VIT

U N I V E R S I T Y

(Estd. u/s 3 of UGC Act 1956)

Vellore 632 014, Tamil Nadu India

RESEARCH ADMISSIONS

July 2012 Information Brochure

1.	Last date for issue of applications & Receipt of Completed applications at VIT University	*20.07.2012*
2.	Date of Written Test and Interview at VIT University	*11.08.2012*
3.	Last date of payment of fees for selected Candidates	*07.09.2012*

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VIT –A place to learn; A chance to grow

GENERAL INFORMATION

1. About VIT University:

VIT UNIVERSITY, which was founded in 1984 as *Vellore Engineering College,* has since grown from strength to strength to its present position as a premier academic institution in this part of the country devoted to education and research in Science, Engineering, Technology, Management and Humanities. The University owes its origin and its present status to its founder and the great visionary **Dr. G. Viswanathan**, a former parliamentarian and a former Minister of Tamilnadu Government.

Declared as a *Deemed University* by UGC in 2001, VIT University comprises of nine Schools and their constituent Centres.

VIT University offers academic course programmes leading to B.Com., M.Sc., M.S. (Software Engineering), B.Tech, M.Tech, MCA, MBA, degrees and research programmes leading to M.Phil, M.S. (by research) and Ph.D degrees in different disciplines. Presently the student-strength of VIT University is about 20000 comprising Indian as well as foreign students. An exceptional feature of this University is its splendid computing centre and the Central library that cater to the needs of all the students and research workers. The Placement Office of the Institute serves as a vital link between graduating students and prospective employers. The University has signed MOU's with a number of foreign universities in Germany, Australia, Canada and U.K. for possible cooperation in some advanced areas like Engineering Management, Mechatronics, Biomedical Engineering, Sensor Technology, Energy and Environmental Engineering.

2. Research Programmes offered :

Sl.No.	Vellore Campus	Chennai Campus
1.	School of Mechanical & Building Sciences	School of Mechanical & Building Sciences
2.	School of Bio-Sciences & Technology	School of Advanced Sciences
3.	School of Electrical Engineering	School of Electrical Engineering
4.	School of Electronics Engineering	School of Electronics Engineering
5.	School of Computer Science and Engineering	School of Computer Science and Engineering
6.	VIT-Business School	VIT-Business School
7.	Centre for Bioseparation Technology	School of Social Sciences & Languages
8.	Centre for Nano-Technology and Research	
9.	Centre for Disaster Mitigation & Management	
10.	Centre for Nano Biotechnology	
11.	School of Advanced Sciences	
12.	School of Social Sciences & Languages	
13.	TIFAC-CORE	

Ph.D AND M.S (BY RESEARCH) DEGREES IN ENGINEERING DISCIPLINES

School of Mechanical & Building Sciences:

Industrial Engineering; Geotechnical Engineering; Environmental Engineering (Ecosustainable waste Management); Cryogenics; Remote Sensing & GIS application, Ground Water Resources; Structural Engineering; Computational Fluid Dynamics; Robotics; Tribology (Wear Research); Special alloys and Steels Technology; Environmental Fluid Mechanics; Computational Mechanics; Biomaterials; Surface Engineering; Synthesis and Characterization of Nanomaterials, IC Engines and Chemical Engineering.

School of Bio-Sciences & Technology:

Bio-medical Engineering; Bio-informatics; Bio-sciences; Applied Microbiology; Medical Biotechnology; Bio-medical Genetics, Plant Biotechnology; Protein Engineering; Bio-Remediation; Computational Biology; Biomaterials; Nano-biotechnology; Developmental Biology; Physiology; Endocrinology; Immunology.

School of Electrical Engineering:

Power Electronics and Drives-Power Electronics Converters, Simulation of Power Electronic Systems, DSP and FPGA Applications, Permanent Magnet Machines and Special Machines, Vector control/direct control/torque control of motors.

Power systems: Power System Operation and Control, High Voltage Engineering, Flexible AC Transmission Systems (FACTS), Restructured Power System Operation, Reliability, Power Quality, Energy Management Systems, Alternative Energy Sources and Emission control, Power System Automation.

