



KERALA UNIVERSITY OF DIGITAL SCIENCES, INNOVATION AND TECHNOLOGY

REGULATIONS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY (PhD) (2022-2023)

1. SHORT TITLE AND COMMENCEMENT

- 1.1 These Regulations Shall be called Kerala University of Digital Sciences, Innovation and Technology Regulations, 2021 governing programmes.
- 1.2 These Regulations shall come into force from the year 2021

2. DEFINITIONS

- 2.1 'Digital University Doctoral Committee' (DUDC) is a committee constituted under these Regulations by the Vice-Chancellor
- 2.2 DRAT is the Digital University Research Aptitude Test conducted by the University and its schools for selection of candidates to the Program
- 2.3 'Graduate Admission Committee' is a committee comprising of the Faculty members of the University constituted by the Vice-Chancellor
- 2.4 'Knowledge Centre' is the Centre established by the University and for the time being, it shall be the University Library
- 2.5 'School Research Committee' means a committee constituted by the Vice-chancellor to supervise Research activities in a School
- 2.6 'University' means Kerala University of Digital Sciences, Innovation and Technology.

3. **Ph.D. PROGRAMMES OFFERED ELIGIBILITY FOR ADMISSION**

- a. A candidate who wishes to pursue a Ph.D. programme of study and research leading to the degree of Doctor of Philosophy (Ph.D.) of the Kerala University of Digital Sciences, Innovation and Technology will be required to seek registration to any one of the programmes under these Regulations. The various modes of Ph.D. Programmes and eligibility to seek registration are detailed below:

Program Code & Name	Description
Ph.D. (R1) Regular PhD	This is a full-time program where the candidate is expected to undertake PhD Program in a full time mode in the University.
PhD (R2) Industry Regular PhD	This is a full-time program suitable for industry applicants. The candidate is expected to work full-time in University or in an Industry Research Lab approved by the University.
PhD (R 3) Part-time PhD	This is a part-time program where the candidate is expected to work with a faculty member remotely while in full-time employment.
PhD (R 4) Integrated PhD	This is a full-time program meant for candidates to undertake PhD directly after a 4-year undergraduate degree. Upon successful completion, students in this program will be awarded a Master's degree followed by a PhD degree.
PhD (R 5) Direct PhD	This is a full-time program meant for candidates to undertake PhD directly after a 4-year undergraduate degree. Upon successful completion, students in this program will be awarded a PhD degree.

b. Minimum Eligibility Criteria

For all PhD programmes, except PhD(R4), students having Masters or equivalent qualification with a minimum of 60% is required. Appropriate relaxations in cut-off shall be applicable for OBC/SC/ST **candidates**.

A minimum of 6 years (4 years bachelors + 2 years Masters) of study is required for a PhD in Engineering disciplines under the Faculty of Engineering. For non-

engineering disciplines (Faculty of Sciences, Faculty of Social Sciences, Faculty of Technology), a minimum of 5 years of study including bachelor's and masters are required. The candidates who have completed 6 years of study including a bachelor and Masters are eligible to be considered in any faculty, provided they meet the school-specific admission requirements. The Digital University Research Aptitude Test (DRAT) or students who qualify for fellowship/scholarship in UGC-NET/UGC-CSIR NET/GATE/CEED and similar National level tests approved by the University is also a mandate for regular admissions.

Admission to the Ph.D. programme shall be made using the following methods:

- i. admit students who qualify for fellowship/scholarship in UGC-NET/UGC-CSIR NET/GATE/CEED and similar National level tests based on an interview.

AND/OR

- ii. admit students through an Entrance Test conducted by DUK, called DRAT. The Entrance Test syllabus shall consist of 50% of research methodology, and 50% shall be subject-specific.
- iii. Students who have secured 50% marks in the entrance test are eligible to be called for the interview.
- iv. A relaxation of 5% marks will be allowed in the entrance examination of the candidates belonging to SC/ST/OBC/differently-abled category, Economically Weaker Section (EWS), and other categories of candidates as per the decision of the Commission from time to time.
- v. The number of eligible students to be called for an interview based on the number of Ph.D. seats available.
- vi. The weightage of 70 % for the entrance test and 30 % for the performance in the interview/viva-voce shall be given.

DRAT and interview: DRAT will have a weightage of 70%, and the interview/viva voce will have a weightage of 30% in the final selection.

During the interview/viva voce, the candidates are required to give a presentation that includes (a) a brief self-introduction (b) a discussion of their research interests and proposed area of research or a research proposal, and (c) a presentation of a recent journal paper (published in last 5 years) before a duly constituted Department Research Committee. The journal paper has to be selected from a list of journals provided by the corresponding school. At least some of those journals should be open-access so that the applicants have easy access to their papers.

The interview/viva voce shall assess whether

- (a) the candidate possesses the competence to work in the proposed research area
- (b) the research work can be suitably undertaken at DUK

(c) the proposed area of research can contribute to new/additional knowledge.

In the viva voce, 50% weightage will be for the presentation (and the questions related to it) and 50% weightage will be for questions that test the knowledge in the subject area. SOP and the recommendation letter may also be considered, if needed, as part of this 50%.

C. Any aspect that is not included in this regulation, the relevant section of University Grants Commission (Minimum Standards and Procedures for Award of Ph.D. Degree) Regulations, 2022 will be applied.

