declaration of Result-First internal examination
7	JANUARY 4TH SATURDAY	Sports Day
8	FEBRUARY 1 ST SATURDAY	Arts day
9	FEBRUARY THIRD TUESDAY	PTA meeting -1
10	APRIL FIRST WEEK	Second internal Examination
11	APRIL FOURTH WEEK	Declaration of Result-Second internal examination
12	JUNE SECOND WEEK	Third internal Examination
13	JUNE FOURTH WEEK	Declaration of Result-Third internal examination
14	AUGUST FIRST WEEK	PTA meeting -2
15	NOVEMBER	Community outreach programme
16	JULY SECOND WEEK	Date for submission of internal marks statement by the coordinator
17	JULY THIRD WEEK / AS PER DATE INTIMATED BY KUHS	Last date of submission of internal marks to KUHS
18	JULY LAST WEEK	Date of publication of notification for University Examinations

III YEAR		
S.N O	DATE	EVENTS
1	OCTOBER 1 ST	Syllabus orientation and commensment of class
2	1ST OCTOBER TO 15TH OCTOBER	Payment of fee without fine

3	15TH TO 25TH OCTOBER	Payment of fee with 2% of interest
5	December third week	First Internal examination
6	January second week	Declaration of Result-First internal examination
7	JANUARY 4TH SATURDAY	Sports Day
8	FEBRUARY 1 ST SATURDAY	Arts day
9	FEBRUARY THIRD TUESDAY	PTA meeting -1
10	APRIL FIRST WEEK	Second internal Examination
11	APRIL FOURTH WEEK	Declaration of Result-Second internal examination
12	JUNE SECOND WEEK	Third internal Examination
13	JUNE FOURTH WEEK	Declaration of Result-Third internal examination
14	AUGUST FIRST WEEK	PTA meeting -2
15	NOVEMBER	Community outreach programme
16	JULY SECOND WEEK	Date for submission of internal marks statement by the coordinator
17	JULY THIRD WEEK / AS PER DATE INTIMATED BY KUHS	Last date of submission of internal marks to KUHS
18	JULY LAST WEEK	Date of publication of notification for University Examinations

IV YEAR		
S.NO	DATE	EVENTS
1	OCTOBER 1ST	Syllabus orientation and commensment of class
2	1ST OCTOBER TO 15TH OCTOBER	Payment of fee without fine
3	15TH TO 25TH OCTOBER	Payment of fee with 2% of interest
5	December third week	I submission of log book
6	JANUARY THIRD WEEK	Department presentation of project protocol
7	JANUARY 4TH SATURDAY	Sports Day
8	FEBRUARY 1 ST SATURDAY	Arts day
9	FEBRUARY THIRD TUESDAY	PTA meeting -1
10	APRIL FIRST WEEK	II submission of log book
12	AUGUST FIRST WEEK	PTA meeting -2
13	NOVEMBER	Community outreach programme
14	JULY SECOND WEEK	Date for submission of internal marks statement by the coordinator
15	JULY THIRD WEEK / AS PER DATE INTIMATED BY KUHS	Last date of submission of internal marks to KUHS
16	JULY LAST WEEK	Date of publication of notification for University Examinations
17	JUNE SECOND WEEK	III submission of log book
18	JULY FIRST WEEK	Presentation of project in the department
19	AS PER DATE SUGGESTED BY KUHS	SUBMISSION OF PROJECT TO THE UNIVERSITY

LIST OF TEXT BOOKS:

