

PANDIT DEENDAYAL ENERGY UNIVERSITY
Formerly Pandit Deendayal Petroleum University
RAISAN, GANDHINAGAR-382007, GUJARAT
Ph. D. RULES

(For the students admitted in academic year 2016-17 & onward)

1. GENERAL

- 1.1 The University awards the degree of Doctor of Philosophy (Ph.D.) to a candidate who has successfully completed the stipulated programme of Research at the University.
- 1.2 The Programme of Research with the governing rules and regulations is formulated by the University. The Director General subject to approval by the Standing Committee or Board of Governors can modify or change the structure, the governing rules and regulations from time to time which shall be binding to all.
- 1.3 A candidate to be awarded the Ph.D. degree has to submit a thesis embodying the findings of his research carried out in this programme. The thesis should make an original contribution of high quality to the advancement of knowledge as judged by experts in the relevant area.
- 1.4 A candidate becomes eligible for the award of the Ph.D. degree after fulfilling all the academic requirements prescribed by the Academic Council of the University.
- 1.5 The award shall be made upon the recommendation of the Academic Council of the University and after approval by the Standing Committee of the Board of Governors of the University.

2. CATEGORIES OF Ph.D. STUDENTS

The University admits students for Ph.D. programme under the following categories:

2.1 REGULAR (FULL-TIME)

This category refers to the candidates who work full time for their Ph.D. and may receive fellowship/assistantship from the University as per its policy or fellowship from CSIR/UGC or any other recognized funding agency or may be self-financed.

2.2 SPONSORED STUDENTS (FULL-TIME)

A candidate in the category is sponsored by a recognized R&D organization, national institute, academic institution, govt. organization or industry for doing research in this University on a full time basis. He should have at least two years of working experience in the respective field. He will not receive any financial support from the University. Sponsorship letter (Form-I) is to be submitted at the time of confirming the admission.

2.3 PROJECT STAFF (PART-TIME)

This category refers to the candidates who are working on sponsored projects in any School of this University and admitted to the Ph.D. programme. *The duration of the project at the time of admission should be at least 2 years.*

2.4 LOCALLY & PROFESSIONALLY EMPLOYED PERSONNEL (PART-TIME)

This category refers to the candidates who are locally and professionally employed personnel. These candidates should be able to meet supervisor(s) regularly in this University for the guidance on their research work. The applicant must be a regular employee of a recognized R&D organization, national institute, academic institution,

government organization or industry at the time of admission and be engaged in professional work in the discipline in which admission is sought. No financial assistance will be provided by the University to such students.

“No Objection Certificate” from the Head of the Institute/Organization in which he is employed (Form-II) is to be submitted at the time of confirming the admission.

2.5 SPONSORED STUDENTS (PART- TIME)

This category refers to candidates employed in R&D organizations related to Science, Technology, & Engineering having adequate research facilities. The research work leading to the Ph.D. degree may be carried out largely in the parent organization of the candidate under a Co-supervisor) from the organization but with the overall guidance and advice provided by a faculty member i.e. Supervisor of this University under whom he is registered. The appointment of the Local Supervisor is to be reported to the Director General of the University through the Director of the concerned School for final approval as per the norms. Sponsorship certificate from the Head of the organization where the candidate is employed (Form III) is to be submitted at the time of confirming the admission.

No financial assistance from the University will be provided to such students.

3. MINIMUM QUALIFICATIONS

A student seeking an admission to Ph.D. Programme of the University is required to have minimum educational qualification as mentioned hereunder:

Master's or a professional degree declared equivalent to it by the corresponding statutory regulatory body, with 55% marks in aggregate or its equivalent grade 'B' in UGC 7 point scale, (or an equivalent grade in a point scale wherever grading system is followed). A relaxation of 5% of marks, from 55% to 50%, or an equivalent relaxation of grade, may be allowed for those belonging to SC/ST/OBC (non- creamy layer)/ differently abled and other categories of candidates as per the decision of the Commission from time to time.

Candidates possessing a Degree considered equivalent to M. Phil. Degree of an Indian Institution, from a Foreign Educational Institution accredited by an approved Assessment & Accreditation Agency which is approved, recognized or authorized by an authority, established or incorporated under a law in its home country or any other statutory authority in that country for the purpose of assessing quality and standards of educational institution, shall be eligible for admission to Ph. D. programme.

The requirement of the Master Degree shall be subject to following area specific requirements:

- i. For research in an area of Engg./Technology**
M.Tech./M.E. or its equivalent in appropriate area.
- ii. For research in an interdisciplinary areas like Petroleum Engg., Solar Engg., Nuclear Engg., and Environmental Engg. & Studies**
M.Tech./M.E./M.Sc./M.Sc.(Tech.) or its equivalent in appropriate area.
- iii. For research in an area of Sciences**
M. Sc. degree or its equivalent in appropriate area.
- iv. For research in an area of Management**

M.B.A./M.Tech./M.E./A.C.A./A.I.C.W.A./A.C.S. level or its equivalent in appropriate area.

v. For research in an area related to Liberal Studies

M. A. degree or its equivalent in appropriate area.

4. ADMISSION PROCEDURE

4.1 Admission to the Ph. D. programme shall be given once in a year i. e. at the start of Academic Year through a written test and interview. The no. of admission seats will depend on the no. of available Research Supervisors, research interests of scholars, and academic & physical facilities available.

