

PROSPECTUS  
OF  
Non-Stipendiary  
Ph.D. PROGRAMME  
IN  
ENGINEERING EDUCATION  
*(Inter-disciplinary)*  
*Part-time/ Full time*

**NATIONAL INSTITUTE OF TECHNICAL  
TEACHERS' TRAINING AND RESEARCH,**  
*(Established by the Ministry of Human Resource Development,  
Government of India)*  
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## **1.0 ABOUT N.I.T.T.T.R., CHENNAI:**

### **1.1 INTRODUCTION:**

The National Institute of Technical Teachers' Training and Research (NITTTR), Chennai is one of the four autonomous organisations established by the Ministry of Human Resource Development, Government of India, with a chief aim of improving the quality of technical education in India. Established in 1964, this Institute has devoted itself to the training of teachers from Polytechnics and Engineering colleges in Southern Region comprising the four States of Andhra Pradesh, Karnataka, Kerala and Tamilnadu and the Union Territory of Pondicherry. The Institute has conducted a variety of long-term programmes such as Diploma in Technical Teaching (Dip. T.T.), Diploma in Science Teaching (Dip. Sc.T), Diploma in Teaching of English for Specific Purposes (Dip.TESP), Post Graduate Diploma in Teaching of Computer Science and Applications (PGDTCA), Bachelor of Technical Education (B.Tech.Ed.) and Master of Technical Education (M.Tech.Ed. and M.Tech.-HRD), Certificate in Professional Development for Engineering College Teachers, Advanced Certificate in Curriculum Design and Instructional Material Development for Overseas Teachers (Ad.Cert.CD & IMD), Certificate in Technical Teaching (Cert.T.T.) and Certificate in Educational Technology (Cert. E.T.)

Short courses of one to four weeks duration are also conducted in the areas of demand identified year after year. Curriculum Development, Instructional Materials Development, Educational Media Development, Computer Applications including Software Development and System-oriented projects, Educational Technology, Guidance and Counselling, Vocational Education and Training and Community Polytechnic Scheme are some areas of work added gradually over the last 40 years. Educational Research had a humble beginning in personal projects undertaken by individual members of the faculty but reached the level of a thrust area due to UNDP assistance in 1980s. Motivated teachers continued to pursue educational research under a subsidy scheme floated by this Institute. World Bank Assisted Project laid demands on this aspect of our institutional activities. A good number of teachers of Polytechnics and Engineering colleges and even members of the NITTTR faculty started showing keen interest in research. Thus the Institute reached the level of recognition by the University of Madras as a doctoral research centre in the inter-disciplinary area of Engineering Education from April 1993. Currently 57 scholars are doing Ph.D. Most of them are working in Industries, Directorates of Technical Education, Engineering colleges and Polytechnics.

## **1.2 Ph.D. DEGREE PROGRAMME IN ENGINEERING EDUCATION:**

NITTTTR, Chennai is affiliated to the University of Madras for the Doctoral Degree Programme in Engineering Education (Inter-disciplinary).

**As the Ph.D. Programme of the Institute is affiliated to the University of Madras all the rules and regulations prescribed by the University from time to time will apply to the candidates admitted into the Programme.**

## **1.3 RESOURCES AVAILABLE:**

### **1.3.1 Laboratories, Workshops and Centres:**

- ❖ Civil Engineering Laboratory
- ❖ Centre for Environmental Management
- ❖ Closed Circuit Television Studio
- ❖ Computer Centre
- ❖ Education Laboratory
- ❖ Educational Technology Laboratory
- ❖ Educational Television Studio
- ❖ Multimedia Centre
- ❖ Electrical Engineering Laboratory
- ❖ Electronics Engineering Laboratory
- ❖ Microprocessor Laboratory
- ❖ Interactive Video Laboratory
- ❖ Mechanical Engineering Laboratory
- ❖ Flexible Manufacturing System lab
- ❖ Instructional Techniques Laboratory
- ❖ Curriculum Development Centre
- ❖ Centre for Sustainable Development
- ❖ Library

### **1.3.2 Human Resources:**

The Staff of NITTTTR, Chennai have high academic and industry background. The strength of the Institute lies in the diversity of experience combined with expertise in teaching. The faculties represent a variety of Engineering and other disciplines including Education, Educational Management and Rural Development.

#### Faculty members are:

- ❖ Training consultants for various national and international organisations.
- ❖ Educational planners to design need-based, user friendly, participant oriented courses and workshops.
- ❖ Instructional designers to design, develop, monitor and evaluate instructional processes for education and training.