3.1 PhD(R1) REGULAR PhD PROGRAMME

Admission requirement

3.1.1. This is a full-time program for students having Masters or equivalent degrees. A total of 6 years of study consisting of 4 years bachelors and 2 years of masters are required to be eligible for a PhD in Engineering disciplines (Faculty of Engineering). While for non-engineering disciplines (Faculty of Sciences, Faculty of Social Sciences, Faculty of Technology) a minimum of 5 years of study including bachelors and masters are required. The candidates who have completed 6 years of study including a bachelor and Masters are eligible to be considered in any faculty, provided they meet the school specific admission requirements.

3.1.2. A 1-year/2-semester master's degree programme after a 4-year/8-semester bachelor's degree programme or a 2-year/4-semester master's degree programme after a 3-year bachelor's degree programme or qualifications declared equivalent to the master's degree by the corresponding statutory regulatory body, with at least 55% marks in aggregate or its equivalent grade in a point scale wherever grading system is followed or equivalent qualification from a foreign educational institution accredited by an assessment and 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 to assess, accredit or assure quality and standards of the educational institution. A relaxation of 5% marks or its equivalent grade may be allowed for those belonging to SC/ST/OBC (non-creamy layer)/Differently-Abled, Economically Weaker Section (EWS) and other categories of candidates as per the decision of the Commission from time to time.

OR

3.1.3. Candidates who have completed the M.Phil. programme with at least 55% marks in aggregate or its equivalent grade in a point scale wherever grading system is

followed or equivalent qualification from a foreign educational institution accredited by an assessment and 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 to assess, accredit or assure quality and standards of educational institutions, shall be eligible for admission to the Ph.D. programme. A relaxation of 5% marks or its equivalent grade may be allowed for those belonging to SC/ST/OBC (non-creamy layer)/Differently-Abled, Economically Weaker Section (EWS) and other categories of candidates as per the decision of the Commission from time to time.

Program requirements

- 3.1.4. The minimum total duration of the program is 36 months, with a maximum of 72 months.
- 3.1.5. In this mode of study, the student shall conduct full-time research work in the university research labs. However, if the work is carried out with the collaboration of any partner organization or collaborative lab in India or abroad, 25% of full-time study is allowed to be spent there.
- 3.1.6 Foreign students are allowed only full-time study and research, where the degree is accredited by an Assessment and Accreditation Agency, recognized or authorized by an authority, established or incorporated under a law in its home country or any other statutory authority in that country to assess, accrediting or assure quality and standards of educational institutions. For such candidates a valid GRE score is mandatory

3.1.7 Program structure

Year	Remarks
Year 1, Semester 1	Semester 1 will have coursework having 10-15 Credits and research work counting to 0-10 credits.
Year 1, Semester 2	Semester 2 will have coursework having 0-15 Credits and research work counting to 10-30 credits.
Year 2, Semester 1	Semester 1 will have coursework having 0-10 Credits and research work counting to 20-30 credits. A maximum of 16 credits of coursework is allowed across all semesters.
Year 2, Semester 2	Semester 2 will have research work counting to 30 credits.

Year 2, Semester 2	Research work counting to 30 credits. There will be a comprehensive examination having 20 Credits. A pass in comprehensive examination is essential to proceed to the dissertation
Year 3	Year 3 and above will focus purely on doctoral work. Every semester the student will complete 30 credits of research work. The dissertation will account for 100 credits

3.2 PhD(R2) INDUSTRY REGULAR PhD PROGRAMME

Admission requirement

- 3.2.1. This is a full-time program with students having Masters or equivalent degrees. A total of 6 years of study consisting of 4 years bachelors and 2 years of masters are required to be eligible for a PhD in Engineering disciplines (Faculty of Engineering). While for non-engineering disciplines (Faculty of Sciences, Faculty of Social Sciences, Faculty of Technology) a minimum of 5 years of study including bachelors and masters are required. The candidates who have completed 6 years of study including a Bachelor and Master's degree are eligible to be considered in any faculty, provided they meet the school-specific admission requirements.
- 3.2.2. The applicant is required to have at least 5 years of relevant full-time work experience after graduation at an Administrative / Executive level.
- 3.2.3. The applicant shall be a full-time regular employee of the industry at the time of admission
- 3.2.4. A 1-year/2-semester master's degree programme after a 4-year/8-semester bachelor's degree programme or a 2-year/4-semester master's degree programme after a 3-year bachelor's degree programme or qualifications declared equivalent to the master's degree by the corresponding statutory regulatory body, with at least 55% marks in aggregate or its equivalent grade in a point scale wherever grading system is followed or equivalent qualification from a foreign educational institution accredited by an assessment and 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 to assess, accredit or assure quality and standards of the educational institution. A relaxation of 5% marks or its equivalent grade may be allowed for those belonging to SC/ST/OBC (non-creamy layer)/Differently-Abled, Economically Weaker Section (EWS) and other categories of candidates as per the decision of the Commission from time to time.

OR

- 3.2.5. Candidates who have completed the M.Phil. programme with at least 55% marks in aggregate or its equivalent grade in a point scale wherever grading system is followed or equivalent qualification from a foreign educational institution accredited by an assessment and 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 to assess, accredit or assure quality and standards of educational institutions, shall be eligible for admission to the Ph.D. programme. A relaxation of 5% marks or its equivalent grade may be allowed for those belonging to SC/ST/OBC (non-creamy layer)/Differently-Abled, Economically Weaker Section (EWS) and other categories of candidates as per the decision of the Commission from time to time.

