

Bansilal Ramnath Agarwal Charitable Trust's

Vishwakarma Institute of Technology, Pune



**Information Brochure for Admission to Ph.D.
Programme**

Year 2022-23

Contents

1. The Institute
2. Research Facilities
3. Ph.D. Programmes
4. Eligibility Criterion for Admission
5. Admission Procedure
6. Registration and Confirmation of Registration for the PhD Degree
7. Course Work
8. Supervision
9. Submission of Thesis and Award
10. PhD tracking system
11. Depository with the University Grants Commission

1. The Institute:

Vishwakarma Institute of Technology, Pune, a highly commendable private institute, occupies a place of pride amongst the premier technical institutes of the western region of India. Established in the year 1983, financed and run by the Bansilal Ramnath Agrawal Charitable Trust, Pune. The institute is established in the year 1983 with an objective to impart quality technical education for the overall development of students and the latest need of Society in general and Industry in particular. . The institute has received A++ grade accredited by National Assessment and Accreditation Council (NAAC).

The institute runs following Undergraduate Courses in Engineering and Technology

Sr No	Name of the Department	Intake	Year of start
1	Chemical engineering	120	1999
2	Information Technology engineering	60	2001
3	Computer engineering	240	1991
4	Electronics and Telecommunication engineering	240	1999
5	Instrumentation and engineering	180	1992
6	Mechanical engineering	240	1986
7	Artificial Intelligence and Data Science	120	2020

All the eligible Under Graduate programs are accredited by National Board of Accreditation from June 2019 to June 2022

The institute also runs following post graduate courses

1. MTech- Electronics and Telecommunication
2. MTech- Computer Engineering
3. M. Tech- Mechanical Engineering (Design)

The institute also runs the Ph. D programs in following disciplines under the Ph. D centre approved by Savitribai Phule Pune University, Pune:

1. Ph.D in Computer Engineering
2. Ph. D in Electronics and Telecommunication Engineering
3. Ph.D. in Mechanical Engineering

2. Research Facilities:

All Departments of the Institute are well-equipped with experimental and computational facilities. In addition, there are few central facilities, which include Computer Centre, Central Library and Workshop. The Central library is enriched with sufficient quantity of technical books, journals, reference volumes etc. that are required for learning and teaching of all disciplines. Central library gives support to the educational & research programs of the Institute by providing physical & intellectual access to information. It consists of Reference Section, Journal Section, Reading Hall, Digital library section, Multimedia Facility, Stack-Room etc. The library has unique collection of Encyclopaedia, Handbooks, Textbooks, Journals, and CDs etc. Every department has identified their thrust areas in which majority of the faculty members are pursuing their research. These areas further become the key selling points for the departments.

Apart from these thrust areas, which are specific to the individual departments, the institute facilitates an interdisciplinary learning environment to the faculty and students, by offering open electives, professional and skill development through inter and intra - departmental courses. The institute also encourages the UG students to be a part of R&D projects by offering compulsory mini projects in every semester, a three stage major project, PG research projects and Ph.D. projects, etc. Institute faculty is actively involved in guiding such projects so as to offer project based learning environment.

To promote research amongst the faculty and students the institute has started with following initiatives:

- Developing the departmental centre of excellence activities also strengthens the R&D activity.
- Offering and conducting interdisciplinary workshops, seminars, training programs, and expert lectures for faculty and students
- Offering research facilities like research equipments, laboratories, access to online journals, etc. to facilitate a conducive research environment.
- Taking initiatives to establish collaborative relations with national, international and private research institutions.
- Setting up Industry Advisory Board (IAB) to help faculty interact with industry, present their work and projects, get their projects commercialized, fetch consultancy work or finding student internship opportunities.

- Having a mentor from reputed institutes like IIT, to guide faculty for their research work.
- Providing incentives, awards for excellent performance in research related activities such as fetching research grants, having consultancy projects, generating IRG, publishing high quality journal / conference publications, etc.
- Establishing research-based faculty appraisal policy.
- Establishing VIT research grant policy to encourage young faculty to pursue research work.
- Setting up liaisons at various government and non-government agencies to facilitate the smooth conduction of application procedures and maximizing the probability of success to fetch research grant.
- Developing IPR cell providing sponsorships to help faculty file patents and commercialize them.
- Deputing faculty for training relevant to their research and teaching areas.
- Developing incubation centre to encourage entrepreneurship activities and providing a fertile ground for students and faculty to cultivate new research ideas, developing prototypes, getting seed funding from investors to help them realize their dream products.