#### Our supporting staff:

- ❖ Include Administrative and Accounts Personnel, Technicians, and Production Personnel.
- ❖ Lend their experiences and contribute to the overall functioning of the Institute.

### **1.3.3 Other facilities:**

#### (A) Hostels and Guest House:

- ❖ There are 2 Trainees Guest House located in the campus. Type A Trainees Guest House has facilities for accommodating 80 persons and have sharing bathrooms.
- ❖ Type B Trainees Guest House has accommodation facilities for 50 in single rooms with attached bath.
- ❖ There is also another Guest House having 30 rooms with attached bath. 26 of these are air-conditioned.

#### (B) Auditorium:

The Srimathi Indra Gandhi Auditorium acoustically designed has a seating capacity of 175. It is designed for conducting National Seminars, Enrichment Studies, Cultural Programmes and other academic and social activities.

#### (C) Social Centre:

The Social Centre in the Institute caters to the social and recreational needs of the trainees. It provides facilities for indoor games such as shuttle badminton, table tennis and chess.

## **2.0 OBJECTIVES OF RESEARCH IN ENGINEERING EDUCATION:**

Research projects in the area of Engineering Education (Inter-disciplinary) are to be undertaken to fulfill the following objectives:

- to apply the concepts, principles and procedures of Engineering / Technology in the field of education and vice-versa.

- to apply social science research methodology in providing solutions for educational problems observed in technical education.
- to promote research culture as a distinct characteristic of the professional educators in technical, technician and vocational education.
- to foster interaction between industries and educational institutions.
- to foster interdisciplinary approaches in educational process
- to make research as an essential procedure for educational innovations.

### **3.0 PRIORITY AREAS OF INTER-DISCIPLINARY RESEARCH IN ENGINEERING EDUCATION**

The researchers will be required to carryout research in the following thrust areas of priority to the institute:

- Human Resource Development (Training and development of staff of technical education institutions, industries and Government departments)
- Curriculum development and evaluation
- Instructional materials and media development, including e-learning
- Teaching learning process
- Testing and evaluation including student evaluation
- Human Resource Management
- Governance and educational management including Management Information System
- Student services including Guidance & Counselling
- Sustainable development
- Technical education for the disadvantaged (persons belonging to Scheduled and Backward castes, minority communities, disabled persons, persons living in difficult circumstances and women)
- Any other area relevant to Technical Education

### **4. ABOUT THE Ph.D. PROGRAMME:**

As per the revised regulations of University of Madras, admissions to the Ph.D. Programme could be made four times a year i.e., in January, April, July and October of every calendar year. However, candidates with fellowships from funding agencies like UGC / CSIR or Project Fellows could

register at any of the above sessions of the year along with others. Candidates should submit their applications on or before first working day of a quarter, viz., January, April, July and October.

#### **4.1 ELIGIBILITY:**

For purposes of admission to the Ph.D. Programme in Engineering Education:

- (1) A candidate should have obtained a Master's Degree in Engineering / Technology / Architecture / Computer Applications / Electronic Media / Visual Communication / Environmental Science / Physics / Chemistry / Maths / English / Commerce / Management / Psychology / Sociology / Education / HRD or any other discipline related to Engineering Education with not less than Second Class or 50% of marks or equivalent Grade. The candidate should have secured first class either at Bachelor's degree or Master's degree.
- (2) In the case of examinations, where classification does not exist, a minimum of 50% of marks is needed in the qualifying examination.
- (3) The candidate should have passed two year P.G. Degree Course after 3 year Degree Course and Higher Secondary of 12 years duration or Pre-University under 11 year SSLC + 1 year of 10 +2 pattern. Candidates who have passed the P.G. Degree Examination with less than 17 years of total duration of the course are not eligible for admission to Ph.D. Programme.
- (4) Candidates who have passed their qualifying examination from other Universities / Boards must submit an Eligibility Certificate obtained from the Registrar of University of Madras, along with their application for admission.
- (5) Foreign candidates must obtain a Research Visa from the Department of Human Resource Development, Ministry of Education, Government of India, New Delhi for the period of Ph.D. Programme.