1. Those to be purchased

Subject	Book
ANATOMY & PHYSIOLOGY	Anatomy and Physiology-Ross and Wilson
COMPUTER APPLICATIONS	Fundamentals of Computing, J. B. Dixit, Laxmi Publications
GENERAL PHYSICS AND ELECTRONICS	Concepts of modern physics-Arthur Beiser Basic Electronics-B L Theraja
ATOMIC AND NUCLEAR PHYSICS	Modern Physics-Murugesan R
MATHEMATICS	Mathematics-Prof.C.P.JanardhananPillai,V.G Vijayalakshmy
PATHOLOGY	Robbin's Basic Pathology-10 th Edition
RADIO DIAGNOSIS I & II	Clark's Handbook for Radiographers – Charles Sloane, Ken Holmes & Craig Anderson, Hodder Educations, UK
RADIATION PHYSICS I & II	1.F.M.Khan Physics of radiation therapy 2.Christensen's Physics of Diagnostic Radiology – Christensen
RADIOTHERAPY	Walter and Miller's Textbook of Radiotherapy –Paul Symonds,Charles Deehan,John A.Mills,Cathy Meredith

1. Reference books

Subject	Book
ANATOMY	<ol style="list-style-type: none"> 1. BD Chaurasia's Human Anatomy 2. Radiographic Anatomy – Meschan 3. Gray's Anatomy- Henry Gray. 4. Gray's Anatomy- 2nd edition. By Richard L Drake et al. 5. Anatomy and physiology for nurses including notes on their clinical application- Evelyn C. Pearce 6. Basic Anatomy and Physiology for Radiographers- MRE Dean. 7. Surface and Radiological Anatomy – 3rd edition – A Halim
PHYSIOLOGY	<ol style="list-style-type: none"> 1. Anatomy and Physiology-Ross and Wilson 2. The human body- Best and Taylor. 3. Basic anatomy and physiology for Radiographers- MRE Dean. 4. Human anatomy and Physiology- King and showers.
COMPUTER APPLICATIONS	<ol style="list-style-type: none"> 1. Fundamentals of Computing, J. B. Dixit, Laxmi Publications

	<ol style="list-style-type: none"> 2. Database System Concepts, Korth, Silberschatz, and Sudarsan- Tata McGraw Hill 3. Computer Networks-Andrew S. Tannenbaum-PH 4. Internet for Everyone - Alexis Leon and Mathews Leon -- Vikas Publishing House Pvt. Ltd., New Delhi 5. Operating System Concepts, Silber Schatz, Galvin, Gange (6th Edition) 6. Open Office Basic: An Introduction, Prof. James Steinberg, Gold Turtle Publishing, December 2012, ISBN 978-1481270939 7. C – Programming, E.Balagurusamy, Tata McGray Hill 8. C The Complete Reference - H.Sohildt, Tata McGraw Hill 9. Let us C - Y.Kanetkar, BPB Publications 10. The C programming language : Kerninghan and Ritchie 11. Information Systems For Healthcare Management, C.J. Austin, S.B. 12.Boxerman, 6thEdn, ISBN 81-8014-093-8, Standard Publishers distributors, New Delhi 12. Health Informatics in the Cloud, Mark L. Braunstein, Springer-Verlag New York Inc. (2012)
GENERAL PHYSICS AND ELECTRONICS	<ol style="list-style-type: none"> 1. Concepts of modern physics-Arthur Beiser 2. Basic Electronics-B L Theraja.
ATOMIC AND NUCLEAR PHYSICS	<ol style="list-style-type: none"> 1. Concepts of of Modern Physics-Arthur Beiser 2. Modern Physics-Murugeshan R
MATHEMATICS	<ol style="list-style-type: none"> 1. Differential Equations-Bijumon.R 2. Mathematics- Prof.C.P.JanardhananPillay,V.GVijayalakshmy 3. Vector Calculus- Prof.C.P.JanardhananPillay,V.GVijayalakshmy
PATHOLOGY	<ol style="list-style-type: none"> 1. Robbin’s Basic Pathology-10th Edition 2. Harsh Mohan Text-Book of Pathology
RADIO DIAGNOSIS I & II	<ol style="list-style-type: none"> 1. Clark’s Handbook for Radiographers – Charles Sloane, Ken Holmes & Craig Anderson, Hodder Educations, UK 2. Diagnostic Radiography – A concise practical Manual – Glenda J. Bryan (4th edn), Churchill Livingstone. 3. Christensen’s Physics of Diagnostic Radiology – Christensen 4. Radiographic latent image processing – W. E. J Mckinney 5. Radiological Pcedures– Dr.Bhushan 6. Text book of radiology for residents & technicians – Livingstone 4th edition, 7. Satish K. Bhargave Radiological patient care – Jensen Chesney. 8. Atlas of dental and maxillofacial radiological imaging – Brownie 9. Bontrager’s Handbook of Radiographic Positioning and Techniques-Kenneth L Bontrager,John P