3. Ph.D. programmes:

The Institute offers research programmes leading to Ph.D. degree in Computer Engineering, Electronics and Telecommunication Engineering and Mechanical Engineering. The broad objective of the programme is to offer research training to the candidates so that they can tackle the complex engineering problems and provide technically and economically viable solutions.

The Institute offers programme of minimum three years for the full time candidates and part time candidates. The maximum period allowed for full time candidates and part time external candidates is seven years

Every stream of the programme will have a curriculum and syllabus of the courses approved by the Academic Board. The research scholars have to earn 16 credit requirements by taking

theory courses and / or delivering credit seminars in first two semesters. The continuation in the PhD. programme will be subjected to fulfillment of the initial course credit requirement.

4. Eligibility Criteria for admission

For admission to the PhD programme, applicants fulfilling any of the following criteria shall be treated as eligible

- A. Persons having passed Post Graduate Degree (Master Degree) Examination with at least 55% marks or equivalent Grade Point Average (GPA) as per UGC / AICTE 10 point grading system or any other system accepted by AICTE / UGC / AIU for equivalent for grades /award of class.

Persons having passed Post Graduate Degree (Master Degree) Examination with at least 55% marks will be condition for getting scholarship of fellowship as per norm of B+ as stated by UGC.

5 % relaxation in the required percentage of marks will be given to the students of State of Maharashtra belonging to SC/ST/DT/NT/SBC/OBC categories.

Persons working in National Laboratories/Institutes/Government/Private Organization nominated/sponsored by the respective employer. These persons should have a Post Graduate Degree with 55 % or equivalent and holding a rank of Assistant Director or above or equivalent as per the norms of Govt. of Maharashtra, and UGC.

Above mentioned rules will also be applicable to the foreign candidates who have obtained a Master's Degree from any of the recognized Indian Universities. Admissions of foreign candidates has to be approved by International centre of affiliating university, SPPU, Pune

- A. Persons will exceptional abilities having passed graduate degree examination with 50% of marks and with 15 years' experience after graduation in the related field.

However, candidates possessing B.E. / B. Tech. Degree in the faculty of Engineering / Science and Technology shall also have patents/ intellectual property rights registered in their names. In such cases, exceptional abilities will be decided by the Research and Recognition Committee of the Institute and approved by Savitribai Phule Pune University, Pune.

- B. Senior citizen of an age of 60 years and above, with the Master's Degree. In exceptional cases, the eligibility for senior citizens shall be at the discretion of the Director Of the Institute.
- C. A Graduate in any Faculty who has developed important new technology (new for The country) or designed and fabricated special instruments or apparatus which are deemed by competent judge to be a valuable contribution in the field of Engineering and pharmacy, may be permitted by the Research and recognition committee of the faculty concerned, on the recommendation of appropriate Board or Board of studies to submit his/her thesis for the PhD Degree in that Faculty. Such a candidate must have at least 5 years standing as a Bachelor of the Engineering/ Technology
- D. Percentage of marks required for admission of foreign candidates (those who have not obtained Master's degree from Indian Universities) will be 50 % or equivalent GPA at Master's degree level. In this case, University must be recognized by Association of Indian Universities(AIU)

All rules and regulations laid down by SPPU, Pune, UGC and AICTE are governing rules and supersede in case of any ambiguity.

5. Admission Procedure

Admission is offered to the candidate on the basis of his/her performance in Ph.D entrance Test (PET) and in an interview held before the commencement of the semester for which admission is sought. The admissions to the Ph. D program also depend upon the vacancies available with research guides in the discipline where the admission is sought.

All candidates who have cleared PET from SPPU, Pune or other State Funded Universities with valid score can directly appear for the Interview. However the student must apply for admission at the time of declaration of the entrance examination scheduled by the Institute.