A candidate will be registered as a Full-time, Part-time (Internal) or Part-time (External) subject to the provisions of these regulations and subject to the following:

“Research Fellows / Research Assistants / Technical Assistants / Project Assistants / Training Officers in extension departments approved by the University appointed in the research projects funded by recognised agencies / Government are also eligible to register for Ph.D. on a Full-time basis in the same department provided they satisfy the eligibility criteria laid in”

**There shall be the following categories of candidates registered for the Ph.D. Degree:**

**(a) Full-time (with or without stipend / fellowship)**

**(b) Part-time (Teacher or non-teacher, internal vis-a-vis external)**

Both the categories may register at the recognised Departments, Colleges or Research Institutions coming under these regulations.

**PART TIME (Internal):**

A candidate possessing the qualification prescribed supra and falling under any of the following categories is eligible to conduct research on a Part-time basis:

- (a) A teacher working in the Department of the University or of an affiliated college of the University, Higher Secondary School or High School or Polytechnic within the territorial jurisdiction of the University and with the qualifying degree.
- (b) A candidate employed other than as a teacher in a permanent job, within the territorial jurisdiction of the University with a minimum of four years working experience put in continuously with the qualifying degree and satisfying the rules framed separately by the Syndicate from time to time.
- (c) Research Assistants / Technical Assistants appointed by the University are eligible to register for Ph.D. Degree on Part-time basis in the same Department.

**PART TIME (External):**

Notwithstanding anything contained in these regulations, candidates possessing any one of the qualifications from the University of Madras or from any other University recognised by the Syndicate as equivalent thereto, prescribed under regulation 2 Supra, and employed as a teacher, Scientist or in any other related capacity in National / State level Institutions, Universities and Research and Development (R & D) Centres / Laboratories and institutions outside the territorial jurisdiction of this University, in India and abroad who are permitted by the respective organisations for pursuing research leading to the Ph.D. Degree of this University on a part-time basis, while continuing in employment, may be permitted to register for the Ph.D. Programme on a part-time basis as external candidates. These candidates are expected to do research in their place of employment and in addition, they should undergo such course work, examination and research work as may be prescribed by the supervisor / doctoral committee for a minimum of SIX MONTHS during the research period directly under the supervisor in this University. In addition to the Supervisor from this University, they shall have a joint supervisor from the Institution where they are employed, provided such supervisors are recognized as supervisors for Ph.D. research by this University or the host University. In the case of non-availability of a recognised supervisor in the institution, the candidate's research work shall be monitored by the Head of the institution.



## **4.2 MODE OF SELECTION:**

The admission to Ph.D. Programme will be made through a Departmental Selection Committee, constituted by the Director of NITTTR. The Departmental Selection Committee will process the application of each and every individual and examine the candidates about their suitability by conducting an Entrance test (Written and Oral). The Minutes of the Meeting of the Departmental Selection Committee with the signature of all the members will be forwarded along with the application of the candidate for approval of the University.

## **4.3 DURATION OF THE RESEARCH:**

### **(A) Full time:**

A candidate registered as a full time candidate for the Ph.D. shall work continuously, in the institute under the supervisor concerned for a minimum period of THREE YEARS after provisional registration before submission of thesis.

### **(B) Part time:**

A candidate registered for Ph.D. Degree as a part-time candidate (Both internal and external) shall work for a minimum period of FOUR YEARS after provisional registration before submission of the thesis.

### **Exemption:**

Exemption of one year from the minimum duration required is permissible in respect of candidates who possess a M.Phil. or M. Litt. or Master's Degree in the faculties of Law, Engineering, Technology and Architecture.

## **4.4 FEES:**

Selected candidates for Ph.D. on Part-time / Full-time basis will be required to pay tuition and other fees to the institute and University of Madras as per rules in force. The current rates are given below:

### **(A) Fees to the University:**

- |  |                       |
|--|-----------------------|
| 1. Cultural and Youth Festival Fee<br>(Other than Sports and NSS etc.)         | Rs.30/- at entry only |
| 2. Fees for the Development of Infrastructural<br>facilities in the University | Rs.30/- at entry only |
| 3. Library Fee   | Rs.120/- per annum    |

### **NOTE:**

These fees are in addition to the fees to be paid for (a) Obtaining permission to Register and (b) For Registration.

**(B) Fees to the Institute:**

**I. On admission:**

Indian Nationals: Rs.2,000/- (one time payment only)

Foreign Nationals: Rs.10,000/- (one time payment only)

**II. After Registration:**

There will be two semesters in an academic year

First Semester: From April To September

Second Semester: From October To March

**(i) Full Time students:**

Full time students sponsored by their employers or self-sponsored:

Indian Nationals: Rs.10,000/- per semester

Foreign Nationals: Rs.50,000/- per semester

**(ii) Part time Students:**

Indian Nationals:

(a) Teacher candidates: Rs.10,000/- per semester

(b) Non-Teacher candidates: Rs.20,000/- per semester

Foreign Nationals:

Rs.50,000/- per semester

III. Staff Members of N.I.T.T.R., Chennai selected for admission into Ph.D. Programme are exempted from payment of any fees to the institute.

