श्री चित्रा तिरुनाल आयुर्विज्ञान और प्रौद्योगिकी संस्थान

तिरुवनन्तपुरम, केरल - 695 011

SREE CHITRA TIRUNAL INSTITUTE FOR
MEDICAL SCIENCES AND TECHNOLOGY, TRIVANDRUM

Thiruvananthapuram - 695011, Kerala, India

(एक राष्ट्रीय महत्व का संस्थान, विज्ञान एवं प्रौद्योगिकी विभाग, भारत सरकार)

(An Institution of National Importance, Dept. of Science & Technology, Govt. of India)

शैक्षणिक कार्यक्रम

ACADEMIC PROGRAM

एमटेक बायोमेडिकल इंजीनियरिंग

MTECH BIOMEDICAL ENGINEERING

सूचीपत्र

PROSPECTUS

जुलाई सत्र-2024

JULY SESSION – 2024

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1. Introduction

The National Medical Devices Policy 2023, approved by the Union Cabinet of India on 26th April 2023, is expected to help the Indian medical devices sector grow from the present $ 11 billion to $ 50 billion in next five years. The policy aims to build an innovative and globally competitive industry in India. It encourages research, development, and adoption of cutting-edge medical technologies. It is designed to foster innovation and enhance the quality of manpower in India's medical device sector. By fostering innovation, the policy ensures that India remains at the forefront of medical device advancements. Quality manpower ensures the effective implementation of policies and the delivery of safe and reliable medical devices. By supporting quality manpower development, the policy contributes to better healthcare outcomes for patients.

Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST), located in Trivandrum, Kerala, India, has made significant contributions to medical device development in the country. As an **Institution of National Importance** with the status of a university under the **Department of Science and Technology, Govt. of India**, by an Act of Parliament (Act 52 of 1980), SCTIMST has a rich legacy of pioneering the convergence of medicine and technology in India.

Some notable achievements of SCTIMST in the field of medical device development is given below:

1. **Heart Valve**: SCTIMST successfully developed and transferred technology for a **mechanical heart valve prosthesis**. This life-saving device has been widely used in cardiac surgeries.

2. **Blood Bag System**: The institute played a crucial role in establishing a medical device industry base in India by creating the **disposable blood bag system**. This innovation has significantly improved blood transfusion practices.

3. **Blood Oxygenators**: SCTIMST developed and transferred technology for **blood oxygenators**, essential devices used during cardiopulmonary bypass surgeries.

4. **Concentric Needle Electrode**: SCTIMST pioneered the development of the **concentric needle electrode**, a critical tool for electromyography (EMG) studies.

5. **Hydroxyapatite-based Bioceramic Porous Granules**: These granules, developed by SCTIMST, find applications in orthopedic and dental surgeries.

6. **Intrauterine Device (IUD)**: SCTIMST contributed to the development of an IUD, a widely used contraceptive method.

7. **Vein Viewer**: The institute's research led to the creation of a **vein viewer**, aiding healthcare professionals in locating veins for intravenous procedures.

8. **RNA Isolation Kit and Multiplex RT PCR Kit**: SCTIMST developed kits for RNA isolation and multiplex reverse transcription-polymerase chain reaction (RT-PCR), crucial for molecular diagnostics.

9. **TIMed (Medical Devices Incubator)**: SCTIMST established **TIMed**, a medical devices incubator, fostering innovation and collaboration between researchers, industry, and entrepreneurs.

These achievements demonstrate SCTIMST's commitment to advancing healthcare through cutting-edge medical technologies. The institute continues to focus on research, training, and public health initiatives, making it a beacon of excellence in the field of medical sciences and technology in India.

The joint culture of medicine and technology that the Institute pioneered more than four decades ago has come of age and has gained unprecedented acceptance in India. The Institute also focuses on advanced super-specialty postgraduate training programs in medical specialties and health research of social relevance, and the development of high-quality medical devices and technology of industrial significance. The emphasis is on the development of activities less readily available in the country, such as interventional radiology, interventional stroke care, cardiac electrophysiology, advanced cardiothoracic and vascular surgery, management of epilepsy and movement disorders, micro-, spinal and endoscopic neurosurgery, development of new biomedical devices and products, evaluation of medical devices to global specifications, novel academic programs, and health science research and training.

The Institute has three wings – the Hospital Wing, the Biomedical Technology Wing, and the Achutha Menon Centre for Health Science Studies Wing. Excellent research and learning opportunities are available at these wings. The Institute has a dedicated team of clinicians, scientists and engineers devoted to high-quality medical research, biomedical research, technological development and public health research.

The Institute's objectives are to:
- Promote biomedical engineering and technology.
- Provide and demonstrate high standards of patient care in advanced medical specialties.
- Develop innovative postgraduate training programs of the highest quality in advanced medical specialties, as well as in biomedical engineering and technology.
- Participate in public health reforms through research, training, and interventions.

The Sree Chitra Tirunal Institute for Medical Sciences & Technology Act, 1980, empowers the Institute to offer post-graduate programs in medical sciences, public health and biomedical engineering. To promote the above-specified objectives, the institute now offers post-graduate teaching and training in biomedical sciences and technology through an MTech program.

2. About the MTech Program

2.1. Scope of the Program

Medical devices play an important role in modern healthcare. There is a huge and growing demand in India as well as across the globe for medical devices. India, being one of the major users of medical devices and implants, depends on imports for over 80% of its needs. The nation is striving to expand its capabilities and human resources in medical devices and implants and become self-sufficient. Data-driven medical diagnosis and treatment is an upcoming area that uses information technology to provide customized and accurate treatment. The Government of India has introduced a Production Linked Incentive scheme in medical device manufacturing to encourage domestic manufacturing, attract significant investments, reduce reliance on imports, and attain self-sufficiency (Atmanirbhar Bharat) in this industry segment as well. To achieve this goal, trained manpower is required, especially in the area of medical devices, biomedical science and technology, and their design, testing and validation. To meet this imminent demand, focused courses and training in Biomedical Engineering are to be implemented. This Master of Technology (Biomedical Engineering) course has been conceived with this background.

This course imparts knowledge and training in Biomedical Engineering with a focus on developing medical devices in the domains of Cardiovascular, Neurological, Orthopaedic, and Orthotic devices with a view to innovating solutions meeting performance, safety, and regulatory criteria. Biomedical signals and imaging and their importance in diagnosis and treatment are also covered. The specialized engineering skills required are imparted through short-term course projects wherein the student is trained to use scientific and technical knowledge and state-of-the-art tools to create an innovative solution. The whole gamut of medical device development from identifying user needs, interacting with clinicians and patients and identifying their requirements, choice of design and materials, modelling and simulation, testing and validation, in vivo models, to clinical trials are covered during the course. The importance of innovation and intellectual property are also introduced. The student will be well poised with this course to take up roles in industry, research as well as academia.