Program requirements

- 3.2.6. The minimum total duration of the program is 36 months for post-graduates, with a maximum of 72 months.
- 3.2.7. The students in the first year are required to undergo an in campus residential full -time research Internship Program of 45 days.
- 3.2.8. Every year there is an option for the student to complete a mandatory 15 days of full-time residential program. In subsequent years, the residential component is not mandatory. However, a minimum of 25% of research work will be done at the University
- 3.2.9. Program structure

Year	Remarks
Year 1, Semester 1	Semester 1 will have coursework having 10-15 Credits and research work counting to 0-10 credits.
Year 1, Semester 2	Semester 2 will have coursework having 0-15 Credits and research work counting to 10-30 credits.
Year 2, Semester 1	Semester 1 will have coursework having 0-10 Credits and research work counting to 20-30 credits. A maximum of 16 credits of coursework is allowed across all semesters.

Year 2, Semester 2	Semester 2 will have research work counting to 30 credits.
Year 2, Semester 2	There will be a comprehensive examination having 20 Credits. A pass in comprehensive examination is essential to proceed to the dissertation
Year 3	Year 3 and above will focus purely on doctoral work. Every semester the student will complete 30 credits of research work. The dissertation will account for 100 credits

3.2.10 The minimum total research program credits required to complete is 150 credits.

The course selection and program plan will be decided by the student in consultation with the supervisor.

3.3 PhD(R3) PART-TIME PhD PROGRAMME

Admission requirement

- 3.3.1. This is a Part-time program with students having Masters or equivalent degrees. A total of 6 years of study consisting of 4 years bachelors and 2 years of masters are required to be eligible for a PhD in Engineering disciplines (Faculty of Engineering). While for non-engineering disciplines (Faculty of Sciences, Faculty of Social Sciences, Faculty of Technology) a minimum of 5 years of study including bachelors and masters are required. The candidates who have completed 6 years of study including a bachelor and Masters are eligible to be considered in any faculty, provided they meet the school specific admission requirements.
- 3.3.2. The applicant is required to have at least 5 years of relevant full-time work experience after graduation at an Administrative / Executive/ Teaching level.
- 3.3.3. A 1-year/2-semester master's degree programme after a 4-year/8-semester bachelor's degree programme or a 2-year/4-semester master's degree programme after a 3-year bachelor's degree programme or qualifications declared equivalent to the master's degree by the corresponding statutory regulatory body, with at least 55% marks in aggregate or its equivalent grade in a point scale wherever grading system is followed or equivalent qualification from a foreign educational institution accredited by an assessment and 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 to assess, accredit or assure quality and standards of the educational institution. A relaxation of 5% marks or its equivalent grade may be allowed for those belonging to SC/ST/OBC (non-creamy layer)/Differently-Abled, Economically Weaker Section (EWS) and other categories of candidates as per the decision of the Commission from time to time.

OR

- 3.3.4. Candidates who have completed the M.Phil. programme with at least 55% marks in aggregate or its equivalent grade in a point scale wherever grading system is followed or equivalent qualification from a foreign educational institution accredited by an assessment and 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 to assess, accredit or assure quality and standards of educational institutions, shall be eligible for admission to the Ph.D. programme. A relaxation of 5% marks or its equivalent grade may be allowed for those belonging to SC/ST/OBC (non-creamy layer)/Differently-Abled, Economically Weaker Section (EWS) and other categories of candidates as per the decision of the Commission from time to time.

Program requirements

- 3.3.5. The minimum total duration of the program is 48 months, with a maximum of 72 months.
- 3.3.6. The students are required to undergo an on-campus residential full-time research Internship Program of a minimum of 45 normal working days.
- 3.3.7. Every year the student completes mandatory 15 days of a full-time residential program.
- 3.3.8 Program Structure

Year	Remarks
Year 1-2	The course selection and program plan will be decided by the student in consultation with the supervisor. A maximum of 16 credits of coursework is allowed across all semesters.
Year 1-2	They are required to pass a comprehensive examination within the first 2 years of their study. The comprehensive examination accounts for 20 credits.

Year 3 and above	The total research program credits required to complete is 150 credits. The dissertation will cover 100 Credits.
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3.4 PhD (R4) INTEGRATED PhD PROGRAMME

Admission requirement

- 3.4.1. This program is meant as a direct admission scheme for people with a 4-year graduation degree in Science, Engineering or any other stream relevant to the School.
- 3.4.2. A relaxation of 5% marks or its equivalent grade may be allowed for those belonging to SC/ST/OBC (non-creamy layer)/Differently-Abled, Economically Weaker Section (EWS) and other categories of candidates as per the decision of the Commission from time to time. Provided that a candidate seeking admission after a 4-year/8-semester bachelor's degree programme should have a minimum of 75% marks in aggregate or its equivalent grade on a point scale wherever the grading system is followed. A relaxation of 5% marks or its equivalent grade may be allowed for those belonging to SC/ST/OBC (non-creamy layer)/Differently-Abled, Economically Weaker Section (EWS) and other categories of candidates as per the decision of the Commission from time to time.

Program requirements

- 3.4.3. The minimum total duration of the program is 50 months, with a maximum of 72 months.
- 3.4.4. In this mode of study, the student shall spend more than 60% of full-time study in the university research labs for conducting the research. If the work is carried out with the collaboration of any partner organization or collaborative lab in India or abroad, a maximum of 40% of full-time study in the collaborative lab is allowed
- 3.4.5. Foreign students are allowed only full time, where the qualifying degree is accredited by an Assessment and Accreditation Agency, recognized or authorized by an authority, established or incorporated under a law in its home country or any other statutory authority in that country to assess, accrediting or assure quality and standards of educational institutions. For such candidates a valid GRE score is mandatory

