INFORMATION BROCHURE

PhD ADMISSION 2022-2023 (AUTUMN SEMESTER)



INDIAN INSTITUTE OF PETROLEUM & ENERGY

2nd Floor, AU Engineering College Main Building, Andhra University, Visakhapatnam-530003

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GENERAL

1. Important Guidelines for Ph.D. Application

Applications are invited from the motivated Indian citizens for admission to the Ph.D Programme [Regular, Sponsored, Working Professionals and Individual Fellowship (i.e. CSIR/ UGC/ DBT/ ICMR/ INSPIRE etc.)] in following disciplines of Engineering, Technology and Science. Admission of reserved-category candidates will be done as per Government of India notification at par with IITs.

- Bioscience
- Chemical Engineering
- Chemistry
- Computer Sciences and Engineering
- Mathematics
- Mechanical Engineering

Electrical Engineering

• Petroleum Engineering

• Earth Sciences

Candidates should read carefully the eligibility criteria as available in the Information Brochure before applying for the programme. Since all the applications will be screened/shortlisted on the basis of data submitted by the candidates in the "online application portal", the candidates must satisfy themselves of the suitability for the programme to which they are applying. If at any stage, it is found that candidates have furnished false or wrong data/ information, their candidature/admission will be rejected/cancelled.

Application once submitted successfully cannot be altered under any circumstances. Further, no request with respect to making changes in any data/particulars entered by the candidate in the Application will be entertained. Therefore, please check all data/information before you send the application form.

Applicants are required to apply through the online application portal only.

2. Important Dates

Commencement of online application submission	01/04/2022
Last date of the application submission	31/05/2022
Date of Test & Interviews (for short listed candidates)	06 th June to 10 th June, 2022
Declaration of list of selected candidates	15 th June, 2022
Date of admission in the Ph.D. programme for selected candidates	25 th July, 2022

3. Instructions to fill Application form

a) Candidate needs to deposit the Application Fee (**Non-Refundable**) as per the details below:

GN/EWS/OBC-NCL Male candidates	Rs 300/-
GN/EWS/OBC-NCL Female candidates	Rs 150/-
SC/ST candidates	Rs 150/-
PwD candidates	Rs 150/-

Application Fee payment will be accepted through online (NetBanking/ Credit Card/ Debit Card)

- b) In case you are desirous of being considered for admission in more than one "specialization", you should apply separately by paying separate Application Fee.
- c) Stepwise guidelines for filling Online Application Form

Go to <u>https://iipe.iitkgp.ac.in/IIPEApp/index?admiss_ch=02</u>

STEP-I : Fill in the ONLINE application form

Register with Your Email Id and Login. FILL in the appropriate data. Please note that you have to upload your testimonials wherever it is required to validate your information along with your digital photograph and signature.

STEP-II : Make PAYMENT and SUBMIT Application

Payment of application fee has to be made through online payment gateway only.

STEP-III : Take PRINT

After final submission of your online application, you will be able to generate your online application print with your specific details/data. This application print may be retained with you for future requirement.

Please note that you NEED NOT SEND the application by post.

Your application will be considered on the basis of your final submission through online.

You can check submission, shortlisting, selection and other application related status from Application Status menu. *You should remember your login id and password for the same.*

THE INSTITUTE

The Indian Institute of Petroleum and Energy (IIPE) Engineering is an Institute of National Importance at par with IITs and IIMs and enacted by Parliament vide the Indian Institute of Petroleum & Energy Act, 2017 (No: 3 of 2018). It has started its operations in Visakhapatnam, the state of Andhra Pradesh at AU College of Engineering as its temporary campus. Govt. of Andhra Pradesh has allotted Ac 201.80 cts of land at Vangali Village, Sabbavaram Mandal, Visakhapatnam where the permanent campus is going to come. IIPE is an autonomous institute under the Ministry of Petroleum & Natural Gas, Govt. of India and backed by public sector Oil and Gas giant viz. HPCL, IOCL, ONGC, GAIL, OIL whose CEOs are on the Board of IIPE.