School of Electronics Engineering:

Optical Communication; Optical Networking, Optical Imaging, Medical Imaging, Non-linear Systems Control, Intelligent Control, Robust Control, Optimal Control, Adaptive Control, MEMS and Microsystems, DNA Technology, Silicon Micromachining, Nanoelectronics, Speciality Optical Fibre Fabrication, Optical Power Amplifiers, High Power Lasers, Fibre Sensors: Biomedical, Chemical and Civil, Optical Fibre devices, Speciality Glasses for Photonics, Nanotechnogy: Quantum dots and nanoparticles doped glasses and optical fibres, Non-linear Devices; Semiconductor Device modelling; VLSI Design; Design of Digital and Analog Circuits; Low Power and Low Voltage VLSI Design; Low Power VLSI design for Medical, Communication and Signal Processing Applications; Memory Circuit Design.

School of Computer Science and Engineering:

Theoretical computer science (Natural computing, Algorithms, cellular automata etc.), Computer systems (Computer architecture, networks, databases, embedded systems, network security, network management,distributed computing, grid computing etc.),

Human computer Interaction(speech recognition and synthesis, speaker recognition, neural networks, multimodal interface of languages, image processing etc.)

Intelligent systems and Knowledge engineering (Artificial intelligence, data mining, Information retreival, e-commerce etc.)

VIT-Business School:

Marketing; Finance; OB & HRM; Systems & Operations.

Centre for Bioseparation Technology (CBST):

Molecular recognition, Proteomics, Bio separation, Metabolic disorder, Diabetes and Rheumatoid arthritis, Molecular Pharmacology, anticancer, anticancer properties of plant lectins, Natural Products, metabolic disorders and nutraceuticals.

Centre for Nano-Technology and Research (CNR)

Nanomaterials, Synthesis and applications for fuel cells, Sensors and Bio-Medical Applications, Carbon based nanomaterials for energy and environmental applications,

Materials for Photovoltaic application, Nanoparticles and thin films for fuel cells, Nanoparticles for/ films for Photoelectrochemical cells, Nanoparticles/ films for ceramic nano-composites.

Centre for Disaster Mitigation & Management (CDMM):

Disaster Mitigation and Management / Geotechnical Engineering.

Centre for Nano Biotechnology (CNBT)
Nanosynthesis, Nanosensors, Nanoemulsion, Nanotoxicology, Nano aquaculture, Biomedical and Bioremediation applications of nanobiotechnology.

TIFAC-CORE in Automotive Infotronics (TC)
3D Imaging Systems, Energy Storage Devices (Fuel Cells, Super capacitors, Batteries), EMI & EMC, Signal and Image processing, in-vehicle networking, Wireless communication, Embedded Systems, Hybrid vehicles

Ph.D AND M.Phil. IN SCIENCES AND LANGUAGES:

Mathematics:
Complex Analysis; Fluid Dynamics; Algebra; Graph Theory; Operational Research, Numerical Analysis.

Physics:
Thin Films/Sensors/Energy Conservation; Crystal Growth; Gel Dosimetry/ Laser Spectroscopy; Nonlinear Fiber Optics/ Photonics; Condensed Matter Physics; Material Science; Medical Physics/Nuclear Physics; X-Ray Crystallography; Ultrasonic; Bio-Materials; Surface Engineering; Synthesis and Characterization of Nanomaterials.

Chemistry:
Analytical Chemistry; Synthetic Organic Chemistry; Batteries; Nano Materials: Luminescent Materials; Bioanalytical Chemistry; Bioremediation; Electroanalytical; Inorganic solid state chemistry & materials science-Bioceramics; Catalytic materials; Electrochemical & Bio-chemical Sensors; Electron-Transfer reactions; Electrocatalysis; Thin Films; Chemically modified electrodes; Phyto Chemistry; Environmental Analytical chemistry; Sensor Systems; Mechanisms of inorganic reactions in solutions; In Vitro drug metal ion interactions through kinetic studies; Kinetic and catalytic studies using metal ions and their complexes; Biochemistry; Drug development; Biotechnology; Pharma chemistry; Synthetic Organic Chemistry.

Pharmaceutical Chemistry:
Natural Products; Pharmacology; Medicinal Chemistry; Pharmaceutics; Pharmaceutical Jurisprudence; Pharmaceutical Analysis; Biochemistry; Microbiology; Clinical Pharmacy:

Languages & Social Sciences:
English, Hindi, Tamil, Economics, Sociology, Psychology, Commerce.