	Lampignano. 10. Radiographic Imaging-D N and M O Chesney
RADIATION PHYSICS I & II	<ol style="list-style-type: none"> 1. F.M.Khan Physics of radiation therapy, 5th Edition 2. Radiographic Imaging – Derrick 3. Processing and Quality Control – William 4. Frank Herbert Attix, Introduction to Radiological Physics and Radiation Dosimetry 5. Christensen’s Physics of Diagnostic Radiology – Christensen 6. Treatment Planning in Radiation Oncology-Faiz M Khan,Bruce J Gerbi 7. Practical Radiotherapy physics and Equipment-Pam Cherry,angela M Duxbury 8. Hendees Radiation Therapy Physics-Todd Pawlicki,DanielJ.Scanderbeg,GeorgeStarkschall 9. Basic Radiological Physics-KuppusamyThayalan
RADIOLOGICAL PROTECTION AND STATUTORY ASPECTS	<ol style="list-style-type: none"> 1. Radiologic science for technologist – 9th edition (2008) Stewart Carlyle Bushong, Mosby Elsevier, UK 2. Text Book of Radiological Safety – K. Thaylan (2010) Jaypee Brothers and medical Publishers, New Delhi. 3. Quality Control in Diagnostic Imaging J.E.Gray
RADIOTHERAPY I & II	<ol style="list-style-type: none"> 1. Perez and Brady’s Principles of Radiation Oncology-Edward C Halperin,DavidEWazer,Carlos A Perez,Luther W Brady. 2. Practical Radiotherapy Planning-Ann Barret, Jane Dobbs, Stephen Morris,TomRoques. 3. The Physics of Modern Brachytherapy for Oncology-D Baltas,LSakelliou,NZamboglou. 4. Radiation Toxicity A practical Guide-William Small Jr.Gayle E Woloschak 5. Practical Essentials of Intensity Modulated Radiation Therapy. 6. Radiotherapy in Practice Brachytherapy-Peter Hoskin and Catherine Coyle. 7. Walter and Miller’s Textbook of Radiotherapy –Paul Symonds,CharlesDeehan,JohnA.Mills,Cathy Meredith. 8. Textbook of Radiation Oncology-Principles and Practice-G.K Rath,Bindhu K Mohanti. 9. An Introduction to Radiobiology-A.H.W Nias

FEES:**BSC MRT Course Fee Structure 2020-2024**

FEE STRUCTUR-BSc MRT (2020-24)ADMISSION		
First Year	Fee structure	Rupees
	Tuition Fee	50000/-
	Special Fee	10350/-
	Caution Deposit	4000/-
	PTA(at the time of admission)	2500/-
	TOTAL	67900/-
Second Year	Fee structure	Rupees
	Tuition Fee	50000/-
	Special Fee	10350/-
	Caution Deposit	4000/-
	TOTAL	64350/-
Third Year	Fee structure	Rupees
	Tuition Fee	50000/-
	Special Fee	10350/-
	Caution Deposit	4000/-
	Total	64350/-
Fourth Year	Fee structure	Rupees
	Tuition Fee	50000/-
	Special Fee	10350/-
	Caution Deposit	4000/-
	TOTAL	64350/-

**As applicable to KUHS, Thrissur*

- Rs.250/- as Registration Charges (One Time) for TLD Badges & Rs.900/- per year as Processing Charges from 2nd year onwards. The amount shall be collected as per the norms of AERB (Atomic Energy Regulatory Board)
- Yearly fee should be remitted before the starting month of every academic year. If the yearly fee is not remitted within the scheduled time, a penalty of 2% of the yearly fee (Tuition fee+ other fee if any) will be imposed along with yearly fee, for next 10 days. Still if the student fails to remit the yearly fee, an amount of Rs.250/- per day of delay (including holidays) will be imposed in addition to the yearly fee+ penalty (2%), subject to a maximum of next 10 days. Thereafter attendance will not be provided for such students and will not be permitted to appear for exams. In such cases the respective student/parent will only be responsible for such faults and institution has nothing to do with any problems, if arising from University.