Ph.D Entrance Test (PET):

- Entrance Examination will be normally conducted **twice** a year

- Alternately **one entrance examination shall be conducted and during alternate semester, vacancies shall be declared and filled through an advertisement** from eligible candidates through entrance examination/ exemptions in two admission cycles consecutively. Appearing for entrance examination is equally applicable for Foreign Students also. **The PET will be conducted either in ONLINE (PROCTORED) and/or OFFLINE mode**

A. Exemption for Entrance Examination

The candidates fulfilling at least one of the following conditions will be exempted from Entrance Examination:

1. Qualified in GATE(Valid score*)/GPAT (valid score*)/SET/NET/JRF/SRF examination of the apex bodies as CSIR.UGC/ICAR/ICMR/DBT/M.Phil, Degree in a relevant subject completed from any Recognized University; Minimum experience of 5 years as an approved teacher of Savitribai Phule Pune University / other state Universities in affiliated college/recognized institution/ University Department/teachers selected through MPSC or similar selection Board with 5 years of experience
2. Senior citizens of an age of 60 years and above with Master's degree;
3. Candidates such as Advocates/Doctors/Artist/Industry Professional/Employees of Government, Semi -Government Organizations fulfilling conditions prescribed above.
4. Time to time addition/ deletion/ modification by SPPU / UGC / AICTE

Note: Candidates entitled for exemption from the Entrance Examination shall submit the Registration Form along with relevant supporting documents within the stipulated period before the date of interview.

B. Structure for Entrance Examination:

The PET (Ph;D Entrance Test) for the faculty of Engineering and Technology will be based on two papers. Paper I will be based on the following:

- | | |
|-----------|------------------------------|
| Section I | A) Research Methodology |
| Section I | B) Mathematics for Engineers |
| Section I | C) Computer Fundamentals |

and Paper 2 will be based on subject specific contents.

Paper 1 and Paper 2 will carry the weightage of 100 marks each and the candidate securing equal or more than 50% marks for Open category and 45% marks SC/ST/DT/NT/SBC/OBC/EWS will be shortlisted for the interview.

The students shortlisted from PET will be required to appear for the interview before the panel of members

C. Allotment of research guide

Allotment of Research guide will be done by the respective department as per the following guidelines

1. Guidewise quota will be declared before announcement of the PET. Reservation policy will be observed at the time of allotment. The reservation will be followed as per guide basis(e.g. out of eight vacancies, four should be open and four should be reserved category)

On the basis of the interview, allotment of the Research guides for the selected candidates will be decided by the Research Centre in the formal manner depending on the number of candidates per faculty, the available specialization among the Research guides and the research interest as indicated during interview by the candidate

The allotment/ allocation of Research guide will not be left to the individual candidate or guide , Guidewise quota will be declared. Reservation policy will be observed at the time of allotment. The reservation will be followed as per guide basis e.g (out of eight vacancies, four should be open and four should be reserved category)

While granting admission to candidates to Ph.D. programmes, the Research Centres will follow the State Reservation Policy. Foreign candidates will be treated at par with Open Category for admission.

Only one foreign student at a time (i.e. when one foreign national candidate is in progress, no other candidate can be admitted) will be permitted per guide.

The Director of the institute in the capacity of Head of the Research Centre will ensure the allotment of guide(s) within 3 months from the date of selection of the candidates.

D. Application:

Every person, if he/she is otherwise eligible and qualifies as per above conditions and is

desirous of doing research work for the Ph.D. degree shall face the interview before the Committee constituted for the purpose. All such candidates will apply to the institute for registration for the purpose of interview. Candidates exempted from Entrance Examination as per the section 5 (A) shall also have to register their candidature with the institute. Candidates will be interviewed by the Committee constituted for the purpose as per the section 5 (E) below.

E. The Committee shall consist of:

1. Director of the institute (Chairman):
2. Dean (Academics)
3. Dean (Research & Development)
4. Head of the Department/ Chairman of Board of Studies concerned or his nominee;
5. Two nominees of the Vice-Chancellor - One General and one Reservation appointed by SPPU, Pune
6. Two subject experts (as approved by SPPU, Pune)
7. In charge/ coordinator of Research centre