2.2. Program Description

Advanced knowledge in engineering principles, science, technology and its practice in Biomedical engineering will be provided by the course. Emphasis is on providing a comprehensive understanding of the medical device development lifecycle. This includes identifying user needs from the perspective of clinicians, users and patients, their design and development, validation, regulatory requirements, translation and manufacturing. The course will also address the choice and selection of biomaterials for various applications. Biomedical signal and image analysis will also be covered and equip the student towards modern data-driven systems for diagnosis and treatment. The course aims to equip scholars to individually research, innovate and develop medical devices using a needs-based approach, manage risks, achieve performance as well as safety, successfully build, prototype and test, generate intellectual property and communicate their work effectively under a quality management framework.

3. Learning Objectives

(i) Medical Devices – what, risks, safety, performance, quality, standards, regulatory mechanisms.
(ii) Biomaterial selection and evaluation for various applications.
(iii) Biomechanics, Biosignals and Medical Imaging
(iv) Design and Design Optimization – user needs, analysis, CAD, simulation, computational methods.
(v) Prototyping, Design verification and validation, Translation, Manufacturing
(vi) In depth design principles of cardiovascular, electromechanical, polymeric, orthopaedic, and orthotic devices, instrumentation and biomedical signals and images.
(vii) Quality management systems, Innovation, Intellectual property, effective communication and management skills.

4. Course Structure

The structure of the program is detailed below:

- MTech Biomedical engineering curriculum is interdisciplinary and is of 4 semesters duration.
- Each academic year has 2 semesters of roughly 15 weeks each (5 days working weeks, omitting the days of evaluation/exams).
- The courses will consist of CORE courses in Biomedical engineering, and is common to all students in semester one.
- Specialisation core courses will be offered in second semester and Electives will be chosen based on the student's research interest under the guidance of the Research Advisor.
- In the first year the students to get a practical exposure to Biomedical engineering, would have to do two laboratory internships.
- MTech program sets aside the last two semesters for mentored thesis research. Students will start working on a research area in the third semester of study under the supervision of a guide. Research will be supervised by a Research Advisory Committee (RAC) composed of Research Advisor/Guide (or Mentor), Co–Advisor and a nominee of the Head of Department as ex–officio member. The guide may initiate the steps to constitute RAC which may be recommended by Head of Department and approved by the Dean (Academic affairs). Scholars are expected to carry out their research activity on campus. Research work off-campus will be permitted to sponsored candidates in case an MoU exists that directly facilitates academic activities.
- For identifying research problems, the students are encouraged to contact clinicians, industries including startups, in case an MoU exists with the organisation for collaboration.
- The research area could be an unmet clinical need identified with the help of a clinical faculty or a resident. This unmet need must be researched in depth to arrive at a solution. The Co-Advisor could be a clinical faculty associated with the clinical resident who is also working simultaneously on the clinical aspects in the same area.

- The medium of instruction, examination and project report for all courses is English. The syllabi and curricula of the program are subject to revision from time to time. On course commissioning a Syllabus Revision Committee (SRC) will be formed from participating faculty under the Head of Department. SRC will meet once a year and recommend changes in syllabus and course systems for incoming admissions as necessary. Recommendations from SRC on the course conducted in the department will be passed on to the Academic Affairs for approval through proper channel for implementation.
- Currently maximum number of students admitted would be 10, considering the faculty strength, lab space and facilities. Four seats can be reserved for sponsored candidates. A "No Objection Certificate" from their employers indicating grant of permission to undertake course and commitment to meet expenses will be required.

5. Mode of Selection

The candidates will be selected based on the performance in the following:

(i) **Statement of Purpose** submitted by the prospective student.

(ii) **A. Research assistantship category:** Shortlisting based on marks in the qualifying examination and valid GATE score / score in the National level entrance exam like NEET for MBBS/BDS/MVSc, as specified in section 6.III below.
B. Sponsored candidates: Shortlisting based on the marks in the qualifying examination.

(iii) An institute level test and subsequent interview. The test will be conducted in two streams, namely, engineering stream and non-engineering stream.

6. Eligibility Requirements

Candidates with a CGPA above or equal to 6.5 (or equivalent marks) in the undergraduate level in the following categories are eligible for admission to the course.

I. B.E./B.Tech. /AMIE or equivalent in following disciplines with valid GATE score

- Biomedical Engineering
- Biotechnology
- Chemical Engineering
- Computer Science and Engineering/ Information Technology
- Electrical Engineering
- Electronics/Telecommunications Engineering
- Engineering Physics
- Instrumentation Engineering
- Mechanical Engineering
- Metallurgy & Materials Science
- Pharmaceutical Technology
- Polymer Technology
- Other Branches of Engineering

II. M.Sc. or equivalent in following disciplines with valid GATE score

- Biochemistry
- Biophysics
- Biotechnology
- Ceramics
- Chemistry
- Electronics / Electronic Sciences
- Ergonomics
- Materials Science
- Mathematics
- Molecular Biology
- Physics
- Physiology
- Other Branches of Science

III. Health Sciences with all National level post graduate entrance examination for the disciplines like NEETPG, NEETMDS, etc.

- MBBS
- BDS
- BPharm
- BVSc
- B.P.Th., B.O.Th., B.ASLP, Pharm D (Eligible only if the duration of these courses are 4 years or more).

All India level post graduate entrance examination for corresponding disciplines such as INI_CET/NEETPG/ NEETMDS JIPMER/PGI Chandigarh/ AFMC Pune/DNB Part I, AIIPMR for MBBS / BDS, GPAT/ All India level selection examination for BPharm, All India level post graduate entrance examination such as AIIPMR for MVSc., M.P.Th., M.O.Th. and M.ASLP. GATE examination for all such health science background where applicable.

Eligibility/rank certificates for all such national level entrance examinations are required. The candidate should have qualified the entrance examinations (as per the qualification criterion of the respective **exam** for that exam year and category) and the score obtained should be valid (as per the duration of validity for the respective exam) at the time of application to the MTech program.

6.1. Overseas Students

Selection will be based on educational qualifications, professional experience, the sponsoring organizations' assessments, and a telephonic interview. Applicants are required to submit two confidential reference letters while submitting the application form. Also, the candidates have to provide certification for proficiency in English.

7. Number of Seats and Duration of the Program

Duration and commencement of the program: MTech Biomedical Engineering is a four-semester program commences on 1st July 2024.

