



M Phil IN REGENERATIVE MEDICINE AND TRANSLATIONAL SCIENCE

2 Year MPhil course in Regenerative Medicine and Translational Science at School of Tropical Medicine, Kolkata

Background and Rationale

Regenerative Medicine (RM) is a branch of medical science which studies the replacement or regeneration of human cells, tissue and organs, to counter chronic diseases that debilitate organs and hence bodily function. It includes biomedical approaches to clinical therapies that may involve the use of stem cells by injection of stem cells or progenitor cells. It may also be done by inducing regeneration by biologically active molecules, or by transplantation of in vitro grown organs and tissues through tissue engineering.

RM is an exciting new field that holds much promise for generating innovative therapies for a wide variety of diseases and disorders. RM focuses on harnessing the body's own repair mechanisms to replace or heal damaged tissues and organs. This field has the ability to touch every ailment, ranging from cancer to heart disease to nervous disorders. This multidisciplinary field incorporates stem cell biology, tissue engineering, biomaterials engineering, and transplantation science. In addition, it also includes various enabling technologies and clinical application areas, with the ultimate goal of improving patient lives.

COURSE OBJECTIVE

The principles and methodologies associated with RM and stem cell biology and technologies will be addressed in this interactive course; it will also highlight how RM is translated and implemented into patient care. A student will be eligible for the MPhil course in Regenerative Medicine after successfully completing the two year course as per curriculum and required examinations as per rules. Successful candidates will also be given preference for enrollment in the PhD programme in Regenerative Medicine and Translational Science.

The course objectives are:

- 1. To spread knowledge about this newly emerging field of medical science, which holds immense potentialities for future clinical therapy.**
- 2. To explain the principles and clinical application of stem cell therapy for regenerative purposes.**
- 3. To promote theoretical and practical knowledge on the subject.**
- 4. To teach stem cell biology and the application of technologies therein.**
- 5. To develop research skills.**
- 6. To promote independent/group project work.**

Teaching-Learning Methods:

Course Coordinator: Dr.Niranjana Bhattacharya, D.Sc, MD, MS, FACS, FICS, FICOG, FSOG (Head, Department of Regenerative Medicine and Translational Science, Stem Cell and Progenitor Cell Research).

Global stalwarts in the field of Regenerative Medicine who were involved in formulation, instruction and execution of the previous edition of the course included:

1. Prof Curtis Cetrulo, ex HOD, Ob/Gyn, Tufts University
2. Prof David Harris, University of Arizona
3. Prof Ian McNiece, MD Anderson Hospital
4. Prof Himansu Basu, Ex Vice President, RCOG

- (1) The course combines lectures, tutorials with hands-on experiments, demonstrations.
- (2) The course joins together a unique group of renowned international experts with the aim of exchanging scientific knowledge on cells, biomaterials and strategies for tissue regeneration. Attendees will also have the opportunity to discuss ideas directly with the resource persons.

The course is offered at the postgraduate level. Candidate aspiring to join the course must have any of the following degrees:

- (1) **MBBS (for Doctors), MSc in any branch of Life Science /M Tech Biotechnology /BDS/BVSc or equivalent degree and background; Students with Clinical Embryology and other paramedical courses and a minimum of 50% marks in aggregate, are also eligible.**
- (2) Students will be admitted on the basis of a Theory exam/ Viva to assess research aptitude / or other examination method as decided by the university from time to time.

(3) All students who successfully completed the FRMTS Course will get preferential treatment in admission.

(4) **CITIZENSHIP:** Indian nationals can apply under the General Category. Foreign nationals or Non Resident Indians or Indian nationals supported by NRI relatives can apply under the Foreign/NRI Category.

No. of seats : 30 (Thirty)

Duration of Course : 2 (two) years

Course Structure:

Brief Timeline: 1st Yr to 2nd year (To be completed in not < 7 months & not > 9 months per yr x 2)

(1) REGISTRATION & WELCOME TO THE COURSE

(2) (Post-registration) CONTINUOUS ASSESSMENT Class Room (CR) Sessions 8 CR Modules 150 hrs/yr X 2 yrs)

(3) Distance Learning (DL) Sessions 4 DL Sessions 20 hrs

(4) Log Book (LB) Writing

(5) Lab Observation / Hands-on (Practicals)/Clinical ward study

(6) Group Dynamics and Practical Sessions

(7) 4 Group Dynamics 80 hrs

(8) Dissertation Work (2yrs) (Simultaneous) Subjects are to be selected by the learner 150 hrs

To be completed in 2yrs

(9) Continuous and SUMMATIVE ASSESSMENT

To be completed in not > 2 yrs, Internship Assignment (2yrs)

FINAL EVALUATION

Award of Degree after two years of intensive training both theoretical and practical, hands on advanced research and basic understanding of research in all allied field and successful completion of internship, justifying the thesis of his choice, and eventually completing successfully the theory, practical and Viva conducted by the University. A provisional structure of the 8 classroom modules (150 hours/yr X 2yrs) of the curriculum is given below.

Age Limit : No upper age limit

Method of Selection :

Selections for MPhil is through a 3 – stage performance evaluation:

Stage I: Candidates will appear for an entrance examination (theory test) for 90 marks of 90 minutes duration in the subject. The result will be displayed the following day on the Notice Board of Examination Section. No individual communication will be sent. Special preference would be given to students who have successfully completed the Fellowship in Regenerative Medicine and Translational Science.

Stage II: Based on the performance in the theory test (stage I), candidates will be called for Departmental clinical assessment on the third day to assess the suitability of the candidate, keeping in view the practical knowledge of the candidate, ability to attain the high academic level in the discipline and aptitude for research and teaching. A maximum 90 marks have been determined for Departmental clinical assessment.

Stage III: Those candidates who secure 50% marks (out of 180 marks) or above in theory plus Departmental clinical assessment will be finally interviewed on the fourth/fifth day by the selection committee under the chairmanship of HOD Regenerative Medicine and Translational Science. A maximum of 20 marks have determined for the interview. Candidates who fail to attend any of the three stages mentioned above or secure less than 50% aggregate marks in the above three stage performance evaluation, will not be considered for admission.

Eligible international applicants will be interviewed through Skype

Course Fees:

Rs. 3,00,000/= only, which includes registration fee, tuition fee, distance learning (online) charges, examination fees, library fee, course kit for 2 yrs.

50 percent is to be paid at the time of admission.

Opportunities: (a) Full-time Course : The duration of the full-time M Phil course shall be 24 months. If an M Phil student is unable to complete his dissertation within this period, he will be allowed to do so within an additional period of one year.

The last date of MPhil application is 26th September 2014.

Stipends may be provided to eligible candidates as per government rules and regulations (this is shown in the ad)