3. **Minimum Qualification For Admission :**
   a. **For Ph.D in Engineering:**
      i Master's degree in Engineering/Technology in the relevant discipline with a first class or a minimum of **60%** marks/CGPA **6.5** on a **10** point scale in cases where the University/Institute does not award any class or

      ii Equivalent qualifications like M.Sc. (Engineering) / M.S. [By Research.]

   b. **For M.S. (by research) degree:**
      i.   A Bachelor's degree in Engineering/Technology or Master's degree in Science or Master's degree in Computer Applications (with Physics &

Mathematics at Bachelor's level) with a first class or a minimum 60% marks/CGPA **6.5** on a **10** point scale in cases where the University/Institute does not award any class.

ii. Associate membership of the following professional bodies with a pass in both Parts A & B with 60% marks. (Such candidates are eligible for admission to M.S. (by research) Programme in their parent discipline. Their eligibility for other disciplines will be decided on a case-to-case basis).

> The Institution of Engineers (India)
> The Aeronautical Society of India
> The Indian Institute of Metals
> The Indian Institute of Chemical Engineers
> The Institution of Electronics and Telecommunication Engineering

c. For Ph.D / M.Phil. in Sciences / Languages:

Master's degree in the relevant discipline of Science with a first class (*or a minimum of 60% marks/CGPA 6.5 on a 10 point scale in cases where the University/ Institute does not award any class*). For Languages, Master's degree with a minimum of 55% marks.

d. For Ph.D in Management:

Master in Business Administration with a first class or a minimum of **60%** marks/CGPA **6.5** on a **10** point scale in cases where the University/Institute does not award any class.

4. Categories and Eligibility:

a. Internal Full Time Candidates:
A candidate who wishes to work for Ph.D / M.S. (By Research) / M.Phil. degree on full time basis (including project staff working in sponsored projects being carried out at the Institute) should apply in the prescribed form on or before the specified date.

b. Internal Part Time candidates:
All the staff members of the Institute having the requisite minimum qualifications can work on a part time basis for Ph.D / M.S. (by research) / M.Phil. degree. They should also apply in the prescribed form on or before the specified date.

c. External Part Time candidates:
Teachers working in other colleges in a permanent position and candidates sponsored by R&D organizations of following categories are eligible to apply to work on a part time basis for Ph.D /M.S.(By Research) / M.Phil. degree:

- Laboratories run by the Council of Scientific and Industrial Research/ Department of Atomic Energy / Department of Space etc.

- Public Sector undertakings with R & D Units.

- Private Industries recognized by The **Department of Scientific & Industrial Research,** *Government of India* as engaged in R&D work or contributing to R&D efforts. A copy of the certificate issued by the Department of Scientific and Industrial Research (DSIR) in this regard will be required to be produced in such cases.

- Medical Industry, Institutions and Hospitals with approved R&D in the relevant area. (A copy of the certificate issued by the appropriate authority to be produced).

- Sponsoring Institutions/ Industries should be located within 500 km.

Candidates fulfilling these criteria may apply in the prescribed form on or before the specified date

d. For all the Research Programmes it is mandatory that the candidate should have studied in regular, full time and formal education.

e. **International candidates***:*

Candidates of foreign nationality who hold Degrees from Indian Universities seeking admission to research programmes with the necessary clearance from the Government of India (The Ministry of Human Resource Development) and possess valid Visa will be treated on par with Indian nationals for purposes of admission to the Institute.

Foreign nationals with foreign degrees must meet the minimum educational requirements as given in Section 3. Their degrees must be equivalent to Indian degrees mentioned in Section 3 in Engineering/ Technology/ Science and they should have a good academic record. International Students are expected to have a good working knowledge of English. Candidates with valid GRE and TOEFL scores will be given preference. The case of each foreign applicant will be examined and direct admission (without interview) will be offered purely on merit.

5. Minimum Period of Registration :

a. **Doctor of Philosophy (Ph.D)**

The minimum period of study and research from the date of registration for the Ph.D programme to the date of submission of thesis will be 30 months for full-time research scholars and 36 months for part-time Research Scholars.

b. **M.S. (By Research) Degree:**

i.   The minimum period of study and research required from the date of registration for the M.S. (by research) programme to the date of submission of thesis will be 24 months for full-time research scholars and 36 months for part-time Research Scholars.

ii. Special cases, if any would be looked into by the Vice-Chancellor and/ or his/her Nominee.

c. **Master of Philosophy (M.Phil):**

The minimum period of study and research from the date of registration for the M.Phil programme to the date of submission of thesis will be one academic year for full-time research scholars and two academic years for part-time Research Scholars.

6. Selection Procedure :

The candidates, who satisfy the criteria prescribed, will be called for a written test and / or interview to be conducted at the University Campus in the respective School/Centre. Selection will be based on the previous academic performance and the performance in the test and / or interview.