3.4.6. Program structure

Year	Structure
Year 1	Semester 1 and Semester 2 will be having the same program requirements as the MTech/Master's program in the relevant disciplines. There will be a mandatory research internship during the summer term. (See PG Regulations)
Year 2	Semester 3 will be having the same program requirements as the MTech/Master's program. (See PG Regulations) In semester 4, the students will be admitted to PhD Program (based on research internship performance). In case, the research internship performance is not satisfactory the students will graduate with a Master's degree.
Year 2	If admitted to a PhD program, then Semester 4 will be research-level coursework (equivalent to Semester 1 of the Regular PhD program).
Year 3	Year 3 and above will focus purely on doctoral work with a full fellowship from the university

3.5 PhD (R5) DIRECT PhD PROGRAMME

Admission requirement

- 3.5.1. This program is meant as a direct admission scheme for people with a 4-year graduation degree in Science, Engineering or any other stream relevant to the School.
- 3.5.2. The direct admission students need to have a 75% marks or equivalent CGPA in their undergraduate program. To secure confirmation to the admission, they also need to score a CGPA of 8.0 or above in the first year of coursework.
- 3.5.3. A relaxation of 5% marks or its equivalent grade may be allowed for those belonging to SC/ST/OBC (non-creamy layer)/Differently-Abled, Economically Weaker Section (EWS) and other categories of candidates as per the decision of the Commission from time to time. Provided that a candidate seeking admission after a 4-year/8-semester bachelor's degree programme should have a minimum of 75% marks in aggregate or its equivalent grade on a point scale wherever the grading system is followed. A relaxation of 5% marks or its equivalent grade may

be allowed for those belonging to SC/ST/OBC (non-creamy layer)/Differently-abled, Economically Weaker Section (EWS) and other categories of candidates as per the decision of the Commission from time to time.

Program requirements

- 3.5.4. The minimum total duration of the program is 36 months, with a maximum of 72 months.
- 3.5.5. In this mode of study, the student shall conduct full-time research work in the university research labs. However, if the work is carried out with the collaboration of any partner organization or collaborative lab in India or abroad, 25% of full time study is allowed to be spent there.
- 3.5.6. Foreign students are allowed only full-time study and research, where the degree is accredited by an Assessment and Accreditation Agency, recognized or authorized by an authority, established or incorporated under a law in its home country or any other statutory authority in that country to assess, accrediting or assure quality and standards of educational institutions. For such candidates a valid GRE score is mandatory
- 3.5.7. Program structure

Year	Remarks
Year 1, Semester 1	Semester 1 will have coursework having 10-15 Credits and research work counting to 0-10 credits.
Year 1, Semester 2	Semester 2 will have coursework having 0-15 Credits and research work counting to 10-30 credits.
Year 2, Semester 1	Semester 1 will have coursework having 0-10 Credits and research work counting to 20-30 credits. A maximum of 16 credits of coursework is allowed across all semesters.
Year 2, Semester 2	Semester 2 will have research work counting to 30 credits.
Year 2, Semester 2	Research work counting to 30 credits. There will be a comprehensive examination having 20 Credits. A pass in comprehensive examination is essential to proceed to the dissertation
Year 3	Year 3 and above will focus purely on doctoral work. Every semester the student will complete 30 credits of research work. The dissertation will account for 100 credits

4. COURSEWORK REQUIREMENTS

- 4.1. **All PhD students will have the following mandatory PhD level courses to be completed within the first 2 years of their study:**
 - a. Research Methods and Ethics (3 credits)
 - b. Technical Writing (1 credit)
 - c. Pedagogy Design (3 credits)
 - d. Design Thinking and Translational Research (3 credits)
- 4.2. Part-time PhD students can complete up to 16 credits during their mandatory on-campus visits.
- 4.3. A minimum of 12 credits of coursework need to be completed. There is no upper limit set for the number of credits in coursework that students can attain during the PhD. The upper limit can be decided based on the recommendations of DUDC looking at the research topic and candidate's developmental needs.

5. GRADUATE ADMISSION COMMITTEE

5.1. The graduate admission committee shall consist of:

- a. School Chair
- b. Two faculty members from the school
- c. One faculty member from another school nominated by the Dean Academics

6. DOCTORAL COMMITTEE

- 6.1. Composition of Doctoral Research Committee (DUDC)
- 6.2. The DUDC consists of the following members.
 - (a) Research Supervisor(s) (and co-supervisor if any)
 - (b) Two nominees of School Research committee who are subject experts within the University or Outside
- 6.3. The research supervisor should be a primary or secondary member of the school in which the student is enrolled. The doctoral committee may recommend additional co-supervisors based on the requirements of the project for approval by the Dean academic.
- 6.4. The DUDC meets every 6 months to evaluate the student's progress.
- 6.5. The DUDC is responsible for guiding the scholar in selecting the right courses and topics for the comprehensive examination. The DUDC shall:
 - i. To review the research proposal and finalize the topic of research.
 - ii. To guide the Ph.D. scholar in developing the study design and methodology of research and identify the course(s) that he/she may have to do.
 - iii. To periodically review and assist in the progress of the research work of the Ph.D. Scholar
- 6.6. The DUDC in consultation with the school research committee decides on the eligibility and readiness level of the PhD scholar's thesis to be considered for evaluation.

- 6.7. The DUDC is responsible to submit a panel of ten external reviewers of International standing for assessing the PhD thesis.
- 6.8. The chair of the DUDC should be at the rank of Associate or Full Professor, and ideally must have previous supervisory experience.
- 6.9. The DUDC can be revised by the recommendation of the supervisor in consultation with students with the approval of the Dean academic.
- 6.10. The expert from other departments or schools or universities should have a credible track record shown by publications in the area of research topic. The vice chancellor or dean academic can recommend changes to the DUDC to ensure that right experts are selected for DUDC.
- 6.11. The supervisor shall be the convenor for DUDC.