5. Registration and confirmation of Registration for the PhD Degree(Topic approval)

- i. An eligible applicant seeking admission to the PhD programme shall apply to the Dean (R&D), in the prescribed application form along with the registration fee as may be prescribed from time to time, ordinarily within a period of THREE months from the date of allotment of the Research guide
- ii. The applicant shall submit along with application FOUR copies of his/her PhD proposal as per the guidelines to the Dean (R &D)
- iii. An eligible applicant shall be required to make brief presentation at the Department or designated place by the institute for the purpose, before the Committee constituted as under
 1. Director(Chairperson)
 2. Research guide
 3. Two Experts (Recognized research guides in the subject concerned, one

from outside the Department)

4. One subject Expert from other institute, preferably from institute of repute in India or abroad

The Presentation will be arranged by the Program Department on the basis of consent of guide and committee

After satisfactory presentation, the Committee will prepare a report on the basis of the presentation. In case of any suggestions given by the Committee for improvement of topic, the candidate shall make changes accordingly and present the topic again before the said Committee within 3 months of the earlier presentation.

After successful presentation, the proposal shall be placed before the Research and Recognition Committee. The date of the successful presentation shall be treated as the date of provisional admission of the candidate and the candidate shall be given provisional admission/registration letter.

In case of any dispute/problem, the Director shall take an appropriate decision.

- iv. If the presentation is unsatisfactory, the proposal shall be rejected and the applicant shall be required to submit a fresh proposal and make a presentation again after a gap of one month and before six months from the date of earlier presentation
- v. The research and Recognition committee shall consider approval of the topic of research and appoint , in case inter-disciplinary subjects, co guide/s recognized by the Institute or, in special circumstances , by any other recognized University/ Institute /Industry
- vi. The date of registration shall be the date of provisional admission . The registration shall be valid for six years . Extension up to maximum period of two years shall be given by the Research and Recognition Committee /s concerned only if considerable work has been done by the candidate. Over and above extensions and grant of leave from PhD duration is as per UGC guidelines time to time.
- vii. The candidate concerned must submit the application for extension through his guide and Dean R&D to the Director three months before the expiry of the registration period. Further extension of one/two years will be given by the Director on the recommendation of the Dean R&D
- viii. If the candidate desires , he/she can partially modify the title and proposed plan of

research. The Research and Recognition Committee concerned shall approve such changes on the recommendation of the guide and Dean R & D

- ix. As per provision of Ordinance 116 of the affiliating university SPPU , registered candidate shall not be allowed to register simultaneously for any other full time Degree course.
- x. The admission will be confirmed after the Research and Recognition Committee approves the topic

7. Course Work:

Admitted candidates shall be required to undertake course work organized by the Department. The course work will be for a minimum period of one semester. The course work shall be treated as pre-Ph.D. preparation.

If found necessary, course work may be carried out by doctoral candidates in related departments/institutes either within or outside the University, for which credit points shall be allotted as per rules.

The course work is compulsory and will carry **16 credits**. In addition to mandatory subjects provided by UGC time to time. The distribution of these credits is as under:

- **4 Credits for Research Methodology** which includes research methodology, Quantitative methods, computer applications, tools and techniques including instrumentation, communication skills, seminar presentation and review of published research.
- **8 credits for subject specific (2 subjects) course work** as per the research guide / Department.
- 1 credit for writing of research proposal for obtaining financial assistance from national funding agencies
- 1 credit for Writing of Review
- 2 credits for Seminar

One subject out of 2 department specific subjects can be opted from online (course or

combination of courses to get 04 credits) through SWAYM/NPTEL OR any such recognized course by AICTE/UGC for the purpose and these credits shall be counted towards the course. The evaluation will be done by the faculty of the concerned Department or as appointed by Director, through process of the appointment of examiners as per rules of the institute and affiliating university.

8. Supervision:

(A) Guide

1) Normally a candidate shall be required to complete his/her doctoral research under the supervision of the guide allotted to him/her. However, the Research and Recognition Committee concerned may allow change of guide on the production of a 'No Objection Certificate' from the first guide and an acceptance letter from the new guide.

In case of such a change, the candidate shall work for a minimum period of one calendar year under the new guide before he/she submits the thesis. A 'No objection Certificate will not be required if the candidate justifies the non-availability of his guide.

The justification will have to be endorsed by the Dean R&D, In case of any dispute/problem, non-availability of the guide, the Director of the Institute , on recommendation of the Dean of the Faculty concerned, will take an appropriate decision.