The objective of establishing IIPE is to meet the quantitative and qualitative gap and supply of skilled manpower for the Petroleum Sector and to boost the research activities needed for growth of the sector. learn, Experience and Implement is what IIPE strives for and inculcates the same in the students.

Within a span of short time, IIPE entered into academic MoUs with Texas A & M University, USA and University of Houston, USA for research collaboration, faculty exchange, student internships etc.

Ph.D. PROGRAMME

1. Programme

The Institute provides facilities for research leading to the Degree of Doctor of Philosophy (Ph.D). The award of the Ph.D. degree is made on the basis of satisfactory performance of a registered candidate in

- i. Prescribed course work, comprehensive examination & seminar
- ii. Publication of original research work in reputed journals/conferences or award of patents/technology transfer etc.
- iii. The thesis submitted by the candidate and a final viva voce. The thesis shall be the report of research work characterized by either discovery of new facts or a new interpretation of known facts and theory, or an independent design and development, or development of new instrument/technology

2. Research Areas

Areas of research available in the different fields are listed on website at <u>https://iipe.ac.in/p/research-areas-faculties.html</u>. IIPE is also engaged in interdisciplinary work with research groups.

3. Eligibility Criteria for Admission

3.1. Minimum qualifying degree required for seeking admission to the Ph.D. program

I. An applicant must have a Master's Degree (M.Tech/ MS/ ME/ M.Sc) in Engineering/ Technology or a degree equivalent to any of the above in relevant subject after qualifying GATE with consistent First Class/ division or a minimum

60% marks or a minimum 6.5 CGPA on a 10 point scale (55% or 6.0 CGPA for ST/SC).

OR

II. An applicant must have a Bachelor Degree (B.Tech/ BE) in Engineering/ Technology or a degree equivalent to any of the above in relevant subject with consistent First Class/ division or a minimum 60% marks or a minimum 6.5 CGPA on a 10 point scale (55% or 6.0 CGPA for ST/SC).

OR

III. An applicant must have a Master Degree (M.Sc/ M.Tech/ MS/ ME) in Science/ an allied area or a degree equivalent to any of the above in relevant subject with consistent First Class/ division or a minimum 60% marks or a minimum 6.5 CGPA on a 10 point scale (55% or 6.0 CGPA for ST/SC).

3.2 Additional Requirements for different Admission category

I. Regular with Institute Research Assistantship

- a. A **valid GATE or UGC or CSIR-NET or NBHM** score is required for the award of Institute Research Assistantship.
- b. Candidates with a master's degree in Engineering or Technology after qualifying GATE is also eligible for Institute Research Assistantship.

Sl No	Dept.	Eligibility Criterion	GATE Paper	NET
1	Petroleum Engg	(i) M. Tech. in Petroleum, Chemical, Petrochemical, CSE, Mechanical, Civil	Petroleum, Chemical, Petrochemical, CSE Mechanical, Civil	
		(ii) M.Sc. in Chemistry,Mathematics, Geology andGeophysics	Chemistry, Geology and Geophysics & Mathematics	Chemistry, Geology and Geophysics & Mathematics
		(iii) B. Tech. in Petroleum Engg	Petroleum Engg	
2	Chemical Engg	Master's degree in Chemical Engg or any other discipline of Engg. or Technology or equivalent. (eg: Environmental, Energy, Polymer, Electrical, Control systems, Artificial Intelligence etc.)		

c. Eligibility Criteria for vacancy under Institute Assistantship in the following disciplines

		 ii) Science/ Mathematics postgraduates with exceptional merit in the appropriate field. (iii) B.Tech/ B.E in Chemical Engg, allied disciplines (eg. petroleum, petrochemical, pharmaceutical, environmental, polymer, biochemical, biotechnology, electrochemical, electrical, instrumentation,) and other disciplines of engg/ technology with exceptional merit 	GATE/NET in relevant discipline	
3	Earth Sciences	(i) M.Sc./ M.Tech in Mathematics, Geology and Geophysics	Mathematics, Geology and Geophysics	Mathematics, Geology and Geophysics
4	Mechanical Engg	BTech in Mechanical Engg and MTech in Mechanical specialization branches	Mechanical Engg	
5	CSE	BE/ BTech in CSE/IT and ME/MTech in CSE/IT	Computer Science and Information Technology	
6	Mathematics	M.Sc./ M.Tech in Mathematics (*Note: Applications are requested in the area of Linear algebra applications in Machine/ Deep learning)	Mathematics	Mathematics
7	Chemistry	MSc in Chemistry and/or Biochemistry, Physics, MTech in Chemical Engineering, Materials Science/Engineering	Chemistry, Chemical Engineering, Biochemistry, Physics	Chemical Sciences, Physical Sciences