An announcement for admission and its rules shall be made on the website of the University and also in newspaper appropriately.

Candidates whose selection is approved by the Director General of the University will be admitted to the Ph.D. programme on payment of the prescribed fees.

4.2 In the case of Sponsored students (Part Time), the following additional conditions are to be satisfied:

4. 2.1. The candidate must submit full details of the facilities relevant to the research programme available in the organization where he is employed, duly certified by the sponsoring authority. In case of lack of facilities, the candidate will have to submit a certificate from sponsoring authority that required facilities will be made available by the organization.

4. 2.2. In such cases, Bio-data of the Local Supervisor should be submitted for consideration of Dean of the concerned Faculty and for approval of the Director General of the University on recommendation of the Director of the concerned School.

4.3 The prevalent fee structure will be made available at the time of admission.

5 LEAVE

5.1 A regular full time Ph.D. student is eligible for 30 days of leave in an Academic Year.

5.2 A regular full time female Ph.D. student is eligible for 3 months of maternity leave once during the entire period of her Ph.D. programme.

The maternity leave period will not be countable as a part of minimum required duration of Ph.D. completion.

6 ACADEMIC REQUIREMENTS

6.1 Supervisor(s)

(a) Every student admitted to the Ph.D. programme of this University must carry out his research work under the guidance of faculty member of this University holding a Ph.D. Degree. This faculty member will be called as the Supervisor of the student. If

a part of the research work is carried out in industry, reputed institute or R&D laboratory, a Co-Supervisor, holding a Ph. D. degree, may be recognized by the University from that industry, institute or R&D laboratory in consultation with the head of the organization as per the norms.

- (b) In case of interdisciplinary or in any area of research requiring another supervisor, the a co-Supervisor from a related discipline can be nominated under the concurrence of the Supervisor and further an approval from the Chairman-Academic Council to the recommendation of the concerned Dean in the matter shall be necessary. In the same way a research scholar may be permitted to have not more than two nos. of co-Supervisors. The proposed co-Supervisor must have been recognized by the University as the Supervisor. Whenever there is a co-Supervisor, communications pertaining to research progress, change of title, submission of the synopsis and thesis etc. shall have to be routed through the Supervisor/s.
- (c) Eligibility criterion for the recognition of the Supervisors shall be as under: Only full time teacher of the University can act as a Supervisor. Co-supervisor can be allowed in inter-disciplinary areas from other institutions with approval of Doctoral Committee. A Supervisor will be recognized by the Director General after the recommendation made by the concerned Dean or any other body/person designated for it subject to the fulfillment of following criteria:

➤ **Internal Supervisor:**

He/She must have a Ph.D. degree from a recognized University or an equivalent institution and desirable to have sufficient experience of PG teaching &/or independent research, and substantial research publications/projects to his/her credit in refereed journals, which can qualify him/her for guiding competently the research student, as a part of which he/she is required to have registered at least two nos. of international patents, or published the research papers in international peer reviewed journals as shown hereunder:

Regular professor with at least 5 research publications, any regular Associate/Asst. Prof. with Ph. D. and at least 2 research publications in referred journals- all this post Ph. D. as a lead author, may be recognized as Research Supervisor.

Such research paper/s should have been published in the journals indexed in Scopus or Web of Science only, or in journals like ASME, Springer, IEEE, and such other journals of comparable quality standards.

In case of areas/disciplines where there is no or only a limited no. of referred journals, this conditions may be relaxed with reasons recorded in writing.

Citation index/impact factor of the concerned journals publications have to be adequate. An aspirant seeking the recognition will have to apply in a format as prescribed by the University.

➤ **Co-supervisor from outside Institutions:**

- I. The candidate must have Ph. D. Degree (in the relevant and / or similar field) awarded by the university recognized by the University Grants Commission of India.

The candidate is required to be in active/regular service of other University (approved by UGC/AIU/AICTE)/ Research & Development Organization/ Laboratory/ Renowned Institute/ Corporate/ Public administration/ NGO.