2) At any given time, a Professor shall not have more than eight registered Ph.D, candidates working under his /her supervision. Associate professor shall not have more than six registered Ph.D, candidates working under his /her supervision, Assistant Professor shall not have more than four registered Ph.D. candidates working under his/her supervision.

3) In case of dispute between a candidate and his guide, the Committee consisting of the following shall examine the matter and report to the Director, whose decision shall be final.

- i. Dean Academics [Convenor]
- ii. Faculty nominated by the Director
- iii. Dean (R &D)
- iv. Head of the department

[if the complaint is against Head /the Dean,. He/she shall not participate in the proceedings of the meeting, if the complaint is against the person holding the position. In that case, additional member/s may be appointed by the Director to replace them]

The report shall be submitted to the Director including among other things, specific recommendations.

(B) Progress :

1) All the registered candidates shall be required to submit to the Dean R&D , through their research guides, elaborate progress report every six months.

If a candidate fails to submit three reports consecutively, his /her registration may be treated as cancelled on recommendation of Head Of the Department and Dean Research and Development

2) The progress reports, submitted shall be placed by the Head of the Department before the Progress Monitoring Committee consisting of [a] Dean Academics [b] the Research Guide [c] research guide recommended by Dean R&D from amongst the recognized research guides of the Institute and d) One subject expert from the Institute of repute.

The committee shall scrutinize the progress reports and prepare a brief statement on the progress of the candidate . In case of dispute, the Director shall take final decision. The Head of Department shall maintain the record of these reports and statements.

9. Submission of Thesis and Award of Degree

A. Submission of Thesis

1.The submission of synopsis may be permitted only after completion of three years from the date of provisional registration including period of the Course Work. The synopsis should contain introduction, chapter-wise brief account of the work done and overall conclusions.

Ph.D. candidate has to publish one research paper in a standard refereed journal (as per the list of UGC, Indexed in SCI/SCOPUS/Web of Science) valid during the course of Ph.D. before the submission of the thesis/monograph for adjudication ,and produce evidence for the same in the form of acceptance letter or the reprint.

2. At least One month before the date of submission of the thesis, each candidate shall give a pre-submission seminar (Synopsis) to be arranged by the Head of the department on the request of the candidate duly endorsed by the guide. The final plan of the thesis will be discussed by the candidate before a progress monitoring committee. The Synopsis is open for all the Research Scholars of the institute.

3. In the light of the discussion during the Synopsis, the candidate shall submit to the Dean (R&D) five copies of the synopsis of his / her thesis through his/her guide within one month from the date of presentation of seminar. The guide may recommend list of referees to the Director.

4. The candidate shall be allowed to submit his/her thesis after the completion of a period of two months and before six months from the date of submission of the synopsis, Late submission of thesis shall be allowed up to the completion of one year from the date of submission of the synopsis or till the expiry of the registration period whichever is earlier.

5. The thesis shall be submitted in compact bound form along with a soft copy, Five copies of the abstract shall be submitted along with the thesis.

The final thesis shall be presented in accordance with the following specifications:

- A. The paper used for printing shall be of A4 Size;
- B. Printing shall be in a standardized form on one or both sides of the paper and in 1.5 line spacing ;
- C. A margin of 1.5 inches shall be kept on the left hand side;
- D. The card for cover shall not be more than 330 GSM;
- E. The title of the thesis, name of the candidate, degree name of the guide, place of research and the month and year of submission shall be printed on the title page and the front cover)
- F. The hard – bound thesis cover shall be of black colour, Spine of the binding [side cover should mention ‘Ph.D, thesis ‘ on the top, name of the candidate and month and year.

6. The thesis shall include a Certificate of the guide and a Declaration by the candidate that the work reported in the thesis has been carried out by the candidate himself/herself and that

the material from other sources, in any is duly acknowledged.

7. The thesis shall be written in English only.

B. Appointment of Examiners

1. The procedure for the appointment of examiners shall be undertaken soon after the candidate submits his/her synopsis.

2. The thesis should be sent to three external examiners and evaluated by any two examiners one examiner from India and one should be from outside India.