d. A person who is in employment and is applying for Institute Assistantship and selected for admission, he/she must resign and produce the acceptance of resignation by the employer at the time of joining or produce a document that he/she is not receiving any salary from his/her employer along with proper document of sanctioned leave.

- e. The Institute Research Assistantship shall be awarded for a maximum period of 5 years. At present the amounts are as follows:
 - Rs. 31,000/- pm for first 2 years
 - Rs. 35,000/- pm for next 3 years
 - Contingencies amount: Rs. 30,000/- Per annum
- f. No Research Student shall be permitted to receive any other emoluments, salary, stipend or any other scholarship/assistantship during the tenure of Institute Research Assistantship.

II. Individual Fellowship (CSIR/UGC/DBT/ICAR/INSPIRE etc.)

- a. All candidates applying for Individual Fellowship category must have **valid award letter** with fellowship issued by the respective funding agency (i.e. CSIR/UGC/DST/DBT/ICMR etc.) along with the eligibility criterion as mentioned in 3.1.
- b. Candidates having provisional Individual Fellowship award letter must give an undertaking that "In case of cancelation/withdrawal of Provisional award of fellowship by the funding agency, the admission at IIPE Visakhapatnam will be cancelled from the date of joining the Ph.D programme and there is no liability on the part of IIPE in this regard".

III. Ph.D. through Project

- a. Candidates who possess the prescribed qualifications as mentioned in eligibility criteria as mentioned in 3.1 and are working in a sponsored project in the Institute shall be eligible for admission to the Ph.D. program under project category.
- b. An intending candidate must submit his/her application in prescribed form for admission through Principal Investigator, Head of the Department and Dean (Research and Development) with suitable endorsement.
- c. The minimum remaining period of the project as well as tenure of the project employee should be at least 2 years from the date of joining the Ph.D. program.

IV. Sponsored candidates (External) in Engineering and Sciences

- a. Persons with First Class in Graduation and are in service in any of the following establishments with minimum of three (3) years job experience shall be eligible for admission to the Ph.D. program as sponsored candidates (External).
 - Public Sector Undertaking (PSU)
 - Petroleum & Natural Gas, Coal, Earth Sciences, Chemical & Fertilizer, Defence or other ministries of the Government of India or any other government organizations
 - Established industrial R&D organizations.
 - Autonomous bodies and National Laboratories.
 - Reputed industries as may be recognized by the Institute
- b. These candidates must have a Supervisor (internal) from the Institute (IIPE) and an external supervisor (optional) from their parent organization where they will be doing the research work.
- c. The competence of these candidates will be assessed along with the regular candidates.

- d. After joining, the rules and regulations as specified by the Institution (IIPE) for regular candidates with regard to academic performance will remain applicable for candidates under this category also.
- e. The candidate should submit a Sponsorship Certificate (Format available on website) from the organization, in which s/he is employed, at the time of application giving an undertaking that s/he would be released from the normal duties to fulfil the course-work requirement. The certificate should also provide details of facilities relevant to the research programme and available to the candidate.
- f. The candidate has to complete the course-work immediately after joining the programme within a period of one to two semesters. Depending on the student's background and the programme requirements, an additional semester may be needed to complete the coursework.
- g. After fulfilling the course-work at the Institute, these candidates will be allowed to register for Ph.D.
- h. The selected candidates will have a Doctoral Scrutiny Committee (DSC) as per the existing regulations.
- i. The candidate will have to submit a yearly progress report and appear for seminars every year after his/her registration. In addition, the candidate will have to appear for a comprehensive examination (viva voce only) before registration seminar.
- j. The minimum duration of Ph.D program for such candidates is 3 years and the maximum tenure is 8 years from the date of enrolment.
- k. The tuition fee for sponsored category (External) will be ₹ 25000.00 per semester.
- 1. Persons working in colleges/universities are not eligible under this category and rather apply under QIP category.
- m. There is no provision of any financial assistance for sponsored candidates.