- II. The candidate must have at least 5 years of teaching/ research experience post Ph.D.
 - III. The candidate should have a minimum five publications in peer reviewed Indian/ foreign journals of repute having ISSN number after getting Ph. D. degree. Out of these five publications, at least two research papers should be in the journals included in the reputed data bases such as Emerald, Elsevier, Springer, Taylor and Francis, Science Direct etc. with his/her name as first author.
 - IV. The recognition will be granted only upon application and having fulfilled all the requirements and subject to the scrutiny. There is no automatic recognition. The recognition of Ph.D. guide would be valid for 5 years, which can be further renewed.
 - V. External Ph. D. Supervisor Selection Committee will be constituted to consider the applications referred at point no. 4. The said committee will comprise of concerned school director, subject area faculty at PDPU and external subject expert having substantial contribution in the relevant area.
 - VI. UGC rules and regulations pertaining to Ph. D. guide needs also to be adhered to prevailing from time to time.
 - VII. Notwithstanding what is stated above, the Chairman, Academic Council, reserves the right to approve or, derecognize anyone as research Guide, depending upon the merit of the case.
- (d) A Research Supervisor/Co-supervisor who is a Professor, can guide upto 8 Ph.D. scholars; an Asso. Professor up to 6 Ph.D., & an Asst. Prof. 4 Ph.D. scholars; inclusive of all, at any given point of time. However he shall not have more than three students at a time if another Supervisor in the same field is available with less than three students under him. All this subject to the fulfillment of all duties assigned from time to time to him.
- (e) The School Supervisor shall be referred as Supervisor. He/she would be referred as Main Supervisor in case there is a co-supervisor either from within the University or outside the University to a student under him/her.

6.2 Appointment of Supervisor(s)

- 6.2.1 The concerned Faculty-Dean in consultation with the respective School-Director and the Director General of the University will appoint the Supervisor(s) of Ph.D. students.
- 6.2.2 The Supervisor(s) should be identified and appointed at the earliest and within a month from the date of admission.
- 6.2.3 Sponsored students (part time registration) shall have one Supervisor from the

University and one from the parent organization.

6.3 Change of Supervisor(s)

- a) The Director General of the University may permit a student to change his Supervisor(s) for valid reasons on recommendation of the respective Doctoral Committee.
- b) If a Supervisor of a Ph.D. student leaves the University, then either the Supervisor who left the University if yet found in a position to continue guiding the student properly he/she may be allowed to continue in the matter; or any other Supervisor with required expertise can be nominated as a Supervisor as per the University Rules if found in a position to supervise the student properly may be allowed for the same.
- c) In case of relocation of an Ph.D. woman scholar due to marriage or otherwise, the research data shall be allowed to be transferred to the University to which the scholar intends to relocate provided all the other conditions in these regulations are followed in letter and spirit and the research work does not pertain to the project secured by the parent institution/ supervisor from any funding agency. The scholar will however give due credit to the parent guide and the institution for the part of research already done.

6.4 Doctoral Committee (DC)

6.4.1 To monitor the progress of research of the students, there will be separate committee for each Ph.D. student, called Doctoral Committee (DC) consisting of

- (a) The School Director under whom the area of the research falls-----
Chairman
- (b) The Dean of the Faculty under whom the area of the research falls----
Member
- (c) A faculty member from another School/Department, nominated by the DG-
---**Member**
Role & Responsibility
 - i) To observe proper conduct of the DC meeting.
 - ii) To observe transparency in the conduct of the DC meeting.
 - iii) Though the domain discipline of the Ph.D. student would be different from that of the DC member of other School/Department, such DC member should contribute in giving his resourceful inputs for proper furtherance of student's research from time to time at the DC meetings, and also sharing his research insights.
- (d) The Supervisor/s----**Member & Committee Convener**
- (e) HoD under whom the area of the Research falls-----**Member**
- (f) An external research expert nominated by the Director General---**Member**

The School Director and the Dean will be invitees at the Doctoral Committee (DC) of Ph. D. students. They will attend the meetings of the DC of Ph. D. students at their own discretion, besides overall supervision and monitoring of Ph. D. processes for all students. In case a HoD/Area Head himself is a

Supervisor to a student, a senior faculty member of the Department will be the Chairperson of the DC for that particular student.

For every doctoral student the Director General of the University will nominate an external expert based on the recommendation of the Chairman- Doctoral Committee, or any other external expert; relevant to the student's field of research as a member on the Doctoral Committee.

The Doctoral Committee will monitor the students' progress and allied matter. The Dean shall constitute the Doctoral Committee within one month from the last date of admission.

6.4.2 At the end of every semester the Supervisor will convene the DC meeting in consultation with the Chairman, for evaluation of the research progress work submitted by his Ph.D. student.

6.4.3 The Committee shall have the following responsibilities:

- i) To review the research proposal & finalize topic of research.
- ii) To guide scholar to develop the study design and methodology of research & identify course(s) that may have to do.
- iii) To review the progress of research periodically.

6.4.4 The Chairman- Doctoral Committee can delegate the power to conduct the meeting of the Doctoral Committee to the concerned HoD/Dean as per the requirements as and when required.