Reservation: Reservation is applicable for selection as per the Government of India norms.

- **Number of seats:** 10 (ten), (out of ten, four seats are reserved for sponsored candidates, A 'No Objection Certificate' from their employers indicating permission to undertake the program and commitment to meet expenses will be required).
- **If sponsored candidates are not available, then the seat reserved for sponsored candidates will be filled with other eligible candidates.**
- A reservation roaster has been prepared and for the July 2024 session these 6 seats will be distributed as given in the table below:
- If candidates in ST category is not available that seat will be filled with SC candidates and vice versa. If candidates in the reservation category is not available, that seat will be filled with UR candidates.

Seats as per roaster when:	UR	OBC	SC	ST	EWS
Non-sponsored = 6 Sponsored = 4	5	1	0	0	0
Non-sponsored = 10 Sponsored = 0	6	2	1	0	1

8.   Categories of Admission and Financial Support

The institute will admit students under the following categories:

8.1.   Research Assistantship

Six students will be admitted in this category. An amount of Rs. 12,400/- per month will be paid for GATE/ other national Eligibility test qualified candidates for a period of 24 months. Students receiving assistantship should work in laboratories specified by the department for at least 8 hours per week. Amount will be released based on the attendance in the lab work. In case, sponsored candidates do not join in this academic year, then unfilled sponsored seats will be filled with non-sponsored candidates and research assistantship will be given as mentioned above.

8.2.   Sponsored Candidates

Academic institutes, research institutes and industries can sponsor candidates for the program. Four seats are reserved for sponsored candidates. GATE or National level eligibility test is not mandatory for sponsored candidates.

9.   Fee Structure

Admission Fee (₹)	
Application fee	1,500 *
Admission fee	1,000
Caution deposit	10,000

Library	1,000
Student welfare fund	1,000
Miscellaneous fee (Identity card, etc.)	500
Total (A)	**15,000**
(-1200 for SC/ST category candidates*	

Tuition Fee (₹) – To be paid semester-wise	
Semester 1	25,000
Semester 2	25,000
Semester 3	25,000
Semester 4	25,000
Total (B)	**1,00,000**

Exam Fee (₹)	
Semester 1	1,000
Semester 2	1,000
Thesis evaluation	5,000
Total (C)	**7,000**

Total Fee for the MTech BME program (A+B+C) = ₹ 1,22,000 (INR One lakh twenty-two thousand only).

10. Accommodation

Limited hostel facilities on a shared basis are available for students on a payment basis.

11. Important Dates

Admission notification	**1st March 2024**
Availability of online application	**Up to to 31.03.2024 (5.00 pm)**
Call letter Download	**Admit cards will be available on the website for download ten days before the date entrance examination/interview.**
Date of Entrance Examination	**18th May 2024**
Date of interview	**05th June 2024**
Locations of Entrance Examination	**Thiruvananthapuram, Mumbai, New Delhi, Kolkata and Chennai.**
Date of interview	**05th June 2024**
Commencement of the program	**1st July 2024**
Venue of Interview	SCTIMST, Thiruvananthapuram.
Candidate needs to indicate the order of their preference for all centres of examination. If a centre gets cancelled, the candidates will be reassigned to the centre of their second/ third choice. This will happen if there are less than ten candidates for a centre or in case of any other	

eventualities. The institute reserves the right to cancel any centre/location of examination listed above.

The institute WILL NOT bear the expenses of the candidates for appearing the interview.

The final selection list will be published on the SCTIMST website and notice board.

12. Course Curriculum

12.1. Program Requirements

MTech (Biomedical engineering) program follows a credit-based system for the successful completion of the degree program. Each course is assigned credits, and continuous assessment is used to assign a letter grade to a student enrolled in that course based on a relative grading scheme. A cumulative grade point average (CGPA) is calculated using the student's letter grades. The following are the minimum requirements for the award of a MTech degree:

- Each student should acquire a minimum of **75 credits** for MTech program.
- All the courses of the first year must be successfully completed.
- Successful completion of the thesis by research is mandatory for the award of the MTech degree.
- Scholars shall be encouraged to attend conferences / seminars in the area of their work by Mentor.
- A prepared manuscript for publication and / or patent application is to be submitted with thesis.

12.2. Coursework and Assessment

The progress of the students will be assessed using:

(i)   Written reports
(ii)   Oral presentations
(iii) Laboratory reports
(iv)   Examinations
(v)   Thesis

12.3. Assessment Guidelines

(i)   Marks for courses will be awarded on the basis of written assessment and internal assessment.
(ii)   Admission to written assessment (or written examination) is restricted to students who secure 80% attendance. Lack of attendance due to medical grounds will be condoned on production of a medical certificate from a licensed medical practitioner. Written assessment will be for 60% to 80% of the total marks allotted for the course.
(iii) Internal assessment Assignments: At least one oral presentation will be assigned based on subject area and one assignment in written / typed form. 20-40 marks per module is assigned to the same. 10-15 marks for oral presentation / seminars and 10-25 marks for

project work. Marks can be further allotted based on presentations and assignments by faculty. For example, 100 marks is total mark available for assessment to obtain 3 credits for a particular course. Then 60 - 80 marks will be allotted to written exam and 20 - 40 marks will be allotted to internal assessment.

(iv) Academic Review: Scholars should be made aware that academic activity will be reviewed thoroughly, and plagiarism or unethical practices will not be tolerated in any form. In case of unethical activity, adverse reports on plagiarism analysis the mentor of the student, RAC & HOD shall be notified. Further action as required will be recommended by the RAC.

(v) Thesis: This shall be a comprehensive document covering research work from inception, literature review to reporting of results. Format of MTech thesis and guidelines as published with updates from time to time on SCTIMST website should be followed.

(vi) The Thesis will be evaluated by two examiners nominated by the HOD as well as the research mentor.

(vii) Submission of thesis will be on the last working day of the penultimate month of the 4th semester. This will provide a three-week window for DAA to provide it for review and gather comments from two examiners before the *viva voce*.