Course work requirement for Sponsored Candidate (External)

- i. The coursework will be a minimum of **20 credit points** (for candidates with Bachelor's degree) and **16 credit points** (for candidates with Master's degree) with due consideration to special requirements if any. No compulsory courses e.g., English for communication, management etc. are required.
- DSC may recommend relevant courses of MOOCS/NPTEL/GIAN/virtual classrooms/interactive exercises and active learning programs offered only by IIPE/IIT/IISc/IIM/IISER/AIIMS besides the available courses in the Institute.
 For ongoing MOOCS courses the grade assigned at the end of the course will be directly transferred to the student's coursework. For all other courses, a faculty member having expertise in that subject will set the question paper and evaluate the performance of the student.
- iii. Self-study courses with standard format (Student need to submit weekly or biweekly assignments via email to course coordinator) will be mandatory to ensure progress and rigor. The candidate will have to appear for only the end semester examinations, preferably during the regular examination period of IIPE Visakhapatnam. For self-study course the consent of the course coordinator must be obtained before registration.

- At the end of the online & contact courses listed above, the student should submit the course completion certificate(s) with grades/marks for record in his/her course work.
- v. Submission of semester progress report though seminar and presentation will be compulsory.
- vi. The candidate shall have to spend at least one week per semester at IIPE, Visakhapatnam interacting with his supervisor that may include working in the laboratory.

V. QIP (Quality Improvement Program) category

- a. Candidates fulfilling the eligibility criteria as mentioned in 3.1 (Without GATE/ CSIR-NET/ UGC/ NBHM) and a minimum of three (3) years teaching experience as full-time regular/permanent teachers of AICTE/ UGC approved Degree level Institutions are eligible to apply.
- b. An intending sponsored candidate under QIP category must submit his/her application in prescribed form along with No objection certificate (Format available on website) for admission through his/her employer, who will forward the same to the Institute with suitable endorsement.
- c. They are expected to be released for fulltime course work and research at the Institute for a minimum period of three (3) years.
- d. The candidate has to complete the course-work immediately after joining the programme within a period of one to two semesters. Depending on the student's background and the programme requirements, an additional semester may be needed to complete the coursework. After fulfilling the course-work at the Institute, these candidates will be allowed to register for Ph.D.
- e. A sponsored candidate under QIP Category selected for admission shall be required, at the time of joining the Institute, to produce certificate in the prescribed form from the employers to the effect: (i) that he/she has been officially released from his duties for purpose of joining the program and has been granted leave for the required period; (ii) that his services shall be retained with the employer.
- f. There is no provision of any financial assistance for QIP candidates.

3.3. Degrees from IITs/IISc/IIPE/RGIPT

B.Tech degree, Dual Degree (B.Tech & M.Tech), 5 year Integrated MSc degree, 2 year MSc degree (admitted through JAM) holders having final CGPA \geq 8.0 on a 10.0 point scale or 75% (7.0 CGPA or 65% for SC/ST) from Indian Institutes of Technology (IITs), Indian Institute of Science (IISc), Indian Institute of Petroleum and Energy (IIPE) and Rajiv Gandhi Institute of Petroleum and Technology (RGIPT) may be considered for direct admission in Ph.D programme with Institute Research Assistantship

3.5. Special Notes

- a. Department may fix additional admission criteria without compromising the eligibility criteria mentioned here.
- b. Mere fulfilment of eligibility criteria does not give guarantee for admission to the PhD programme.

- c. Any document will be considered as valid if that is valid on or after the date of admission.
- d. The decision of IIPE regarding determination of equivalent degree is final and binding to all applicants.