6.5 Course Work

6.5.1 The DC shall have to be constituted & thereupon to call its first meeting within one month from the date of admission of a candidate to finalize the coursework-detail & work-plan of the student. The learning objectives and design of the course work should also be discussed and intimated to the student in this meeting. The course work detail for Ph. D. student should be identified by the Supervisor and then to be vetted by the Doctoral Committee.

(Please refer the annexure- I.)

6.5.2 The approved self-study courses can be the part of Ph. D. course work for the respective ph. D. Students.

The overall evaluation of the course work will be broadly as mentioned hereunder:

1. 50% Internal Assessment/in-semester assessment. This will cover different components from following basket:

Component	Suggestive Weightage
Assignments	15%
Quizzes	10%
Term Paper/working paper presentation	20%
Relevant literature review/preparing annotated bibliography	20%
Interactive tutorials	10%
Project presentation/case presentation	20%

Class Participation	10%
Detailed Book review of at least 3 books for a course/Review of Research and Experimentation	20%
Mid Sem. exam.	25%
For Technical Courses	
a) Hands on Lab Experience	20%
b) Simulated labs	20%

2. Semester End written exam.: 50%

The credit assigned to the course work shall be a minimum of 08 credits and a maximum of 16 credits. The credit for a course i.e. no. of instruction hours per week is obtained by using a multiplier of one (1) for lecture hours, one (1) for tutorial hours, & half (1/2) for laboratory hours. The evaluation pattern for the course work of every candidate should be as per the direction of the Doctoral Committee, and it will be as applicable for the PG evaluation. The level of the course work is to be at the level of the PG.

All candidates admitted to the Ph.D. program shall be required to complete the course work or during the initial one or two semesters. Under any exceptional circumstances/situation, an extension is granted for the course work completion on the basis of the recommendation of the Dean and the DC-Chairman, then such additional time period taken for course work completion shall be deemed to have been appended to the prescribed minimum duration of the programme.

A minimum 04 credits shall be assigned to one or more course/s on Research methodology to cover areas such as qualitative methods, computer applications, research ethics and review of published research in the relevant field, training, field work, etc., for the students admitted prior to the A. Y. 2020-21.

Other courses shall be advanced level courses preparing the students for Ph.D. degree.

A Ph.D. scholar has to obtain minimum 55% marks or its equivalent grade in the course work in order to be eligible to continue in the program & submit the thesis.

The length of each course has to be equivalent to teaching/learning of it at least 3 hours per week per semester. Evaluation of every course is to be made as per the following condition:

Grade Point	Letter Grade	Marks Obtained	Grade Point	Letter Grade	Marks Obtained
10	O (Outstanding)	≥80	6	B(Above Average)	50-54
9	A+(Excellent)	70-79	5	C(Average)	45-49
8	A(Very Good)	60-69	4	P (Pass)	40-44
7	B+(Good)	55-59	0	F(Fail)	<40

The overall performance index for the completion of entire course work is to turn out as minimum 06 as equivalent to 55% as per the following performance to percentage conversion formula:

$$\text{PERCENTAGE} = \frac{(\text{CPI} - 0.5)}{0.1}$$

For the students admitted prior to the A. Y. 2020-21, a course other than Research Methodology should carry maximum 3 no. of credits as a part of Ph. D. course work. Accordingly minimum 03 nos. of courses including research methodology are to be passed by the Ph. D. student to meet the requirement of minimum 08 credits for coursework.

For the students admitted prior to the A. Y. 2020-21, a course on “Research Methodologies and Publication Ethics” (RMPE) of total 4 credits shall also have to be pursued with effect from the A. Y. 2020-21. *For imparting this course, total 10 hours may be spared to deliver on Research and Publication Ethics. The course delivery on Ethics component should be an activity based which may contain workshops/symposium/paper presentation etc.* They shall have to pass minimum two courses related to their research discipline, each of 3 credits as a part of the coursework requirement, besides the course of ‘RMPE’. Thus total minimum credits of the entire course work is to be 10.

6.6 Comprehensive Examination

- 6.6.1 To test the overall competence and academic preparation of the student in the relevant field and specific area of the research programme, a Comprehensive Examination is to be held soon after the completion of the coursework through Doctoral Committee, which will comprise of the following:
- i. Oral examination of 60 marks
 - ii. Written examination of 40 marks

The comprehensive examination will test the learning outcome of the course work and the perspective clarity for research endeavors.

The guidelines for conducting the examination for both the components of comprehensive examination are provided in Annexure – II.

To pass the comprehensive examination, the student should obtain minimum 50% of the marks in each component, i.e. minimum 30 marks in oral examination and minimum 20 marks in the written examination.

The marks for the Oral Examination should be recorded in the prescribed format as shown in Annexure – III.

The overall evaluation of comprehensive Examination to be recorded by the respective supervisor in the prescribed format as shown in Annexure – IV.

- 6.6.2 A student failing in the Comprehensive Examination in the first attempt will be given a second Comprehensive Examination after 1 month but before 6 months from the date of the first Comprehensive Examination. If a student fails in the second attempt he will be asked to leave the Ph.D. programme.