3. If the approval of the examiners panel is delayed beyond three months, the Ph.D candidate, through his guide may bring this to the attention of the Director directly who, in such a case, may initiate an appropriate action in consultation with the Dean of the Faculty concerned ensuring that the panel is approved within a month.

4. The Chairman for the Viva-Voce and the Panel for defence of the thesis shall be appointed by the Director from a panel of three experts suggested by the guide. The panel shall include minimum one examiner to whom thesis was sent for an evaluation, The guide of the candidate shall act as an internal examiner.

C. Evaluation

1. After the approval of the panel of examiners by Board of Examinations, the Controller of Examinations shall invite the first three examiners from the approved panel, to examine the thesis. The Controller of Examinations shall forward the thesis to the examiners within a week from the date of the receipt of the acceptance letter of the examiner or the submission of thesis, whichever is later. If an examiner does not accept the invitation within thirty days from the date of dispatch of the invitation letter, the Controller of Examination shall send an invitation letter to the next examiner on the panel.

2. The External Examiners shall independently send their reports to the Controller of Examinations within 60 days from the date of receipt of the Thesis. If an examiner fails to do so, the Controller of Examinations shall send him/her a reminder immediately after the expiry of the said period and request him/her to submit the

report within 30 days. If the examiner concern fails to comply even within the extended period the COR shall cancel his appointment forthwith and invite the next examiner from the approved panel to evaluate the thesis.

In the event of a request for the late submission of a report, receipt of the report after the appointment has been cancelled or the loss of report, postal delay, etc., the Director/Dean R&D shall take an appropriate decision in the interest of the candidate concerned.

3. The positive reports received from the external examiner and the research Guide (Internal Examiner) shall be immediately forwarded to the Head of the Department who after ascertaining that the reports are favorable shall arrange the Viva and the defense of the thesis at the earliest date suitable to the Internal Examiner, one of the External Examiner and the Chairperson. The Head of the Department shall make the reports available to the candidate, the research guide and the Chairperson at least a week before the date of the viva. In case of any problem the Dean R&D will take an appropriate decision.
4. In case of one out of two examiner give unfavorable report, then the Controller of Examinations shall get the thesis examined by an additional examiner from the panel of examiners approved by the Board of Examinations.

D) Viva Voce and defence of the thesis

The day, date, time and the place for the viva voce and the defence of the thesis shall be notified by the Head of the Department at least 8 days in advance. The procedure and norms for the conduct of viva, payments, etc. shall be laid down by the Institute. The defence of the thesis shall take place in the presence of the Guide (Internal Examiner), one External Examiner and the Chairperson, who shall jointly evaluate the performance of the candidate. In case of dispute, Dean R&D after the discussions with the Director shall take an appropriate decision. The examiners present for the viva - voce and the defence of the thesis shall submit to the COE their final consolidated report along with the reply given to the queries raised by the external examiners in the written form, signed and accepted by the members of the Viva-Voce Panel and a list of the persons attending the open defence in respect of the award of the Ph.D. degree immediately after the defence is over.

5. In case the defense is not satisfactory, the examiners may unanimously recommend with reasons that afresh viva-voce and defence of the thesis be organized within a period of not less than one month. If the defence is still not satisfactory, the Committee would record the reasons for the same. The Committee may recommend the resubmission of the thesis with suggested changes.

E. Ph.D. Tracking System

A full fledged system, integrated with institutional ERP is at place to track the progress of candidate right from admission to submission of thesis. The system shall keep records of admission, topic approval, progress seminars, papers and patents published by candidate and synopsis report. The same system shall be used for evaluation of the candidate by the Progress Monitoring Committee. Committee report shall be uploaded in tracking system. E-mail communication shall be generated from system for all the stakeholders based on the events and activities.

F. Depository with the University Grants Commission (National Academic Depository)

Following the successful completion of the evaluation process and announcements of the awards of Ph.D., the Institute shall submit a softcopy of Ph.D. thesis to the University Grants Commission within a period of 30 days, for hosting the same in INFLIBNET accessible to the college. The University shall issue a provisional certificate, certifying to the effect that the degree has been awarded in accordance with the regulations issued by the University Grants Commission as per the notification dated 1st June 2009 and subsequent the Gazette of India published on 11th July 2009.



f R.

Director

Vishwakarma Institute of Technology

Pune 411 037