4. Selection and Admission

The admission of a candidate to the Ph.D. program is recommended by the Institute Academic Committee (IAC) on the basis of

- i. Overall Academic Performance
- ii. Written/Computer Test or Interview or both

5. Payment of fees and deposits:

Every Research Scholar shall be required to pay at the time of joining the following items of fees, at rates as in force for the time being:

(a) Non-refundable

Onetime fee:

i. Hostel Admission, Medical Examination, Student Welfare fund, Alumni Subscription and Modernisation.

Semester Fee:

- i. Tuition fee*, Registration Fee, Examination Fee, Student Amenities.
- ii. Laboratory Fee, Electricity and Water Charges etc., Hostel Charges.

(b) Refundable

- i. Institution Caution Money
- ii. Hall Caution Money
- iii. Library Caution Money
- * 100% tuition fees waiver for SC/ST/PwD students.
- * The above fees are subjected to revision from time to time.

Detail about the fee structure can be seen from our website.

6. Enrolment and course work:

A candidate is required to enrol for the Ph.D. program to carry out research work under a supervisor from amongst the faculty of the Institute. A Research Scholar, including a Faculty member enrolled for Ph.D programme, must have a Supervisor, though he/she may be from exceptionally good academic background having research exposure.

All candidates enrolled for the Ph.D. program are required to complete the course work as prescribed below:

- a. English for Technical Writing (compulsory)
- b. A set of subjects to be recommended by the DSC considering the student's skill requirements for the research work to be under taken by the student and his (or her) academic background to have a credit loading as under.
 - i. For students admitted on the basis of M.Tech. or equivalent degree: Lower limit: 10, Upper Limit: 20

- ii. For students admitted on the basis on M.Tech. or equivalent degree, who had done their qualifying degree 8 years before the admission: Lower limit: 20, Upper Limit: 40.
- iii. For students admitted on the basis of B.Tech., M.Sc. or equivalent degree: Lower Limit: 20, Upper Limit: 40.
- iv. For students admitted on the basis on B.Tech., M.Sc. or equivalent degree, who had done their qualifying degree 8 years before the admission: Lower Limit: 40.

Candidates assigned course work must obtain, in the 7-scale grading system, a grade not lower than 'C' in each of the subjects. If the grade obtained by a candidate in any subject is below 'C', the candidate is required to repeat that subject and clear it with a grade not lower than 'C'. Should the candidate fail to clear the course work within 1 year of enrolment, the DSC may review the performance of the student and recommend a change of course work.

In addition to the assigned course work requirement a candidate is also required to show, before he/she submits the synopsis, proficiency in one of the interdisciplinary subject.

7. Registration

- a. A candidate is required to give a seminar talk on the topic of his research within three years of enrolment or within one year of completion of the course work as the case may be. The seminar talk will be delivered to an open audience with members of the D.S.C. and IAC present. If the seminar is satisfactory the candidate will be allowed to register for the degree. However, if the DSC and IAC is not satisfied by the seminar talk, the candidate will be required to deliver another talk with suitable modification or improvement within the next 3 months. The registration seminar should normally be held within three (3) calendar years of enrolment of a student. Should the candidate fail to clear the registration seminar even on second attempt the enrolment shall be cancelled and the student shall be asked to leave.
- b. Registration of a candidate for the Ph.D. degree shall be effective, normally, from the date of enrolment and shall remain valid for a period of 08 (eight) years. The registration of a candidate may be deferred by the DSC and IAC on account of unsatisfactory progress. A candidate will be required to submit the thesis before the expiry of the registration period. In the event of a candidate failing to submit his thesis within the period, the registration shall lapse automatically.

8. Seminar and Synopsys of Research Work

Prior to submission of the thesis the candidate will submit the synopsis of the thesis and present a seminar to an open audience in which besides others the D.S.C. and D.A.C. (PG&R) members will be present. The seminar lecture will test the candidate's depth of knowledge and progress in his/her research. The candidate shall be allowed to submit his/her thesis for the Ph.D. degree only when the D.S.C. is satisfied about the work. If the D.S.C. is not satisfied with the quality of the work or the general preparation of the candidate, the candidate will have to appear again for the seminar within a maximum period of six months. The thesis must be submitted within one month after the D.S.C. approves the submission on the basis of this seminar.