6.7 Registration for Ph.D. Programme

After the successful completion of the Course Work and Comprehensive Examination, the candidate has to submit a plan of work defining the research problem identified and course of investigation proposed to be pursued. An assessment of the status of problem

area and a justification for the work has to be projected at this time. The student will make an oral presentation of the above proposal at a meeting of the Doctoral Committee (DC) for approval.

At the start of every semester, its Fee receipt is to be submitted by the students to the school admin for getting recorded in their personal file.

Conversion of Full Time candidature into Part Time may be possible only for genuine reason if recommended by the School Director, Dean, HoD & Supervisor.

The students are required to keep themselves updated with different Notices, Circulars etc. & revisions in the rules if any from time to time informed through Email/Website/Notices. For this the students have to check their email Ids allotted to them through the University and also to check the University website/notice board regularly.

6.8 Progress Review

- a) A report containing the work done during a bygone semester & also a work plan for a forthcoming semester shall have to be presented by the research scholar to the Doctoral Committee through the Supervisor in the review meeting at the end of every semester. The DC would evaluate the work done by every candidate in a prescribed evaluation format.

A research scholar shall appear before the Doctoral Committee once in six months as per the announcement to make presentation of the progress of his/her work for evaluation and further guidance. The scholar has to obtain a copy of the evaluation report for every semester from the Admin through the Supervisor.

In case the progress of the student is unsatisfactory, the committee shall record the reasons for it & suggest corrective measures. If the student fails to implement these corrective measures, the committee may recommend for cancellation of the registration of the scholar.

The Supervisor/s shall monitor the student on continual basis through discussions, reports and presentations.

If a student fails to defend the respective semester-end Progress review meeting/s, the respective nos. of semester/s shall not be counted for the minimum duration of Ph.D. If a student fails to attend two nos. of DC meetings consecutively, he/she shall have to reregister; his/her passing the course work if any shall not have to be repeated.

The thesis title needs to be finalized by the end of the comprehensive examination.

If a student requests for change of research area at any time he/she may be permitted to do so with the condition that he/she would be eligible to submit his/her thesis not earlier than two years from the date of approval to such change.

- b) Every Ph.D. student shall have to get published to his/her credit at least two research papers in refereed journal, and make two more paper presentations in conferences / seminars as per the Supervisor's directive; before the submission of the thesis for

adjudication, and produce evidence for the same in the form of presentation certificates and/or reprints, along with the Supervisor's certification in the matter. The student needs to be the lead author if the paper/s published jointly.

Further the students are required to publish their research paper/s in the journals indexed in Scopus or Web of Science only, or in journals like ASME, Springer, IEEE, and such other journals of comparable quality standards; to make them counted appropriately for research publications required before the submission of the thesis. Additionally, a publication if any in paid journal will not be given weightage in this regard.

6.9 Semester Registration

Students of all categories in the Research Programme will have to register themselves in person upon paying the necessary fees in the first week of every semester or on the stipulated dates as the case may be till the submission of their thesis.

Nonpayment of fees in time will be treated as lack of interest of the student in continuing the programme and his/her admission will deem to be cancelled automatically.

6.10 Cancellation of Registration

The registration of a student is liable to be cancelled for any of the following reasons:

- a) Consistent lack of progress in research.
- b) Violation of Discipline and Conduct Rules of the School and this University.
- c) Non-submission of the thesis within the stipulated period.
- d) Non-conformity with the rules and regulations of the programme.
- e) Giving false information at the time of application/admission.
- f) Not completing the course work as per the prescribed norms.
- g) And for any other reason with reference to this rules set.

6.11 Duration of the Ph.D. Programme

The duration of the Ph.D. Programme shall be as follows:
Minimum 3 years, & maximum six years; from the date of admission including course work.

The women candidates & Person with Disability (more than 40% disability) may be allowed relaxation of two years in the maximum duration.

6.12 Synopsis of thesis

- 6.12.1 At least 2 months prior to the submission of the thesis, the student shall provide a copy of the synopsis of his research to every member of the DC through his/her supervisor. The synopsis will contain an outline of the research work done by the student. The first draft of the thesis must be ready at the time of pre-synopsis seminar and a one copy of it should be made available to the Doctoral Committee.

- 6.12.2 The student shall have to make a pre synopsis presentation before the DC, which shall be open to all Faculty members, and other researcher scholars, interested experts/researchers of the University. The feedback and comments received during the presentation may be suitably incorporated into draft thesis under the guidance of the Supervisor. The DC will, if it approves, permit the student to submit the thesis and forward the synopsis to the Examination Section.
- 6.12.3 Ph. D. students will have to present their Research Progress at the Symposium at least once, prior to appearing at the pre-synopsis meeting before the Doctoral Committee (DC).