7. **The Question Paper:** The question papers will be in the mode of Multiple Choice in the following subjects *[for syllabus please see our website: www.vit.ac.in]:*

Code	Subjects	Code	Subjects
MEG	Mechanical	**CHY**	Chemistry
CVL	Civil	**PHY**	Physics
BBT	Bio-Sciences & Bio-Technology	**PCY**	Pharmaceutical Chemistry
BME	Biomedical Engineering	**MAT**	Mathematics
ELE	Electrical	**ENG**	English

ECE	Electronics	HIN	Hindi
CSE	Computing Science & Engineering	ECO	Economics
DMM	Disaster Mitigation & Management	CMA	Commerce & Accountancy
GEO	Geology & Geophysics	PSY	Psychology
BST	Bio-separation Technology	SOY	Sociology
NTY	Nanotechnology	MGT	Management[Marketing/Finance]
CHL	Chemical	NBT	Nano Biotechnology
TC	TIFAC-CORE		

8. Fees :

a. Registration fee   -   Rs. 900/-

b. Tuition fee per annum

	Ph.D	**M.S. (By Research)**	**M.Phil**
Internal Part Time Candidate	Rs.5000/-	Rs.4500/-	Rs.4000/-
Internal Full Time and External Part Time Candidate	Rs.20000/-	Rs.15000/-	Rs.12000/-

c. For NRI/ Foreign National Category

Application fee	$ 25
Tuition fee	$4000
Tuition fee (Partner Universities)	$3500

d. Thesis/ Dissertation Fee   Rs.10000/-   Rs.8000/-   Rs.5000/-

(To be paid at the time of submission of Synopsis & Thesis/Dissertation)

Fee once paid will not be refunded under any circumstances

The Candidates selected for admission have to pay the fees on or before **September 07, 2012** through a Demand Draft only. The Demand Draft should be drawn in favour of "*VIT University"* and payable at *Vellore (only computerized DD will be accepted)*.

9. Instructions for Completing the Application Form :

i. The name should be entered as in the Degree Certificate. Change in name/Initial, if any, should be supported by Gazette notification.

ii. Recent passport size photograph should be affixed in the application on the space provided and the same should be attested by a competent authority.

iii. They should indicate clearly the School/Centre and Area of research in the space provided in the application form.

iv. Applications from candidates who are currently employed must be routed through their employers.

v. Attested copies of the following documents must be enclosed with the completed application form.

    a. *First page of SSLC / Higher Secondary / Matriculation or its equivalent certificate*

    b. *All marks sheets / grade cards, degree certificates beginning from first degree towards proof of qualification. (Original certificates should not be enclosed)*

    c. *Transfer certificate from the Institution last attended.*

    d. *Service certificate from the present employer (This is a must for all applicants under External Part Time category.)*

viii. Applications received without the above documents will not be considered and no correspondence thereof will be entertained.

ix. The completed application form with "ADMISSION TO Ph.D / M.S. (BY RESEARCH) / M.Phil. PROGRAMME" superscribed on the cover should reach the office of **The Admissions Officer,** VIT University, Vellore 632014, Tamil Nadu, India, on or before **July 20, 2012.**

10. Joining the Research Programme:

The candidates admitted to Ph.D / M.S. (by research)/ M.Phil degree programme will have to report by **September 10, 2012** to the Admissions Officer and then the Deputy Director Research concerned. All original documents/ certificates should be submitted in the Admissions office along with the tuition fee at the time of joining.

11. Research Associateship:

VIT University encourages research activity by awarding research associateship for Ph.D and M.S (By Research) to the deserving and needy candidates on the basis of the selection test and interview.

12. Other Information:

The candidates have to make their own arrangements for their stay at Vellore / Chennai during their research programme.

All suits and actions arising out of or relating to VIT University shall be instituted within the jurisdiction of courts at Vellore, Tamil Nadu.

Further correspondence / enquiry can be made to the Admission Officer over phone, (*No.* +91-(0) 416-220 2168, 2157, 2125) or in person between 8.30 am & 5.30 pm on all working days except Saturdays & Sundays.

13. Important Dates:

- Last date for issue of applications & Receipt of
  Completed applications at VIT University   **: 20.07.2012**

- Date of Written Test and Interview at VIT University   **: 11.08.2012**

- Last date of payment of fees for selected Candidates   : **07.09.2012**

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