Other facilities:

A] Hostel:

- Hostel fee Rs.2500, per month.
- Admission to College Hostel will be according to the availability.
- The whole year Hostel fee for an amount of Rs.30,000/- shall be remitted before the starting of every Academic Year.
- Hostel's Caution deposit (One Time) will be the double amount of the monthly hostel fee that is Rs.5000/-. (Refundable at the end of stay subject to no dues certificate)
- Hostel Policy should abide by all the Hostel's inmates

B] Library:



There are two libraries-

A] Institutional Medical Library:

Medical Library is a reference Library. All students shall take compulsorily take Library membership. Membership card will be issued from the Library. The Medical Library works 24x7. RFID system is implemented and it works in unmanned manner after 5 pm and on Sundays and holidays. Students cannot take any book outside the Library. They shall read and take notes in the Library. Any damage or loss to the book will attract twice the purchase rate of book as fine

B] Department Library:

This is under the Department of Radiation Oncology. Students shall use the books in the Department. Prior permission of Department Secretary should be obtained and any damage or loss to the book will attract fine, twice the purchase rate of book.

National Service Scheme (NSS)

The National Service Scheme (NSS) is a Central Sector Scheme of Government of India, Ministry of Youth Affairs & Sports. It provides opportunity to the student youth of 11th& 12th Class of schools at +2 Board level and student youth of Technical Institution, Graduate & Post Graduate at Colleges and University level of India, to take part in various Government led community service activities and programmes. The primary objective of NSS is personality

development through community service. That is, the aim of NSS is to provide opportunities to the students to acquire valuable practical experience through service to society. It changes the temperament of students towards humanity, helps them achieve all kinds of development including leadership. Community activities such as palliative services, imparting education on health, communicable diseases, agriculture etc. are taken up by the NSS volunteers. There is one NSS unit functioning in the College. All students are part of NSS. Students are expected to attend various activities of NSS. Being an active member these student volunteers would have the exposure and experience to be a person who understands human nature and ultimately he become an efficient administrator and an accomplished social leader.

National Career Service

National Career Service is a Five Year Mission Mode Project launched by the Hon'ble Prime Minister on 20th July, 2015. The project is being implemented by the Directorate General of Employment, Ministry of Labour & Employment. National Career Service (NCS) is a one-stop solution that provides a wide array of employment and career related services to the citizens of India. It works towards bridging the gap between jobseekers and employers, candidates seeking training and career guidance, agencies providing training and career counselling.

The NCS project reaches out to the people of this country through its three essential pillars i.e. a well-designed ICT based portal which is NCS portal, Country wide set up of Model Career Centres and Interlinkage with all the states through employment exchanges. The digital centralized portal provides a wide range of career related services including job search, job matching, rich career content, career counselling, information on Job Fairs and various other services. This portal facilitates registration of Job Seekers, Employers, Skill Providers, Career Counsellors, Local Service Providers (LSP's), Career Centres, Placement Organizations, Households (for availing the services of the LSP's) and Government Departments. The students can register to this portal using the link <https://www.ncs.gov.in/>.

C] Canteen

- Students will get food and beverages at a subsidized rate from MCC's Canteen.
- For the same, students can open a credit account with MCC Canteen
- The Canteen dues of current month will have to be settled before 5th of next month.
- A refundable caution deposit of Rs.4000/- need to be remitted in Canteen for account creation, which will be refundable subject to the no dues certificate.