The candidate through Supervisor(s) shall submit to the Examination Section, a soft copy (in PDF version) and a hard copy of the synopsis- signed by the Doctoral Committee Chairman- of the thesis, within seven days from the date of successful completion of pre-synopsis seminar. The synopsis should be typed on A4 size paper using one and half line spacing. The length of the synopsis should be between 10-12 pages including tables and figures.

The Supervisor(s) should ensure that the literary presentation of the synopsis is of acceptable standard and the technical contents of the synopsis clearly spell out the research contribution that will be detailed in the Ph.D. thesis later.

6.13 Panel of Examiners

The Chairman-Doctoral Committee, Dean and Supervisor will jointly recommend five names in each category i.e. Indian and Foreign from other Institutes/Universities/R&D Organizations to the Chairman, Academic Council for appointment of Examiners.

6.14 Submission of Thesis

- (a) A student shall submit through the Supervisor initially two copies of his/her thesis embodying the results of investigations in the prescribed format, within six months or at least two months after, as the case may be, from the date of submission of the synopsis. However a request for grant of time beyond six months period, if the student appeals with valid reasons, well before the prescribed due date can be reviewed by the Supervisor and be sent for its approval to the Doctoral Committee. This exemption will not be applicable beyond the last date of submission of the thesis. The student has to pay the semester fees for the semester in which the thesis submitted. The scholarship/financial assistance if any, can continue till the time of the thesis submission, but not beyond maximum permissible time period of the scholarship.

At the time of submission of thesis, the student has to pay the prescribed Ph.D. viva-voce fees.

After the Ph.D. viva-voce, the student shall have to submit further at least one copies of the updated/revised/corrected thesis as directed by the examiners, within a week to the University.

- (b) The thesis submitted for the Ph.D. degree shall contain (also in a form of the statement) an account of the research work carried out by the student leading to

the discovery of new facts or techniques or new correlation of facts already known (analytical and or experimental and or hardware oriented in nature), the work being of such quality that it makes a definite contribution to the advancement of knowledge. The student shall further forward a statement indicating the sources from which the information has been derived & the extent to which he has based his work on the work of others; and shall indicate which portion or portions of his/her thesis the student claims original.

- (c) A student will not be permitted to submit as his thesis, a thesis for which a degree has been conferred on him/her in this or any other University, but a student shall not be precluded from incorporating the work which he has already submitted for a degree in this or in any other University, in a thesis covering a wider field, provided he/she indicates in a written statement accompanying the thesis any work which has been so incorporated.
- (d) While submitting for evaluation, the thesis shall have an undertaking from the research scholar and a certificate from the Supervisor/s attesting to originality of the work vouching that there is no plagiarism checked through the software as prescribed by the University and found within limit i.e. permitted similarity index $\leq 10\%$, and that the work has not been submitted for the award of any other degree/diplomas of any institution. It is necessary to comply with the UGC (PROMOTION OF ACADEMIC INTEGRITY AND PREVENTION OF PLAGIARISM IN HIGHER EDUCATIONAL INSTITUTIONS) REGULATIONS, 2018.
- (e) The following are to be submitted along with the thesis:
 - I. Certificate from the Research Supervisor(s) confirming that the thesis contains *bona fide* work carried out by the candidate and that the thesis does not contain any work, which has been previously submitted for the award of any degree.
 - II. A certificate from the candidate countersigned by the Supervisor(s) stating that the thesis does not contain any classified information, or the requisite permission has been obtained from the concerned authority for using such information.
 - III. Copyright form transferring all copyrights to the Institute.
 - IV. Certificate of the Examination Section that requisite courses, if any, have been cleared by the candidate.
 - V. Cash receipt of Examination / Evaluation fee.
The items mentioned above in Clauses i, ii, & iii must form a part of the thesis, and items mentioned above in Clauses iv & v are to be submitted separately.
- (f) The Ph.D. registration of the student, who fails to submit his thesis within the prescribed maximum duration of the Ph. D. programme shall automatically stands cancelled.

6.15 Examiners of the Thesis

The thesis shall be evaluated by the supervisor and at least two examiners (one from India and the other from abroad) chosen by the Chairman, Academic Council from the panel of examiners recommended by the DC. The copies of the synopsis shall be first sent to the chosen examiners for their consent to examine the thesis. Once they agree the submitted thesis shall be sent to them.

6.16 Thesis Reports

- a. The examiners are expected to send their evaluation reports their evaluation on the thesis within two months from the date of receipt of the thesis. Both the external examiners shall individually report in the prescribed format to the Examination Section regarding recommendation for the award of the Degree, and the evaluation report as to whether the thesis should be accepted or rejected or resubmitted in modified form and if their report is unanimous, it shall be treated as final.
- b. If an examiner does not send the report within 2 months, a reminder will be sent by the Examination Section. If the report is not received within 6 months, the Director General will refer the thesis to another examiner from the approved panel. The appointment of the examiner who has not sent the report within 6 months shall be deemed to have been cancelled.
- c. If an examiner suggests re-submission of a thesis, after revision, the student will re-submit the thesis within six months or at least two months after, as the case may be, failing which the revised thesis will not be accepted and his/her registration shall be cancelled. If the student desires more than six months for the submission of the revised thesis, he/she shall have to obtain the permission by the Director General upon the recommendation of the Doctoral Committee in the matter.
- d. The thesis-evaluation report of all the examiners shall be treated as final if the report from all of them is found unanimous.