12.4. Assessment Criteria & Evaluation

PERCENTAGE OF MARKS	LETTER GRADE
90 and above	S - Outstanding
80 to < 90	A - Excellent
70 to < 80	B - Very Good
60 to < 70	C - Good
50 to < 60	D - Satisfactory
40 to < 50	E - Poor
<40	F - Fail
Incomplete	I
Withdrawal	W

12.5. Marks Awarded for Courses

For each course the maximum marks awarded on evaluation would be 100 and this may be gained through the following ways of assessment:

- o   Written Exam   : 60 - 80 marks (each course exam)
- o   Seminars/Assignment   : 10 - 15 marks (each course)

o Course Project	: 10 - 25 marks (each course)
Laboratory Internship	: 100 marks (each report and presentation)
Marks for Research Project Report (mentor)	: 70% (assessed by Monitoring Committee including the
Marks for Research Thesis Viva	: 30% (based on the defence of the thesis)

12.6.   Grade Points

GPA - Grade Point Average, Semester wise – SGPA, Cumulative - CGPA

$$GPA = \frac{\sum_i(C_i . GP)}{\sum_i C_i}$$

where C_i is the credit of the course;

GP is the grade point of that course, and $\sum_i$ is the sum of the credits of all registered courses successfully cleared during that semester.

Letter Grades

Grade	Grade points
S	10
A	9
B	8
C	7
D	6
E	4
F	0

Attendance Code

Attendance rounded to	Remarks	Code
≥ 95%	Very good	VG
85 - 94%	Good	G
< 85%	Poor	P

For converting GPA into percentage, use the formula:

'Percentage = 55 + 10 (GPA - 6)'

Grades 'S' to 'E' indicate successful completion of the course

12.7. Essentials for Completing Courses

(i) Students are expected to attend all the classes. Students with overall 80% attendance or above will only be permitted to write the end semester examination. Attendance will be recorded in every class.

(ii) To attend the following semester a student must have completed ALL prerequisite courses (if any) with an E grade or better.

(iii) A student with an F grade in a course may be given a repeat final examination. An F grade may be improved at best to a E grade as a result of the repeat final exam. Under-performing students may be given remedial classes before the repeat final examination.

(iv) Repeat of a course is not permitted if the student has obtained a grade E or above in the same course.

(v) The incomplete grade I is a transitional grade which will be given to the students who miss the end semester examinations under exceptional circumstances (e.g., serious medical reasons) as determined by the MTech course coordinator in consultation with the Head of Department (if applicable) and approved by the Dean (Academic Affairs). Make-up examination will be given to these students provided they meet 80% attendance and other academic requirements as per the rules and regulations of the institute. The actual grade obtained after the make-up examination will be taken and will reflect in the transcript replacing the I grade. In case a student obtains an F grade in the make-up final examination, he/she will be eligible to write the repeat final examination. Absence in the make-up examination will automatically lead to zero marks in that examination and the final grade in that course will be determined based on the other examinations taken in that course. If the absence of a student in an examination is not approved by the Dean (Academic Affairs) (e.g., a deliberate attempt to skip the examination), he/she will be awarded zero marks in that particular course examination. The final grade in that course will be determined based on the other examinations of that course taken by the student.

(vi) Withdrawal of a registered course in a semester is usually permitted/enforced under very special cases, e.g. due to prolonged illness. W grade is given in these circumstances and the student is asked to repeat the concerned course with same course number taking all examinations when offered next. The new grade obtained by the student will be taken into consideration and appear in the transcript. However, the previous W grade will also appear in the transcript.

(vii) W grade will not have any effect in the calculation of CGPA. If a student has W grade in a registered course in a particular semester, CGPA will be calculated based on the grades obtained in other courses of that semester.

(viii) If a student does not clear a CORE course even after writing (or skipping) the repeat final examination, he/she is required to repeat the course with the same course number when offered next taking all examinations. Until the course is repeated and passed by the student, it is treated as a backlog in the student's records. Both the grades, the new grade and the previous F grade, will appear in the grade transcripts.

(ix) An F grade obtained in a course will contribute to the CGPA until:
   i. The course with the same course number is completed with a E grade or better (applicable for foundation and core courses) OR

ii. Substituted with an alternative course of the respective Department and completed with an E grade or better (applicable only for minor/elective/additional courses).

(x) A maximum of one backlog course from the first year may be allowed, at the discretion of the Dean (Academic Affairs) and the Director, before a student can choose a major and proceed to the second year.

(xi) A student who has more than two F and/or W grades in a particular semester of the first four semesters will have to repeat ALL the courses of that semester. Only the new grades obtained in all the courses will be taken into consideration and the previous grades will be converted to W grades.

(xii) The student gets elevated gradually to each semester(s) by completing / attempting all the courses of previous semester(s) by registering and writing the end semester examinations as per rule and meeting other academic requirements as per Course Diary.

13. Details of Courses and Credits

13.1. Semester-Wise Credit Distribution

Semester	I	II	Summer Internship	III	IV	Total
Credits	18	19	4	17	17	**75**

13.2. Assignment of Credits to Courses

Course Code	Course Name	L	T	P	C
SCT XXX	Course 1	2	0	2	3

L: Lecture, T: Tutorial, P: Practical /Lab, C: Credits
One lecture or tutorial hour per week for a 15-week long semester is assigned one credit.
Two laboratory/practice hours per week for a 15-week long semester is assigned one credit.

13.3. Semester-wise Distribution of Courses and Credits

SEMESTER 1

Course Code	Course Name	L	T	P	C
SCT 501	Anatomy and Physiology for Engineers #	2	1	0	
MDE 501	Immersion to Engineering and Technology #	2	0	2	3
BST 501	Biomaterials	2	0	2	3
MDE 502	Fundamentals of Medical Devices	2	0	2	3
MDE 503	Medical Device Technology	2	0	2	3
BMT 501	Research Methodology	1	0	0	1
SCT 551	Clinical attachment	0	0	4	2

Course Code	Course Name				
BMT 551	Laboratory internship 1	0	0	4	2
BMT 502	Safety in Biomedical Laboratories	0	1	0	1
	Total for Semester 1				**18**

 # Mandatory bridge course – Either one of these courses should be selected based on the educational background of the student.