7. SCHOOL RESEARCH COMMITTEE

In each School of the University, academic matters related to the PhD programme shall be supervised by a School Research Committee consisting of the following:

- a. School Chair: Chairman (ex-officio)
- b. All the Professors of the School: (ex-officio)
- c. Associate Professors in the School, subject to a maximum of two, by rotation according to seniority;
- d. Two Assistant Professors in the Department qualified to be Research (PhD) Supervisor(s), by rotation according to seniority; and
- e. One nominee of the University Research Office
- f. One external expert to be called by the Head of School out of the panel drawn by the BoS.
- g. Where a school has a strength of fewer than ten teachers, all faculty members are eligible to be Research (PhD) Supervisors and shall be members of the School Research Committee. The term of the members of the School Research Committee, except the ex-officio members, shall be for two years.
- h. At least, 50% of the members shall be required to be present in the meeting to form the quorum, with the presence of the Chairman or his/her representative as mandatory.

8. ALLOTMENT OF SUPERVISOR

- 8.1. Once the selection process is completed and on approval by the University, The selected candidates will be admitted to the PhD programme of the respective schools after payment of fees and verification of all records
- 8.2. The students should join the institute within a month from the date of publishing of the rank list or within the last date given by the University/School, failing which his/ her admission will be cancelled automatically and need to re-apply in the next turn.

- 8.3. Allotment of research scholars to the Research Supervisor will be based on the preference indicated by the student, and the availability of the supervisors. The allocation is confirmed by the School Research Committee, and approved by the Head of School, and notified to the Dean (Academic).
- 8.4. Depending on the nature of the research to be carried out and the preferences of the Research Supervisor and the research scholar or considering the interdisciplinary nature, a co-supervisor may have opted. Recommendation for a Co-supervisor shall be made with valid reasons and justification. Co-supervisor may be taken from other schools for interdisciplinary topics. Co-supervisor shall be appointed by the academic head of the schools and notified to the Dean(Academic) of the University. In any case, there shall not be more than two co-supervisors for a research scholar.
- 8.5. An industry mentor is mandatory to be allocated for Industry regular programs. They can be part of the DUDC of the student concerned provided they meet the qualifications of co-supervisor.

9. QUALIFICATIONS OF RESEARCH SUPERVISOR

- 9.1. Full-time faculty members working as Professor/Associate Professor of the Higher Educational Institution with a Ph.D., and at least five research publications in peer-reviewed or refereed journals and full-time faculty members working as Assistant Professors in Higher Educational Institutions with a Ph.D., and at least three research publications in peer-reviewed or refereed journals may be recognized as a Research Supervisor. Those full-time faculty in probation period are also allowed to be a supervisor. Such recognized research supervisors cannot supervise research scholars in other institutions, where they can only act as co-supervisors. Ph.D. awarded by a university under the supervision of a faculty member who is not an employee of the university or its affiliated Post- graduate Colleges/institutes would be in violation of these Regulations. For Ph.D. scholars working in Central government/ State government research institutions whose degrees are given by University, the scientists in such research institutions who are equivalent to Professor/Associate Professor/Assistant Professor can be recognized as supervisors if they fulfill the above requirements. Provided that in areas/disciplines where there is no, or only a limited number of peer-reviewed or refereed journals, the University may relax the above condition for recognition of a person as Research Supervisor with reasons recorded in writing. Co-Supervisors from within the same department or other departments of the university or other institutions may be permitted with the approval of the competent authority. Adjunct Faculty members shall not act as Research Supervisors and can only act as co-supervisors.
- 9.2. In case of interdisciplinary/multidisciplinary research work, if required, a Co-Supervisor from outside the Department/School/Centre/College/University may be appointed.
- 9.3. An eligible Professor/Associate Professor/Assistant Professor can guide up to eight (8) / six (6) / four (4) Ph.D. scholars, respectively, at any given time.
- 9.4. Each supervisor can guide up to two international research scholars on a supernumerary basis over and above the permitted number of Ph.D. scholars

- 9.5. In case of relocation of a female Ph.D. scholar due to marriage or otherwise, the research data shall be allowed to be transferred to the Higher Educational Institution to which the scholar intends to relocate, provided all the other conditions in these Regulations are followed, and the research work does not pertain to a project sanctioned to the parent Institution/Supervisor by any funding agency. Such scholar shall, however, give due credit to the parent institution and the supervisor for the part of research already undertaken.
- 9.6. Faculty members with less than three years of service before superannuation shall not be allowed to take new research scholars under their supervision. However, such faculty members can continue to supervise Ph.D. scholars who are already registered until superannuation and as a co-supervisor after superannuation, but not after attaining the age of 70 years
- 9.7. The co-supervisor shall have a PhD and can be nominated by the research supervisor to DUDC for approval by the school research committee. In the case of Industry Regular PhD, Co-Supervisor can be a person with proven research credentials like patents, publications etc.