The Viva-voce of the research scholar to defend the thesis shall be conducted only if the evaluation reports of all external examiners on the thesis are satisfactory and include specific recommendation for conducting the viva-voce examination.

- e. The following procedure shall be observed in case of rejection of the thesis on certain grounds by any one examiner:
 - (i) The thesis will be sent back to the student to correct within six months, failing which the revised thesis will not be reprocessed and his/her registration will be cancelled. In case of the thesis so revised it shall be sent to a third examiner out of the panel for the evaluation.
 - (ii) In the event of rejection of thesis even by the third examiner appointed as above the registration of the student shall stand cancelled.
- f. If two of the examiners recommend the award of Ph.D. Degree, the DC will consider the reports and recommend the conduct of Oral Examination.
- g. In all other cases, not covered by the above rules, the matter will be referred to the Academic Council for a decision.

6.17 Oral Examination

- a. On receipt of the satisfactory evaluation reports from all examiners for the thesis of the student, the student shall undergo a viva-voce examination which has to be defended openly. The Viva-voce examination, based among other things, on the critiques given in the evaluation report shall be conducted by the Research Supervisor and at least one of the two external examiners, and shall be open to be attended by members of the Doctoral Committee, all faculty members, other

research scholars and other interested experts/researchers. The Doctoral Committee shall ensure the sanctity and due process/propriety of the examination. An Indian external examiner and the internal examiner/s (i.e. the Supervisor/s) shall evaluate the performance of the student at the viva voce examination regarding the performance of the student at the viva-voce exam, whether it is satisfactory or not; which shall be placed before the Chairman-Academic Council for his consideration. If the report is unanimous it shall be treated as final. For the dissatisfactory performance also, the reasons shall have to be specified by the examiners.

In case one or more examiners may ask the student to reappear for the oral examination, the reasons for the same shall be specified by the examiner/s. The student shall also be informed of the reasons and shall be permitted to present him/herself for the Viva-Voce after three months but not later than six months from the date of the first viva-voce. This shall be the second and last chance of the viva-voce exam for the student. On this occasion if at least any one of the examiners evaluates the performance of the student as dissatisfactory, the registration of the student shall be cancelled.

In the absence, however of unanimity of opinion among the examiners at the first defense i.e. whether the performance of the student is satisfactory or not, the following procedure shall be adopted: the student may be asked to reappear for oral examination after a period of not less than three months and not later than six months from the date of first viva-voce. On the second occasion if at least any one of the examiners evaluates the performance of the student as not satisfactory, the registration of the student will be cancelled.

The viva-voce examiners may also recommend revisions to be made in the final version of the thesis after taking into consideration the suggestion of the examiners who evaluated the thesis and the evaluation at the oral examination. The OEB shall send the report to the Chairman- Academic Council certifying that the recommended revisions, if any, have been incorporated in all copies of the thesis.

The student shall not be considered eligible for the degree unless all the examiners at least on the second occasion unanimously find his/her performance satisfactory.

b. (I) The examination section will communicate the date and time of the Ph.D. viva voce to the main Supervisor.

(II) The main supervisor will ensure in advance the following:

1. Proper compliance from the student under his supervision to all the remarks referred by the thesis evaluator/s.
2. Arrangement of the Ph.D. open defense/viva voce in a class room.
3. Informing the student about the schedule of the Viva Voce and availability of necessary physical setup thereat.
4. Informing all members of the Doctoral committee to attend the Viva Voce as per the schedule and availability of all required reports to them.
5. Informing the schedule to Ph.D. & Master Degree students, Project/Research Associates/Assistants and faculty members across the University for attending the open defense.
6. All school directors will direct their admin, also to display the schedule over the notice board inviting all interested at the open defense.

6.18 Award of Ph.D. Degree

- i) If the performance of the research student in the Oral Examination is satisfactory, he will be awarded Ph.D. Degree based on the recommendation of the Academic Council and with the approval of the Board of Governors of this University.
- ii) In any case where the result of an examination has been ascertained and published, and & it is prima facie found that such result has been affected by any malpractice, fraud or any other improper conduct on the part of a student, the Director General shall appoint an ad-hoc committee to examine the matter and seek its opinion. If the opinion of the Committee confirms the mal practice on the part of the student for seeking benefits, following the process of natural justice, the Director General shall amend the result as deemed necessary and order the withdrawal of the certificates/prizes/awards from the student.