SEMESTER 2. SPECIALISATION - MEDICAL DEVICES ENGINEERING

Course Code	Course Name	L	T	P	C
MDE 612	Computational Modelling in Biomedical Engineering	2	0	2	3
MDE 611	Medical Device Design and Production	2	0	2	3
	Elective 1				3
	Elective 2				3
	Elective 3				3
MDE 551	Laboratory Module	0	1	2	2
MDE 552	Laboratory internship II (Mini Project)	0	0	4	2
	Total for Semester II				**19**

SPECIALISATION - MEDICAL DEVICES ENGINEERING: ELECTIVE COURSES

Course Code	Course Name	L	T	P	C
MDE 511	Medical Instrumentation and sensors	2	0	2	3
MDE 512	Biomechanics	2	1	0	3
MDE 513	Biomedical Signal and Image processing	2	0	2	3
MDE 613	Advanced Polymer Technology	2	0	2	3
MDE 514	Orthopaedic Implant Technologies	2	1	0	3
MDE 515	Artificial Intelligence and Connected Health	2	0	2	3

SEMESTER 2. SPECIALISATION - APPLIED BIOSCIENCES

Course Code	Course Name	L	T	P	C
APB 611	Biological & Safety Evaluation	2	0	2	3
APB 612	General Pathology and Implant Biology	2	0	2	3
	Elective 1				3
	Elective 2				3
	Elective 3				3
APB 551	Laboratory Module	0	1	2	2
APB 552	Laboratory internship II (Mini Project)	0	0	4	2
	Total for Semester II				**19**

SPECIALISATION - APPLIED BIOSCIENCES: ELECTIVE COURSES

Course Code	Course Name	L	T	P	C
APB 511	Applied Biochemistry & Physiology	1	1	2	3
APB 512	OMICS (Genomics, Proteomics, Metabolomics)	2	0	2	3
APB 613	Tissue Engineering & Regenerative Medicine	2	1	0	3
APB 614	Tissue-based Medical Devices	2	1	0	3
APB 513	Fundamentals of Pharmacology	2	1	0	3
APB 615	In-vivo Functional Safety Evaluation	1.5	1	1	3

SEMESTER 2. SPECIALISATION - BIOMATERIALS

Course Code	Course Name	L	T	P	C
BST 611	Polymeric Biomaterials	2	1	0	3
BST 612	Biomaterials Processing Techniques	2	0.5	1	3
	Elective 1				3
	Elective 2				3
	Elective 3				3
BST 551	Laboratory Module	0	1	2	2
BST 552	Laboratory internship II (Mini Project)	0	0	4	2
	Total for Semester II				**19**

SPECIALISATION - BIOMATERIALS: ELECTIVE COURSES

Course Code	Course Name	L	T	P	C
BST 511	Nano Biomaterials	2	1	0	3
BST 613	Drug Delivery Systems	2	1	0	3
BST 614	Orthopaedic and Dental Materials	2	1	0	3
APB 615	In-vivo Functional Safety Evaluation	1.5	1	1	3
APB 613	Tissue Engineering & Regenerative Medicine	2	1	0	3

SUMMER INTERNSHIP

Course Code	Course Name	C
BMT 552	Industrial internships / Hospital internship/ Laboratory internship	4

Students are expected to do summer internship and submit a report for obtaining the credits. The internships may preferably be done with start-ups, industries, hospitals, research institutes, academic institutes, or laboratories of SCTIMST in the order of preference.

SEMESTER 3

Course Code	Course Name	C
TQM 501	Technology, Quality & Regulatory Management of Medical Devices	3
BMT 701	MTech Thesis Research – Work Status Report & Seminar	14
	Total for Semester 3	17

SEMESTER 4

Course Code	Course Name	C
BMT 702	Comprehensive Course Viva	2
BMT 703	MTech Thesis Research – Project Report & Viva Voce	15
	Total for Semester 4	17

13.4. Program Outcome

The program is expected to equip students with the knowledge and skills needed to identify unmet clinical needs and design medical devices. The following attributes are to be demonstrated by a graduate upon completing the program. The identified program outcome (PO) is listed below:

PO1: The ability and skills needed to identify unmet clinical needs and design medical devices.

PO2: The ability to identify appropriate materials, methods, design tools, and processes for the development, fabrication, and evaluation of medical devices.

PO3: Ability to understand methods to be followed in the biological evaluation of medical devices.

PO4: Understand the regulatory mechanisms underlying for taking a medical device to market.

PO5: Gain in-depth knowledge of the processes involved in the translation of medical technologies from concept to commercialization.

14. Curriculum and Syllabus

Curriculum and syllabus are available in the public domain. All aspirants are requested to visit the following web link to see the curriculum and syllabus (https://www.sctimst.ac.in/Academic%20and%20Research/Academic/Curriculum%20&%20Syllabus/resources/MTech_Biomedical_Engineering.pdf).

15. Application Procedure

Application form and application fee are to be submitted through ONLINE MODE ONLY through our website: www.sctimst.ac.in.

All bank charges are to be borne by the applicant.

Application fee (in Rupees): Rs. 1500 (Rs. 1200 for SC/ST candidates)

It is mandatory to bring printouts of the filled application form, original certificates to prove age, qualification, and experience **at the time of interview**, if selected, along with self-attested copies of the following documents:

a. Online payment receipt of application fee.

b. A valid Caste certificate for SC/ST/OBC (non-creamy layer) candidates (issued by revenue authorities, not below the rank of Tahsildar).

c. Eligible candidates applying under the EWS category are required to produce an EWS certificate issued by a competent authority in the prescribed format given in the annexures.

d. 'No Objection Certificate' in the case of employed/sponsored applicants in the prescribed format given in the annexures will be required.

15.1. General Instructions

1. The online application can be filled out from the date **01.03.2024 to 31.03.2024.**

2. For online application submission, please visit https://www.sctimst.ac.in/Academic%20and%20Research/Academic/Admissions/(www.sctimst.ac.in home page → Academic → Admissions → Register/Login to Fill up & Submit Application).

3. Avoid submitting multiple applications; duplicate applications from an applicant will result in the cancellation of all such applications. The candidate should fill in the online application with utmost care and follow the instructions.

4. It will be the candidate's responsibility to ensure that the correct details are filled in the online application form. SCTIMST will not be responsible for any incorrect information/cancellation of candidature/loss or lack of communication, etc., due to an incorrectly filled online application form.

5. The candidate must ensure that no column is left blank. The candidate must complete the filling of the application form in one go.

6. Candidates will also be provided with a 'Login' facility after successful registration of their application. Candidates can take the print-out of the application form from the dashboard of the Online Application Portal by entering the application number, email identity, and date of birth provided at the time of submission of the application.

7. If the applicant is an employee of a State or Central Government or Public Sector Undertaking, a 'No Objection Certificate' should be obtained from the employer prior to the submission of the online application. This certificate should be produced at the time of entrance examination/clinical, practical and viva-voce/interview.

8. The rules are subject to change in accordance with decisions of the Institute taken from time to time.

9. All correspondence will be through the registered email/mobile number.

10. The screening committee appointed by the Institute reserves the right to accept/reject an application.

15.2. List of documents to be uploaded

The list of documents to be uploaded at the time of online application are listed below: The photograph should be in jpeg format and all other documents shall be in pdf format.

1. A passport-size photograph (with white background).
2. An authentic document to prove the age.
3. Caste certificate for SC/ST/OBC (Non-creamy layer) issued by revenue authorities, not below the rank of Tahsildar (valid as per Government of India norms).
4. Documents to prove the EWS category, if applicable.
5. Documents to prove the PwD category, if applicable.
6. 'No Objection Certificate' in case the candidate is employed.
7. Certificates to prove academic qualifications and achievements.

