PROSPECTUS

M.TECH IN TRANSLATIONAL ENGINEERING

2015 ADMISSION

Introduction

M.Tech in Translational Engineering is an initiative of the Higher Education Department, in collaboration with Columbia University, New York, USA, University in Montreal, Canada, and IIT Madras. This programme is started in PPP mode, is of self-financing nature and will be operated through the Centre for Continuing Education, Government Engineering College, Barton Hill, Trivandrum. The programme is approved by the All India Council for Technical Education, AICTE and affiliated to the University of Kerala. It is an interdisciplinary Programme with a total intake of 18 candidates. The first batch of this Programme is commencing on July, 2015.

What is Translational Engineering?

"Translational Engineering is a new emerging discipline which holds its place between research and practice of all branches of engineering, translating between the abstractions of research and the practicalities of practice. This discipline will help translate the problems and concerns of practice into clear, need-based statements that can drive researchers to develop new insights.

Guiding Principles

This curriculum of M.Tech (Translational Engineering) programme (w.e.f.2015 admissions) is based on the following guiding principles:

- Need to transform the engineers into creative designers and innovators, agents of change, master integrators, technology stewards and knowledge handlers.
- Recognition of the new emerging discipline of "Translational Engineering" which focus on bridging the gap between research & practice.
- Need to enhance the ability of engineers to function better in multi-disciplinary teams.
- Need to imbibe an understanding of professional & ethical responsibility.
- Ensuring a broad education necessary to understand the impact of engineering solutions in a global /societal context.
- Need to enhance the ability to identify, formulate and solve engineering problems based on societal needs.
- Recognition of increasing stress on soft skills for engineering professionals.
- Recognition of importance of Translational Education and collaboration in the present era.

Objectives

On completion of the M.Tech (Translational Engineering) Programme, the student should:

- Have sound knowledge of the theory behind translating the language of research to that of practice and vice-versa.
- Have sound skills in the methodology of translating research into practice.
- Have experience in successful completion of a real-life project involving translational aspects, in a time bound manner.
- Be aware of professional, ethical and social issues in the engineering profession.
- Have a wide variety of soft skills like technical documentation, presentation, quality awareness, team work, global outlook etc.

This is designed as a stand-alone programme, on the completion of which the candidate should be ready to act as a responsible bridge between research and practise and can take up translational projects efficiently, without surrendering the professional ethics.

INSTITUTIONS INVOLVED

GOVERNMENT ENGINEERING COLLEGE, BARTON HILL

The **Government Engineering College, Barton Hill**, Thiruvananthapuram, was founded by the Government of Kerala, India, in August 1999. The institution is located in Barton Hill, which is two kilometers from the city Centre in Trivandrum. The institute has five major departments: Electronics and Communication, Information Technology, Mechanical Engineering, Electrical and Electronics Engineering and Civil Engineering. The college now offers five full time B.Tech degree and four full time M.Tech degree courses.

Translational Research & Professional Leadership Centre (TPLC) is established in 2013 at Government Engineering College, Barton Hill, Thiruvananthapuram (GECBH). It is a promising research center, started in collaboration with Columbia University (New York), University of Montreal (Canada), and IITM (Chennai) which focus on promoting Programmes that bridge the gap between Research & Practice.

UNIVERSITY IN MONTREAL, CANADA

The **University in Montreal** (French: **Université de Montréal**) (**UdeM**) is a public research university in Montreal, Quebec, Canada. The francophone institution comprises thirteen faculties, more than sixty departments and two affiliated schools: the ÉcolePolytechnique (School of Engineering) and HEC Montréal (School of Business). It offers more than 650 undergraduate Programmes and graduate programmes, including 71 doctoral programmes. The Times Higher Education World University Rankings of 2012-2013 ranks the University of Montreal at 84th place globally. More than 55,000 students are enrolled in undergraduate and graduate programs. It has more than 550 partner universities in 60 countries.

COLUMBIA UNIVERSITY, NEW YORK

Columbia University in the City of New York, commonly referred to as Columbia University, is an American private Ivy League research University located in the Morningside Heights neighbourhood of Upper Manhattan in New York City. It is the oldest institution of higher learning in the State of New York. Today the University operates Columbia Global Centres overseas in Amman, Beijing, Istanbul, Paris, Mumbai, Rio de Janeiro, Santiago and Nairobi.

INDIAN INSTITUTE OF TECHNOLOGY, CHENNAI

The Indian Institute of Technology Madras (IIT Madras) is an autonomous public engineering and research institution located in Chennai, Tamil Nadu. It is recognized as an Institute of National Importance by the Government of India. Founded in 1959 with technical and financial assistance from the government of the former West Germany, it was the third Indian Institute of Technology that was established by the Government of India through an Act of Parliament, to provide education and research facilities in engineering and technology.

Higher Education Department, Govt. of Kerala

A Principal Secretary to Government heads Department of Higher Education. Collegiate education and Technical Education, also comes under this Department. Directorate of Collegiate Education is the Government agency to make arrangements for starting new Government colleges, new courses and for payment of salary to the staff of aided colleges.

1. General

The duration of the M.Tech (Translational Engineering) Degree Programme is two academic years spanning four semesters. A student who successfully completes the programme will be awarded an M.Tech degree in the branch of their qualifying degree with specialization in Translational Engineering, by the University of Kerala.