6.19 Scope

- a) These rules should be read as a whole, for the purpose of any interpretation.
- b) In case of any doubt or ambiguity in the interpretation of the above rules, the decision of the Director General is final.
- c) The University may change or amend these rules, course structure or syllabi at any time, and the changes or amendments made shall be applicable to all students from time to time.
- d) Disputes, if any, shall be subject to Ahmedabad jurisdiction only.

Ph. D. Course Work Outline Format

1. Course Description
2. Learning Outcomes
3. Pedagogy to be adopted by the supervisor
4. Recommended Course material and reading References, Journals, web links etc.
5. Course work components: It should comprise of a balanced mix of the 3 or 4 of the following components:
 - The doctoral scholar may be asked to attend some course allied to his domain discipline and to his doctoral research topic, if at all offered in the current Master's program
 - Writing case/s related to his area of concentration; or writing a review of literature; or preparing a detailed annotated bibliography on the topic of study.
 - Developing a term paper on related topic
 - Developing a working paper on the related topic
 - Interactive tutorials
 - Lab experience- hands on, simulation, demo etc.
 - Relevant literature reviews with periodic discussion with supervisor
 - Actual class room teaching for 8 to 10 sessions
 - Any other component that supervisor thinks fit to incorporate such as seminar

Guidelines on Comprehensive Examination for Ph. D. students

The purpose of Comprehensive Exam after the completion of course work is to ensure

- i) That the doctoral student has grasped the theories, constructs and concepts in his/her respective area of research.
- ii) That he has an ability to have a comprehensive view of his/her area of research.
- iii) That he/she has competence to demonstrate the required preparedness to enter into the dissertation phase.

The comprehensive exam is a checkpoint that confirms that he/ she is now ready to pass from a status of student to a status of scholar. Comprehensive exam evaluates his/her ability to articulate concisely his proposed research work in both written and oral formats.

1. Written Component: 40 marks

This examination component should be conducted firstly, followed by the oral examination. It may be conducted by the concerned supervisor of the student.

This examination should evaluate overall competence and academic preparedness of the student relevant to the research area to be pursued by him/her.

There should be normally two questions drawn from each course of the course work, as minimum two questions with options are required to be asked to incorporate the key contents and concepts of a respective course. Each full question would carry 10 marks.

The duration of examination should be 2 hours.

The questions will not be simple, direct questions like

Define.....

or

What is the meaning of.....

But it will be like, 'Critically analyse.....

'Do the SWOT analysis of..... etc.

2. Oral Component: 60 marks

At this examination, the research student shall present before the Doctoral Committee, the details of the course work undertaken by him, including the content of each of the courses he passed and its examination scheme.

The student would first make a presentation before a committee on the topic selected by him in consultation with his/her supervisor. The topic is to be borrowed from the courses he/she learnt during his/her course work. The presentation should be of 20-25 minutes duration followed by the defence by the student before the committee.

The Committee would evaluate him/her on several criteria such as

- i). Clarity of the concepts, constructs and theories included in his/her presentation.
- ii). Analytical skills and aptitude for research methods
- iii). Communication skill
- iv). Preparedness to enter into the next phase of commencement of Doctoral research work.

The defense should be for 35 to 40 minutes. The total duration of Oral component should be of 1 hour.

The oral examination is to be followed by the written examination but may not necessarily be scheduled on the same day. It could be held with a gap of a day or two.

Doctoral Committee meeting exclusively for overall evaluation of the Comprehensive Exam:

At this meeting, the Committee will conduct the oral examination of (60 marks) of the student. Also the Supervisor will present his evaluation of written component examination, to the Committee.

The overall evaluation of the comprehensive exam will have to be recorded in the prescribed evaluation sheet.

The written answer book and the question paper of the written examination component will have to be placed into the file of the student.

(A regular DC meeting may be conducted separately on the same day but only after some recess time to the completion of Comprehensive Examination.)

Evaluation Format for the Oral Component of the Comprehensive Examination

(Each DC member would enter his/her evaluation in separate sheet in this prescribed format only. The respective supervisor will work out the average of the marks allotted by the DC members.)

Name of the Student : _____

Roll No. : _____

Evaluation Parameters	Grasp of the concepts / constructs and theories learnt during the course work	Aptitude for Research Methods	Preparedness to enter into the next phase of commencement of Doctoral research work	Communication Skill	Total
Max. Marks	30	10	15	5	60
Obtained Marks					

Minimum Passing Marks is 50%.

Name of the DC Member: _____

Signature: _____

Date: _____

Overall Evaluation for Comprehensive Examination

Name of the Student : _____

Roll No. : _____

Components	Oral Examination	Written Examination	Total
Max. Marks	60	40	100
Obtained Marks			

Minimum Passing Marks in each component is 50%.

Name of the Supervisor: _____

Signature: _____

Date: _____