10. COMPREHENSIVE EXAMINATION EVALUATION COMMITTEE (CEEC)

A. COMPREHENSIVE EXAMINATION EVALUATION COMMITTEE (CEEC)

- 10.1. The Comprehensive Examination is evaluated by the CEEC consisting of the following members:
 - a. Research Supervisors(s)
 - b. One nominee of the School Research committee
 - c. One nominee of Controller of Examinations from within the University
 - d. External member nominated by COE
- 10.2. The objective of the Comprehensive Examination is to test the general competence of the research scholar and the breadth of his/her knowledge in his/her discipline and areas related to his/her field of research. The comprehensive exam shall usually consist of a written test and an oral examination, viva and/or any of these as per the decision by the school research committee.
- 10.3. If the performance of a research scholar in the Comprehensive Examination on the first attempt is not satisfactory, he/she will be given one more opportunity to appear for the comprehensive examination within six months of the first attempt. If a candidate fails to clear the comprehensive exam in two attempts, his/her registration shall be cancelled. The Comprehensive Examination Committee shall intimate to the research scholar sufficiently in advance the scope of the Comprehensive Examination, to enable the scholar to prepare for it adequately.
- 10.4. The PhD research scholars are normally expected to complete the Comprehensive Examination successfully within the first 2 years of his/her registration for the programme. For both written and oral components for the comprehensive examination, the DUDC shall decide the modalities.

B. Guideline for the conduct of Comprehensive Examinations

- 10.5. The CoE shall conduct the Comprehensive Examinations on the request from the Dean concerned along with the approved syllabus.
- 10.6. The DC shall finalize the syllabus, question paper pattern etc.
- 10.7. The evaluation will be done by the CEEC composed of the Research Supervisor(Convenor), one nominee of the School Research Committee, one person nominated by the CoE from the internal faculty members and one external expert nominated by CoE from the panel of three members approved by the DC.
- 10.8. The written examination will be for 60% of marks/scores and the Viva-voce will be for 40% of the marks /scores.The Viva Voce shall be normally conducted in the physical mode but online/hybrid mode can also be allowed in special circumstances on the written permission of the CoE.
- 10.9. The Viva Board shall consist of all members of CEEC and the Research Supervisor concerned (Convenor).
- 10.10. The written examination shall be for a duration of three hours.
- 10.11. A separate minimum of 50% of marks/score in the written and viva examination is necessary for a pass in the Comprehensive Examination.
- 10.12. There will be two chances for clearing the Comprehensive Examination.A failed Scholar can appear for a second chance which will be conducted after one month from the date of conduct of the first examination.The second examination will be conducted within a maximum of three months from the date of the first Examination.
- 10.13. The CoE shall issue Grade Cards and pass certificates to the successful candidates.

11. THESIS EVALUATION COMMITTEE (TEC)

- 11.1. The thesis evaluation committee is responsible for the assessment of the final thesis. The committee consists of the following members:
 - a. Chair from another School nominated by the Controller of Examinations
 - b. Research Supervisor (convener)
 - c. Three external examiners, of which at least one from an Institution outside India and one from an institution outside the University.
 - d. At least one of the external examiners' work must be referred to by the scholar in the thesis.
- 11.2. Open defense and in-camera viva voce will be conducted by TEC with examiners joining on physical or virtual mode
- 11.3. The panel of examiners will be approved by the School Research Committee, Dean Academic, Controller of Examinations and Vice-Chancellor.
- 11.4. A 10-member panelist will be submitted by the supervisor, approved by Dean Academics and will be submitted to the Controller of Examinations. Out of 10

- members, four will be outside India, six will be outside the University, of which four will be outside Kerala.
- 11.5. This list of panel members will be normally in the academic rank of Professors/Associate Professors, having outstanding research records as judged by their past research publications, working in the concerned or related topics of the thesis. The external examiner should have had previous experience with the supervision and examination of doctoral students. The works of at least one of the external examiners should have been cited in the PhD thesis.
 - 11.6. A person is ineligible to serve as an external examiner if, concerning the Candidate or any member of the Candidate's Supervisory Committee, there are any conflicts of interests. Examples of conflicts of interest for external examiner with student or student's Supervisory Committee includes but not limited to being:
 - a blood relative; *or*
 - a research collaborator and/or co-author within the past 6 years; or
 - an institutional colleague within the past 6 years; *or*
 - a former supervisor (for the Candidate, Supervisor or Co-Supervisor only); *or*
 - a person who has offered future employment or mentorship to the Candidate; *or*
 - a former student; *or*
 - involved in a dispute; *or*
 - involved in a business or personal partnership with the candidate
 - 11.7. It is the responsibility of the external examiner, supervisory committee members, and students to declare any such conflicts of interest.

12. THESIS SUBMISSION AND EVALUATION PROCEDURE

- 12.1. An open pre-submission seminar will be conducted before the DUDC and an observer nominated by the Dean-Academics. A sufficient number of participants will be ensured for the presentation. All corrections shall be made by the scholar before submitting the final synopsis.
- 12.2. The research scholar in discussion and approval of the research supervisor(s) initiates the process of thesis submission by submitting a synopsis of the thesis for approval by DUDC. The scholar is required to submit the thesis within 3 months from the date of submission of the synopsis. All thesis reports are subjected to plagiarism checks through the Knowledge Centre.
- 12.3. If a scholar anticipates a delay in submitting his/her thesis within three months from the date of synopsis submission, he/she can request a three-month extension for thesis submission to DUDC with sound justifications. However, it is the responsibility of the scholar to ensure that his/her registration remains valid for the time claimed. Any request made to DUDC for approval of 3 months extension shall be made at least 4 weeks before the deadline, and DUDC reserves the right to allow or deny such requests. The

DUDC shall inform its decision to the Dean Academic and Controller of Examinations. They shall review the findings and make the final approval of deadline extension and grant extension for three months. The PhD scholar can get an extension of the thesis at most two times, and their registration will stand terminated if the thesis is not submitted within the stipulated time frame. The scholars are not allowed to use academic leave to extend the thesis submission date.