**5.0 LIST OF SUPERVISORS:**

- Dr. S. DHANAPAL**, B.E. (ECE), M.Sc. (Engg.) (Comm. Systems), Ph.D.  
Director Incharge & Professor and Head,  
Curriculum Development Centre  
Areas of Interest: Curriculum Studies, Program Evaluation and  
Instructional Design  
Email ID : [rasdp53@gmail.com](mailto:rasdp53@gmail.com)  
Telephone No.: 044-2254 5406 / 442  
Research Scholars: Awarded - 1; Undergoing - 5  
Vacancy Position: 3  
Date of Retirement: 28.02.2018

2. **Dr. T. GNANA SAMBANTHAN**, M.E., Ph.D.,P.G.D.P.M.  
Professor & EDP Manager  
Areas of interest: Engineering Education, e-Learning,  
Learning Grid, Computations; S/w Engineering  
Email ID: [tgsambanthan@gmail.com](mailto:tgsambanthan@gmail.com)  
Phone No. 044-22545457  
Research Scholars: Awarded - 12; Undergoing - 1  
Vacancy Position: 6  
Date of retirement: 16-09-2018
3. **Dr. E.S.M. SURESH**, M.E., Ph.D., Cert. Tech. Ed.  
Professor & Head,  
Department of Civil Engineering  
Areas of Interest: Curriculum Design, Technology Enabled  
Learning, Strategic Planning, Institutional  
Development, Outcome based Education  
and Accreditation  
Email ID: [esmsuresh@gmail.com](mailto:esmsuresh@gmail.com), [suresh@nitttrc.ac.in](mailto:suresh@nitttrc.ac.in)  
Telephone No.: 044-2254 5423  
Research Scholars: Awarded - 3; Undergoing – 4(2 thesis submitted)  
Vacancy Position: 4  
Date of Retirement: 31.05.2031
4. **Dr. S. RENUKA DEVI**, B.Sc., M.C.A., M.Phil.(CS), Ph.D.  
Professor and Head Incharge,  
Department of Education.  
Areas of Interest: Training Technology, Instructional Design and Delivery,  
Knowledge Management, Knowledge Based Computer Systems, Soft  
skills, Gender Studies and Guidance and Counselling  
Email ID : [bmrenuka@gmail.com](mailto:bmrenuka@gmail.com), [srd@nitttrc.ac.in](mailto:srd@nitttrc.ac.in)  
Telephone No.: 2254 5464 / 461  
Research Scholars: Undergoing - 7  
Vacancy Position: 1  
Date of Retirement: 31.01.2032

## 6.0 APPLICATION PROCEDURE:

Application forms (both Permission and Registration) can be downloaded from the University website (<http://www.unom.ac.in>) and **the filled in application** (Application form for admission to Ph.D. Programme only) along with attested photocopies of all the certificates and an account Payee Demand Draft for Rs. 500/- (fee exempted for SC/ST students) drawn in favour of “**The Registrar, University of Madras, Chennai - 600 005** from any Nationalised Bank” **should be sent directly to THE DIRECTOR, NITTTR, Taramani, Chennai - 600 113** and **not** to the Registrar of University of Madras.

**Dates:**

<b>Session</b>	<b>Dates for downloading the application</b>	<b>Last Date for receipt of filled-in application</b>
July	1 <sup>st</sup> June to 30 <sup>th</sup> June	1 <sup>st</sup> July
October	1 <sup>st</sup> September to 30 <sup>th</sup> September	1 <sup>st</sup> October
January	1 <sup>st</sup> December to 31 <sup>st</sup> December	1 <sup>st</sup> January
April	1 <sup>st</sup> March to 31 <sup>st</sup> March	1 <sup>st</sup> April

**7.0 FOR FURTHER INFORMATION:**

If you need any clarification or further information feel free to write or call:

Dr. G.A. Rathy,  
Research Coordinator and  
Asst. Professor, Electrical Engineering  
Telephone No. 2254 5416 / 15  
[Email:res.nitttrc@gmail.com](mailto:res.nitttrc@gmail.com)

**DIRECTOR**