15.3. Hall Ticket/Call Letter

Eligible candidates for the entrance examination can download the hall ticket/ call letter ten days before the scheduled date for the interview from the portal of our website www.sctimst.ac.in. Please bring this card with you for entering the interview hall.

16. Address for Contact

For more information, please contact:
> The Deputy Registrar,
> Division of Academic Affairs,
> Sree Chitra Tirunal Institute for Medical Sciences and Technology,
> Thiruvananthapuram - 695011, Kerala, India.
> Contact telephone Nos.: (0471) 2524269, 2524289, and 2524649.
> Email: regoffice@sctimst.ac.in

ACTS WARRANTING REMOVAL OF A STUDENT

The services of the student may be terminated as follows:

a. By the Director of the Institute without any previous notice if the Director of the Institute is satisfied on medical evidence that the student is unfit and is likely for a considerable period to continue unfit by the reason of ill health for the discharge of his/her duties PROVIDED ALWAYS that the decision of the Director that the student is unfit and is likely to continue unfit, shall be conclusive and binding on him/her.

b. By the Director of the Institute without any previous notice, if the student shall be guilty of any insubordination, interference or other misconduct or any breach or nonperformance of any of the provisions of the agreement, or of any rules pertaining to the Institute, PROVIDED ALWAYS that the decision of the Director of the Institute in this behalf shall be conclusive and binding on him/ her.

c. Unsatisfactory disciplinary conduct during the program at SCTIMST.

d. Furnishing willfully or knowingly false/fake particulars for admission to SCTIMST.

e. The decision of the Director, SCTIMST shall be final as to whether any Student comes within the ambit of condition (a) or (b)] above.

ANTI-RAGGING AFFIDAVIT

Ragging in all its forms is prohibited in the Institute

All candidates, at the time of admission to the Institute, will be required to furnish an undertaking in the form of an affidavit that the candidate will not indulge in any form of ragging. If the selected candidate is found to be ragging another student, the Institute may take appropriate action against him/her.

The directive of the Hon'ble Supreme Court regarding ragging will be followed strictly. As per the direction of the Hon'ble Supreme Court of India, "the Government has banned ragging completely in any form inside and outside of the campus and the Institute authorities are determined not to allow any form of the ragging. Whoever directly or indirectly commits, participates in, abets or instigates ragging within or outside any educational Institution, shall be suspended, expelled or rusticated from the Institution and shall also be liable to a fine which may extend to Rs.10,000/-. The punishment may also include cancellation of admission, suspension from attending the classes, withholding/withdrawing fellowship/scholarship and other financial benefits, or withholding or cancelling the result. The decision shall be taken by the Head of the Institution."

Prohibition of and Punishment for Ragging:

1. Ragging in any form is strictly prohibited, within the premises of the Institution and any part of SCTIMST and also outside SCTIMST.
2. Ragging for the purpose of these rules, ordinarily means any act, conduct or practice by an individual or any collective act by which dominant power or status of senior students/residents is brought to bear on students/residents freshly enrolled or students/residents who are, in any way, considered junior or inferior by other students/residents which:
   i) Involve physical assault or threat or use of physical force.
   ii) Violate the status, dignity and honor of women students.
   iii) Violate the status, dignity and honor of physically disabled/transgender students.
   iv) Violate the status, dignity and honor of students/residents belonging to the Scheduled Castes, Scheduled Tribes and other Backward Castes.
   v) Exposes students/residents to ridicule and contempt and affects their self-esteem.
   vi) Entail verbal abuse and aggression, indecent gesture and obscene behavior.
3) The Dean, Associate Dean, Registrar, Hostel Warden and HoDs of SCTIMST may conduct a suo-moto enquiry into any ragging incident and report to the Director the identity of those who have engaged in ragging and the nature of the incident. The Director of SCTIMST shall take necessary action based on the report.
   Any person aggrieved in this matter may fearlessly approach the Student Grievance and Redressal Committee/Anti-Ragging Committee/Associate Dean (Faculty and Student Affairs)/ Division of Academic Affairs of SCTIMST for a fair and concerned hearing and redressal.

UNDERTAKING BY THE CANDIDATE/STUDENT

1. I, _____S/o. D/o. of Mr./Mrs./Ms._____, have carefully read and fully understood the law prohibiting ragging and the directions of the Supreme Court and the Central/State Government in this regard.

2. I have received a copy of the MCI Regulations on Curbing the Menace of Ragging in Higher Educational Institutions, 2009.

3. I hereby undertake that-

   - I will not indulge in any behavior or act that may come under the definition of ragging,
   - I will not participate in or abet or propagate ragging in any form,
   - I will not hurt anyone physically or psychologically or cause any other harm.

4. I hereby agree that if found guilty of any aspect of ragging, I may be punished as per the provisions of the MCI Regulations mentioned above and/or as per the law in force.

Signed this ____day of _____ month of _____year

Signature

Address:_____

_____

Name:

    (1) Witness: (2) Witness:

UNDERTAKING BY PARENT/GUARDIAN

1. I, _____ F/o. M/o. G/o_____, have carefully read and fully understood the law prohibiting ragging and the directions of the Hon'ble Supreme Court and the Central/State Government in this regard as well as the MCI Regulations on Curbing the Menace of Ragging in Higher Educational Institutions, 2009.

2. I assure you that my son/ daughter/ ward will not indulge in any act of ragging.

3. I hereby agree that if he/she is found guilty of any aspect of ragging, he/she may be punished as per the provisions of the MCI Regulations mentioned above and/or as per the law in force.

Signed this _____ day of ____month of _____Year

Signature

Address:_____

_____

Name:

(1) Witness: (2) Witness:

ANTI-RAGGING COMMITTEE

1. Director - Chairperson
2. Head, BMT Wing - Member
3. Associate Dean (Student & Faculty Affairs) Member
4. HOD, Cardiology - Member
5. HOD, Neurology - Member
6. HOD, AMCHSS - Member
7. HoD, Division of Medical Devices Engineering, BMT Wing - Member
8. Mr. Anu S. Nair, Deputy Collector, Thiruvananthapuram - Member
9. Mr. Prithvi Raj, Asst, Commissioner of Police, Kerala Police - Member
10. Mr. S. Irudaya Rajan, Representative from NGO - Member
11. Mr. Sajjad Sahir J., Parent representative - Member
12. Dr. Aswin Ram S. P., Sr. Resident, DM Neuroanaesthesia - Member
13. Dr. Swasthi S. Kumar, Sr. Resident, DM Cardiology - Member
14. Mr. Willi Paul, Scientific Officer (Instruments), BMT Wing - Member
15. Mr. Suji K, Scientific Officer, Cath Lab - Member
16. Deputy Registrar - Convener and Nodal Officer

IMPORTANT CONTACT ADDRESSES

Designation	Name	Telephone No.	Email-ID
Director	Dr. Sanjay Behari	91-471 - 2524400	director@sctimst.ac.in
Head BMT Wing–I/C	Dr. Harikrishna Varma P.R.	91-471 - 2520201	headbmtw@sctimst.ac.in
Dean (Academic Affairs)	Dr. Roy Joseph	91-471 - 2520275/ 2524500	dean@sctimst.ac.in
Head AMCHSS	Dr. Biju Soman.	91-471 - 2524230	bijusoman@sctimst.ac.in
Associate Dean (PhD Program)	Dr. Umashankar P.R.	91-471 - 2520226	umashnkr@sctimst.ac.in
Associate Dean (Research & Publication Cell)	Dr. Harikrishnan S.	91-471 - 2524457	drhari@sctimst.ac.in
Associate Dean (Faculty & student affairs)	Dr. Sylaja P.N.	91-471 - 2524482	sylajapn@sctimst.ac.in
Associate Dean (Health Science Studies)	Dr. Srinivasan K.	91-471 - 2524243	ksrini@sctimst.ac.in
Associate Dean (Curriculum & Examinations)	Dr. Suneel P. R.	91-471 – 2524199	suneel@sctimst.ac.in
Registrar	Dr. Santhosh Kumar B.	91-471 - 2524150	reg@sctimst.ac.in

| Deputy Registrar | Ms. Radha M. | 91-471 - 2524140 | dreg@sctimst.ac.in |
| Asst. Admin. Officer (Academic) | Ms. Chithra T.S. | 91-471 - 2524269 | regoffice@sctimst.ac.in |

STUDENT RESERVATION & EQUAL OPPORTUNITY CELL

1.	Associate Dean (Faculty & Student Affairs)	Liaison Officer (Ex-officio)
2.	Nodal officer for scholarships to students in the Institute	Member (Ex-officio)
3.	Dr. Roy Joseph	Scientist G (Sr. Grade), BMT Wing - Member
4.	Dr. Biju Soman	Professor, AMCHSS – Member
5.	Dr. Unnikrishnan K.P.	Professor, Dept. of Anaesthesiology – Member
6.	Er. Ranjith G.	Engineer E – Member
7.	Mr. A. Imthiaz Ahamed	Parent representative
8.	Registrar	Member
9.	Mr. Sunil L., Animal Handler-A	PWD Member
10.	Ms. Deepthy Chandran A.	Student Member
11.	Dy. Registrar	Convener

HEADS OF DEPARTMENTS/DIVISIONS

Dept./Divn.	Name	Telephone No.	email-ID
AMCHSS	Dr. Biju Soman	91-471-2524230	bijusoman@sctimst.ac.in
HOSPITAL WING			
Anaesthesiology	Dr. Shrinivas V.G.	91-471-2524424	shri@sctimst.ac.in
Biochemistry–I/C	Dr. Srinivas G.	91-471-2524689	srinivasg@sctimst.ac.in
Division of Clinical Engineering	Er. Shaj Upendran	91-471-2524123	shaj@sctimst.ac.in
Cardiology	Dr. Harikrishnan S.	91-471-2524457	drhari@sctimst.ac.in
Cardiovascular & Thoracic Surgery	Dr. Vivek V. Pillai	91-471-2524660	vvp@sctimst.ac.in
Computer Division	Dr. Geetha G.	91-471-2524534	geetha@sctimst.ac.in
Transfusion Medicine	Dr. Debashish Gupta	91-471-2524476	dgupta@sctimst.ac.in
Microbiology	Dr. Kavita Raja	91-471-2524222	kavita_raja@sctimst.ac.in
Neurology	Dr. Sylaja P.N.	91-471-2524482	sylajapn@sctimst.ac.in
Neurosurgery	Dr. Krishnakumar K.	91-471-2524246	kkns@sctimst.ac.in
Nursing Education	Ms. Suja Raj L.	91-471-2524416	ins@sctimst.ac.in
Pathology-I/C	Dr. Deepti A. N.	91-471-2524605	akkihebbal@sctimst.ac.in
Imaging Sciences and Interventional Radiology	Dr. C. Kesavadas	91-471-2524220	kesav@sctimst.ac.in
For courses related to PGDMRS and ACP please contact			
Medical Records	Mr. Sivaprasad R.	91-471 2524415	smro@sctimst.ac.in
Physical Medicine and Rehabilitation	Dr. Jijo Varghese	91-471-2524623	pmrsectiondr@sctimst.ac.in
BIOMEDICAL TECHNOLOGY WING			
Head, BMT Wing –I/C	Dr. Harikrishna Varma P.R.	0471-2520201	varma@sctimst.ac.in
Assoc. Head, BMT Wing	Er. Muraleedharan C.V.	0471-2520259	muralicv@sctimst.ac.in
Department of Applied Biology	Dr. Mohanan P.V.	0471-2520266	mohanpv@sctimst.ac.in
Dept. of Biomaterials Sciences & Technology	Dr. Manoj Komath	0471-2520320	manoj@sctimst.ac.in
Dept. of Medical Devices Engineering	Dr. Ramesh P.	0471-2520225	rameshp@sctimst.ac.in
Dept. of Technology & Quality Management	Er. Balram S.	0471-2520308	balrams@sctimst.ac.in

STUDENTS GRIEVANCE REDRESSAL COMMITTEE

1.	Dr. Rakhal Gaitonde, Professor, AMCHSS.	Chairman
2.	Dr. Sanjay G., Professor, Cardiology	Member
3.	Dr. Ajai Prasad Hrishi P., Additional Professor, Anaesthesiology	Member
4.	Dr. Ramesh P., Scientist G, Division of Polymeric Medical Devices	Member
5.	Dr. Anugya Bhatt, Scientist G, Division of Thrombosis Research	Member
6.	Dr. Jissa V.T., Scientist C, AMCHSS	Member
7.	Ms. Suja Raj.L, Lecturer in Nursing	Member
8.	Mr. Tijo George, PhD student	Member
9.	Ms. Divya M.R., PhD student	SC/ST representative
10.	A student representing the Wing where the grievance has occurred to be nominated by the Dean / Director-	Special invitee

DISCLAIMER

While every effort has been made to ensure the accuracy of this information at the time of publication, addition, updates, alterations and changes in circumstances may occur between the time of publication and the time the user views the information. The Institute advises users to verify the accuracy and completeness of the information with the Academic Division in case of any doubt (0471-2524269).

FORM OF CERTIFICATE TO BE PRODUCED BY OTHER BACKWARD CLASSES APPLYING FOR ADMISSION TO CENTRAL EDUCATIONAL INSTITUTIONS (CEIs), UNDER THE GOVERNMENT OF INDIA

This is to certify that Shri/Smt./Kum. .... Son/Daughter of Shri/Smt.

.... of Village/Town

.... District/ Division

.... in the .... State belongs to the

.... Community which is recognized as a backward class under:

i.   Resolution No. 12011/68/93-BCC(C) dated 10/09/93 published in the Gazette of India Extraordinary Part I Section I No. 186 dated 13/09/93.

ii.   Resolution No. 12011/9/94-BCC dated 19/10/94 published in the Gazette of India Extraordinary Part I Section I No. 163 dated 20/10/94.

iii.   Resolution No. 12011/7/95-BCC dated 24/05/95 published in the Gazette of India Extraordinary Part I Section I No. 88 dated 25/05/95.

iv.   Resolution No. 12011/96/94-BCC dated 9/03/96.

v.   Resolution No. 12011/44/96-BCC dated 6/12/96 published in the Gazette of India Extraordinary Part I Section I No. 210 dated 11/12/96.

vi.   Resolution No. 12011/13/97-BCC dated 03/12/97. vii. Resolution No.

12011/99/94-BCC dated 11/12/97. viii. Resolution No. 12011/68/98-BCC dated

27/10/99.

ix.   Resolution No. 12011/88/98-BCC dated 6/12/99 published in the Gazette of India Extraordinary Part I Section I No. 270 dated 06/12/99.

x.   Resolution No. 12011/36/99-BCC dated 04/04/2000 published in the Gazette of India Extraordinary Part I Section I No. 71 dated 04/04/2000.

xi.   Resolution No. 12011/44/99-BCC dated 21/09/2000 published in the Gazette of India Extraordinary Part I Section I No. 210 dated 21/09/2000.

xii.   Resolution No. 12015/9/2000-BCC dated 06/09/2001. xiii.   Resolution No.

12011/1/2001-BCC dated 19/06/2003. xiv. Resolution No. 12011/4/2002-BCC dated

13/01/2004.

xv.   Resolution No. 12011/9/2004-BCC dated 16/01/2006 published in the Gazette of India Extraordinary Part I Section I No. 210 dated 16/01/2006.

xvi.   Resolution No. 12011/14/2004-BCC dated 12/03/2007 published in the Gazette of India Extraordinary Part I Section I No. 67 dated 12/03/2007.

xvii. Resolution No. 12015/2/2007-BCC dated 18/08/2010.

xviii. Resolution No. 12015/13/2010-BCC dated 08/12/2011.

Shri/Smt./Kum. .... and / or his family ordinarily reside(s) in the .... District / Division of .... State. This is also to certify that he/she does not belong to the persons/sections (Creamy Layer) mentioned in Column 3 of the Schedule to the Government of India, Department of Personnel & Training O.M. No. 36012/22/93-Estt.(SCT) dated 08/09/93 which is modified vide OM No. 36033/3/2004 Estt.(Res.) dated 09/03/2004 and further modified vide OM No. 36033/3/2004-Estt. (Res.) dated 14/10/2008 and further modified vide OM No. 36033/1/2013-Estt (Res.) dated 27/05/2013 or the latest notification of the Government of India.

Dated: District Magistrate / Deputy Commissioner/ Competent Authority

                         Seal

NOTE:

a.   The term 'Ordinarily' used here will have the same meaning as in Section 20 of the Representation of the People Act, 1950.

b.   The authorities competent to issue Caste Certificates are indicated below:

i.   District Magistrate / Additional Magistrate / Collector / Deputy Commissioner / Additional Deputy Commissioner / Deputy Collector / Ist Class Stipendiary Magistrate / Sub-Divisional magistrate / Taluk Magistrate
/ Executive Magistrate / Extra Assistant Commissioner (not below the rank of Ist Class Stipendiary Magistrate).

ii. Chief Presidency Magistrate / Additional Chief Presidency Magistrate / Presidency Magistrate.

iii.   Revenue Officer not below the rank of Tehsildar', and

iv.   Sub-Divisional Officer of the area where the candidate and / or his family resides.

 The date of issue of OBC (NCL) certificate should be within one year from the last date of application.

Government of ....
(Name & Address of the authority issuing the certificate)
INCOME & ASSET CERTIFICATE TO BE PRODUCED BY ECONOMICALLY WEAKER SECTIONS.

Certificate No_____   Date:_____

VALID FOR THE YEAR _____

This is to certify that Shri/Smt./Kumari _____ son/daughter/wife of _____ permanent resident of _____, Village/Street _____Post Office _____ District _____ in the State/ Union Territory _____Pin Code _____ whose photograph is attested below belongs to the Economically Weaker Section, since the gross annual income* of his/her "family"** is below Rs.8 lakhs (Rupees Eight Lakhs only) for the financial year_____ . His/her family does not own or possess any of the following assets***

I.   5 acres of agricultural land and above;
II.   Residential flat of 1000 sq. ft. and above;
Ill.   Residential plot of 100 sq. yards and above in notified municipalities;
IV.   Residential plot of 200 sq. yards and above in areas other than the notified municipalities.

2.   Shri/Smt/Kumari _____ belongs to the _____ caste which is not recognized as a Scheduled Caste, Scheduled Tribe and Other Backward Classes (Central List)

Signature with seal of Office _____
Name _____
Designation_____

Recent passport size attested photograph of the applicant

_____
*Note 1: Income covered from all sources, i.e., salary, agriculture, business, profession, etc.
**Note 2: The term "Family" for this purpose includes the person, who seeks benefit of reservation, his/her parents and siblings below the age of 18 years as also his/her spouse and children below the age of 18 years
***Note 3: The property held by a "Family" in different locations or different places/cities have been clubbed, while applying the land or property holding test to determine the EWS status.

(To be provided on the letterhead of the institution)

No…., Date…..

No Objection Certificate

Mr./Ms. ………………………………………………., ………….. is an employee in the Department of …………………………………………….. at ………………..He/She wishes to apply for the ……………..program of Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum. The …………………….. has no objection related to his/her undergoing the said program at……………………………… during the period from …to …………… The ………….. will sponsor him on this program.

With best regards,

(Signature of the sponsoring authority)