2. Eligibility

2.1 The candidates for admission to M.Tech Translational Engineering programme should have passed B.Tech (in any discipline) from University of Kerala or a qualification recognized as equivalent thereto by the University of Kerala.

2.2 The candidate should have a minimum CGPA of 6.0 in a 10 point scale. If the candidate passed the B.Tech degree from a University

   a) Where credit system was not followed, he /she should have a minimum of 60 % aggregate marks.

   b) Where a different scale for the credit system was followed, linear mapping will be done to convert it to a 10 point scale.

2.3 Candidates who have passed AMIE/AMIETE examination and satisfying the following conditions are also eligible for admission to M. Tech (Translational Engineering).

   a. They must have a valid GATE score.

   b. A minimum mark of 55% for section B in AMIE/AMIETE examinations.

   c. Minimum 3 years of professional experience in the field of specialization after acquiring the qualification. The credibility of the experience will be decided by the Admission Committee for the Programme.

3. Number of seats and age limit

The total number of seats for the Programme is 18. Out of the 18 seats, 10 seats is reserved for sponsored candidates from Government sector/Indusry/NGO.

Usual reservation for SC/ST students as admissible under Kerala University norms are applicable. If the prescribed number of candidates are not available for the specific category, it will be filled with the candidates from the other category after 3 notifications. This applies to sponsored, non-sponsored and SC/ST category. The maximum age limit for applying to this programme is 46, irrespective of all categories.

3. Venue

Venue: The Venue of the Programme is Government Engineering College, Barton Hill, Trivandrum.

4. Fees:

Fees: The course fee for the Programme is **Rs. 75000/- per semester,** which is uniform for all categories.

5. Admission

Admission to the M. Tech Translational Engineering Programme is made on the basis of total marks obtained for the qualifying examination (40%), the marks obtained in the entrance test (50%) as well as marks for the interview (10 %). This is applicable to all categories of students.

6. Syllabus of the Entrance Test

The test comprises of 100 objective questions of 1 mark each. The duration of the test is 90 minutes. There is no negative marking for a wrong answer.

The question paper consists of three sections:

1. General Knowledge, Social awareness, Communication skills & Engineering Aptitude (30 Marks)

2. Government schemes (Centre & state), National & State Policies (20 Marks)

3. Basic Subject knowledge in the area of specification, as per B.Tech syllabus - Kerala University in respective disciplines (50 Marks)

The venue of the entrance test is GEC, Barton Hill.

SEM1	Course	Credits
TRC101	Advanced Mathematics for Engineers	3
TRC102	Responsible Engineering	3
TRC103	Introduction to Translational Engineering	3
TRC104	Translational Research	3
TRC***	One core subject out of 4 core subjects offered Group 1	3
TRC***	One core subject out of 4 core subjects offered Group 2	3
TRC111	Seminar	2
TRC112	Simulation and modeling lab	1
	Minimum credits in semester-I	**21**

SEM2	Course	credits
TRC201	Engineering Project Management	3
TRC202	Data Analysis & Analytics	3
*	Elective – I	3
**	Elective –II	3
***	Department Elective	3
TRC2000	Research Methodology	2
TRC2101	Translational Engineering Lab	1
TRC2102	TE case study seminar	2
TRC2103	Thesis Preliminary Part 1	2
	Minimum credits in semester-II	22

In the second semester students have the option to choose electives in their area of specialization from among the elective subjects approved by the Kerala University for other M.Tech programmes.

SEM3	Course	Credits
TRC3100	Internship	0
*	Stream Elective - III	3
**	Stream Elective - IV	3
***	Interdisciplinary elective	3
TRE312	Thesis preliminary Part 2	5
	Minimum credits in semester-III	**14**

There is a six week internship programme at the beginning of the 3rd semester, which can be done at collaborating institutes of the Programme or in any other reputed Institutes/ Departments. The credits can be transferred if the coursework is done outside KU, subject to provisions of relevant regulation of KU and if approved at the beginning of second semester.

SEM4	Course	credits
TRC4101	Thesis	12
	Minimum credits in semester IV	**12**
	MINIMUM CREDITS to be earned for ALL SEMESTERS	**69**

IMPORTANT DATES

Registration of application form will open on	**08-05-2015**
Last date for application	**05-06-2015**
Date of Entrance exam and Interview	**18-06-2015**
Publication of Results	**20-06-2015**
Date of joining	**20-07-2015**
Commencement of Classes	**22-07-2015**

HOW TO APPLY

The application form can be downloaded from the TPLC website: *tplc.gecbh.ac.in*

The application fee is Rs.500/- for GEN/OBC/OEC and Rs. 250/- for SC/ST. The fee can be paid by **ANY ONE** of the following methods.

1) By Cash – In TPLC office at Government Engineering College, Barton Hill.
2) Demand Draft – In favor of Principal Government Engineering College, Barton Hill.
3) Online Banking- TPLC Account No: 67314066447 , IFSC Code: SBTR0000415

CONTACT US

Dr. Suja R

Programme Coordinator

Translational and Professional Leadership Centre [TPLC]

Government Engineering College

Barton Hill

Thiruvananthapuram – 695035

Website: *tplc.gecbh.ac.in*

E-Mail: *tplc.gecbh@gmail.com*

Phone/Fax: 0471-200484