- 12.4. The DUDC evaluates the readiness of the thesis to be considered for submission, and if found suitable, will be recommended for evaluation to the school research committee. On the DUDC recommendation of submission of a thesis, the research supervisor(s) prepares and submits the panel of Ten external examiners to the school research committee.
- 12.5. The school research committee reviews the school-wide quality requirements, examines the panel of examiners and notifies the Dean Academic on the need for evaluation of the thesis.
- 12.6. The Dean Academic reviews the recommendation of the school research committee, verifies the compliance of university wide norms and recommends the Controller of Examinations to initiate the evaluation process.
- 12.7. The Controller of Examination constitutes the thesis evaluation committee in discussion with Research Supervisor(s).
- 12.8. The review reports from three external reviewers are collected by the office of the Controller of Examination. The evaluation reports are required to be collected within three months from the date of submission of the thesis.
- 12.9. The CoE intimates the research supervisor on the revisions if any to be performed by the student based on review reports. Where the thesis is rejected by any of the reviewers, the thesis will stand rejected and be informed to the TEC chair Deans, and Vice-Chancellor.
- 12.10. The research supervisor verifies the revisions made, and if satisfactory, submits the revised thesis to the CoE with the approval of the TEC chair.
- 12.11. CoE validates the revised thesis report and informs the Dean Academics to conduct the open defence in discussion TEC chair and research supervisor.
- 12.12. The TEC can recommend revising, approve or reject the thesis at any stage of the thesis evaluation process. The Vice-Chancellor will be the final approving authority of the award of a PhD degree. The Vice-Chancellor may consult with the Deans and Chair of the TEC before making the final approval.

13.CRITERIA FOR AWARD

- 13.1. In the PhD program, it is required to complete the course work with a minimum CGPA of 6.
- 13.2. In the Comprehensive Examination, it is expected that the student achieves a GP of a minimum of 6 (grade of C or above)
- 13.3. The readiness for the PhD award will be based on the quality of thesis and research outputs as decided by the DUDC and school research committee. It is expected to publish at least two journal/conference articles or equivalent in a high-quality journal/conferences of international repute (typically ranked SJR Q1) and/or of high standing as defined by the school research committee. Where publications are

not there, they are expected to produce products or patents that can be verified and recommended as equivalent contributions by the DUDC and school research committee.

13.4. The pass in the dissertation is decided by the positive referee reports and performance in the final defense. There will be an open defense for the general public and will be aimed at popular media. The final defense will be closed in the presence of TEC.`

13.5. The decision of TEC will be informed to the research scholar soon after or during the final defense. The Vice-Chancellor will be the final approving authority of the award of a PhD degree.

14. FEES AND UNIVERSITY SCHOLARSHIP

Tuition Fee

14.1. There will be a tuition fee of **Rs 50,000/-** per year for the minimum duration for all the programs starting in 2021. The tuition fee can be updated yearly.

14.2. Beyond the minimum duration of the program, there will be a fee increase of 25% in subsequent years of study.

14.3. The schools can set additional lab fees on top of tuition fees based on the requirements of the program. This shall be outlined in the School's program documents and have to be approved by the board of studies and academic council.

Other Fees

14.4. The additional fees such as lab fees, registration fees, library fees, admission fees, examination fees etc vary from year to year and will be announced annually along with the admission call.

14.5. University Scholarship

14.6.

(I) Integrated PhD Program

Year	Remarks	Degree
Year 1	Full fee with no fee concession and scholarship.	M.Tech/MSc
Year 2	50% fee concession with no scholarship.	M.Tech/MSc
Year 3	100% fee concession and a scholarship amount of Rs 20,000per month after clearing the comprehensive exam	PhD

Year 4	100% fee concession and a scholarship amount of Rs 30,000 per month	PhD
Year 5	50% fee concession with no scholarship support.	PhD
Year 6	50% fees are required and no scholarship support is offered.	PhD
Year 7 or above	Re-registration with the full fee is required from Year 7 onwards	PhD

(II)Regular PhD Program OR Direct PhD Program

Year	Remarks
Year 1	100% fee concession and a scholarship of Rs 20,000 per month is provided.
Year 2	100% fee concession and Rs 25,000 per month
Year 3	100% fee concession and Rs 30,000 per month
Year 4	100% fee concession and no scholarship.
Year 5-6	50% fee concession and no scholarship.
Year 7 or above	Re-registration with the full fee is required from Year 7 onwards

(III)Part-Time and Industry Regular PhD

14.7. No fee concessions or scholarships are offered by the University towards their study.

14.8. Part-Time and Industry regular participants also will have a special fee of **Rs 50,000/-** from year 2 onwards in addition to the tuition fee

Additional benefits

- 14.9. For all the programs, Rs 25,000 per year as a contingency after clearing comprehensive examination towards research expenses, conferences etc. for a maximum period of 3 years subject to satisfactory research performance (the amount can be accumulated).
- 14.10. The schools may offer additional scholarships for integrated PhD and PhD candidates depending on the external funding support obtained. The students may also opt for research assistance or teaching assistance support offered by the supervisor or university.

15. DIGITAL UNIVERSITY RESEARCH APTITUDE TEST

- 15.1. Digital University Research Aptitude Test (DRAT): Online Applications are twice a year from eligible candidates for the DRAT for determining eligibility for admission to PhD Programme. The validity of the DRAT is for two years and the short-listed candidates, who cleared the test will be published on the website.
- 15.2. The DRAT exam will consist of English (for 30 marks), Maths (30), One subject-specific to the school (40). The school can offer multiple subject specific tests related to areas of specialization, and the students have the option to select up to a maximum of two subject tests in which they desire to apply. The subject tests need to be taken in the school that the applicant intends to seek admission to.
- 15.3. The final selection shall be through school-wise written tests and/or personal interview and/ or presentations as decided by the School from time to time. The selection of the candidate is the responsibility of the schools, subject to the instructions or amendments of the University from time to time. The selection of the candidate will be provisional until the final approval by the University.
- 15.4. Applications submitted for seeking admission in a particular school cannot be transferred to any other school. If a candidate wishes to apply for admission in more than one school, he/she shall submit separate applications.

Admission

- 15.5. Once the selection process is completed and on approval by the University, the selected candidates will be admitted to the Ph D programme of the University and allotted to respective schools after payment of fees and verification of all records.
- 15.6. The students shall join the institute within a month or the last date given by the University/School from the date of publishing of the rank list. Otherwise, his/ her admission will cancel automatically and need to re-apply in the next turn.
 - 15.6.1 Allotment of research scholars to the Research Supervisor will be made by the academic School Chairs, subject to approval by the Dean Academic of the University, depending on the availability of vacancy of the supervisors and preferences of the Research Supervisor and the research scholar.

15.6.2 For Industry and R&D External research, there should be an external mentor in the parent organization having a PhD in the respective field.

Registration

15.7. The Doctoral Committee shall approve the proposed research topic, the date of registration for the PhD programme, considering the recommendation of the Research Supervisor, and co-supervisor. Then the registration order will be issued to the student by the university academic office with the approval of Dean Academic.

16. MINIMUM AND MAXIMUM DURATION

16.1. The minimum period of study and research for full-time research scholars required from the date of registration to the date of submission of the thesis and the maximum duration is as follows:

Mode	Faculty	Qualifying Degree	Minimum	Maximum
Full-time	Engineering	M Tech	36 months	72 months
	Engineering	MSc	50 months	90 months
	Engineering	B Tech	50 months	90 months
Full-time	Science, Social Science, Technology	MSc	36 months	72 months
	Science, Social Science	MA	36 months	72 months
Part-time	Science, Social Science, Technology,	MSc	48 months	72 months
	Engineering	M Tech	48 months	72 months

17. RELIEF FROM PhD PROGRAMME TO TAKE UP EMPLOYMENT

- 17.1 Scholars who have a job offer can obtain relief from the program upon recommendation by the DUDC if they have completed the minimum residential requirement, the course work, the comprehensive examination and the research proposal seminar
- 17.2 The scholar should keep the registration alive by payment of the requisite fees every semester. Renewal of the registration for every semester will be considered only if the DUDC finds the scholar's progress to be satisfactory and recommends continuance of registration. Whether the scholar retains scholarship during this period will depend on the rules, conditions and regulations of the specific scholarship they receive.

18. TEMPORARY WITHDRAWAL FROM THE PROGRAM

- 18.1 A scholar may be permitted by the Dean Academic to withdraw from the program for a period not longer than a semester for health reasons or any other valid grounds if recommended by the DUDC. The maximum time permitted for temporary withdrawal from the program is for one year, which may be taken continuously with the reapproval by the DUDC.

19. CANCELLATION OF REGISTRATION

- 19.1.1 If the research progress of a scholar is found to be unsatisfactory over a long time the DUDC may recommend cancellation of registration after a periodic review of the progress.
- 19.1.2 The registration is liable to be cancelled if the scholar does not enroll every semester.
- 19.2. The registration of a research scholar, who has not submitted his/ her thesis before the end of the maximum permissible period, will be cancelled.

20. ROLES AND RESPONSIBILITIES

- 20.1. **Research supervisor (s)** - The research supervisor will be primary contact for PhD students, and will be responsible for providing mentorship and guidance throughout the duration of PhD studies.
- 20.2. **Academic Council** - All matters relating to PhD regulations shall be approved by the Academic Council and placed for information to the senate. Dean Academic and Associate Dean Academic shall regularly update the on the overall status of the doctoral programs to the Academic Council and Senate.
- 20.3. **School committee** - The research committee within the school shall monitor the progress of the PhD program from time to time. The chair of the school shall be the representative of all the school committees, who shall liaise with the Dean and

Associate Dean Academic on all matters about the quality assurance and monitoring of the PhD program.

- 20.4. **Dean Academic** - Dean Academic serves to monitor, allocate and approve various committees constituted for doctoral studies. Also, the dean academic is responsible to make decisions on the recommendations of the various doctoral committees.
- 20.5. **Associate Dean Academic** - Any program revisions, monitoring and quality enhancement of the PhD program shall be initiated with the approval/concurrence of Associate Dean Academic. Associate Dean Academic may from time to time take any roles assigned by the Dean Academic or Vice- Chancellor for ensuring the high quality and standards of the doctoral program.
- 20.6. **Vice-Chancellor** - The Vice-Chancellor is the final approving authority of the doctoral thesis. He/she shall act on behalf of the University Senate, as the chair of the Senate to deliberate or initiate any proceedings required for ensuring the high standing of the doctoral program in consultation with the Academic Council, from time to time.

21. STUDENT DISCIPLINE

- 21.1. Every scholar is required to observe disciplined and decorous behaviour both inside and outside the campus and should not indulge in any activity, which will bring down the prestige of DUK.
- 21.2. Any act of indiscipline of a scholar reported to the Dean of Academic will be referred to a Discipline and Welfare Committee nominated by the Senate. The committee will investigate and recommend suitable punishment if it finds the charges substantiated. The recommendation of the Committee will be considered by the Academic Council, which will authorize the Dean of Academic to take appropriate action. The Dean (Academic) will report the action taken at the next meeting of the Senate.

Appeal: *The scholar may appeal to the Chair, Senate whose decision will be final*