9. Thesis and Defence

On successful completion of the seminar the DSC will recommend to the Senate a panel of ten experts, from India and/or abroad, to examine the thesis (not more than 5 persons

in the list shall be from India). The thesis shall be forwarded to two experts from the panel who shall submit report separately on the thesis and forward their recommendation to the Registry. Once the reports of the examiners have been accepted as satisfactory the candidate will have to defend his/her thesis before a viva voce board consisting of all DSC members and the Indian 'external' examiner.

10. Award of Degree

A student who has completed satisfactorily all prescribed requirements and has cleared all fees and dues payable to the Institute and the Hostels shall be eligible for the award of Ph. D. degree of the Institute by the Board of Governors on the recommendation of the Senate. The degree shall be awarded at the annual convocation for the academic session in which the student completes the requirements satisfactorily.

Appendix – I

No Objection-Cum-Sponsorship Certificate For QIP Candidate

(To be typed on letterhead of the Sponsoring Institute/ Department/ Organization)

This is to certify that Shri/Smt./	'Miss			working
as	in the Depar	tment		
since	. He /She inter	d to apply for I	Ph.D. Program	me under QIP
category at IIPE Vishakhapatna	m. The Institut	e/ Department/	Organization of	does not have
any objection to his/her a	applying for	the program	me. The ar	oplication of
Shri/Smt./Miss		_ would be con	sidered as per	rules of IIPE
for Sponsorship under QIP Categ	gory along with	leave for minir	num period of	three years, if
he/she selected, for the Ph.D. Pro	gramme.			

Date: Place:

Signature/Endorsement of Head of the Institution/Organization/Department (Office Seal)

Appendix – II

Sponsorship Certificate for Ph.D. Candidate (External)

(To be typed on letterhead of the Institute/ Department/ Organization)

Name of the sponsoring organization :_____ Address: Present Designation of the applicant: Present status of the applicant: _____ (Permanent/Quasi permanent/Temporary) Division where research work is proposed to be done: Name of supervisor from the sponsoring organization: (Please enclose the Biodata of supervisor as given in Annexure-IV) Details of facilities relevant to the research problem which will be made available to the candidate by the organization (Please attach the list of available facilities relevant to the research problem in a separate sheet). If Shri/Smt./Miss._____ is registered for the doctorate degree, I agree to act as his/ her research Co supervisor along with the research Supervisor from IIPE Visakhapatnam. Signature of proposed Co supervisor If Shri/Smt./Miss. ______ is admitted to the Ph.D. programme, we shall allow him/ her to undergo the Doctoral programme of studies at IIPE Visakhapatnam. Further, if Shri/Smt./Miss. ______ is admitted to the Ph.D. programme, we shall fully relieve him/her from normal duties to complete the course work requirement (and qualifier examination, if applicable) at IIPE Visakhapatnam. During the period of Doctoral programme, the candidate will be permitted to carry out his / her research work at our laboratories / organization and will be given the required facilities. We also give our consent to ______ of our organization to be the Co supervisor (external) of the Ph.D. thesis, along with a faculty member of IIPE

> Signature/Endorsement of Head of the Institution/Organization/Department (Office Seal)

Date: Place:

Visakhapatnam as the Supervisor.

Appendix – III

Particulars of Co-supervisor for Sponsored candidate (External)

In addition to being in a position to ensure technical and logistic support to the PhD scholar in his/her research work in the organization, the Co- supervisor must have a minimum academic qualification of a Master's degree in Engineering/Management or Ph.D. in Science/Humanities & Social Sciences and adequate professional experience in the relevant field. The Co- supervisor should not himself be a scholar working for any higher degree of any university. He will be an invitee to the DSC meetings at IIPE Visakhapatnam.

- 1. Name of proposed Co- supervisor:
- 2. Designation of Co- supervisor:
- 3. Department/ Division:
- 4. Academic qualifications of Co- supervisor:
- 5. Membership (if any) in Professional societies for Co- supervisor:
- 6. Publications (if any):

Signature of proposed Cosupervisor

Date:

Place: