



ABV-IIITM Gwalior

Ordinance & Regulation for the Degree of Doctor of Philosophy

ORDINANCE AND REGULATION

for the degree

of

DOCTOR OF PHILOSOPHY

2022

ABV- INDIAN INSTITUTE OF INFORMATION TECHNOLOGY

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***** PREAMBLE *****

Atal Biahri Vajpayee - Indian Institute of Information Technology Management Gwalior (ABV-IIITM Gwalior) offers postgraduate programmes leading to the award of Ph.D. degree through its Department/Centre. The award of Ph.D. degree is in recognition of high academic achievements, independent research and application of knowledge to the solution of technical and scientific problems in Science, Technology and Management ; creative and productive inquiry is the basic concept underlying the research work.

The academic programme leading to the Ph.D. degree is broad – based and involves a minimum course credit requirement and a research thesis. The institute also encourages interdisciplinary areas through a system of Co-supervision and provides excellent opportunities for such programs. The institute undertakes sponsored research and development projects from industrial and other organizations in the public as well as private sector.

The degree of Doctor of Philosophy shall be abbreviated as Ph.D. The degree of Doctor of Philosophy is granted for research work in areas recognized by the academic Department/Centre of the institute subject to the conditions and regulations contained hereinafter.

The research work shall be an original work characterized either by the discovery of facts, or by a fresh approach towards the interpretation and application of facts, or development of equipment making a distinct advance in instrument technology. It shall evince the candidate's capacity for critical examination and sound judgment and shall represent original contribution to the existing knowledge.

The degree of Doctor of Philosophy (Ph.D.) of the Atal Bihari Vajpayee -Indian Institute of Information Technology Management Gwalior shall be conferred on a candidate who fulfills all the requirements specified in these Ordinances and Regulations.

***** Definitions/Ordinance *****

1. DEFINITIONS :-

- (i) **DRC** : - shall mean Research Committee of the Department/Centre, which shall consist of senior faculty members of the Department/Centre.
- (ii) **Applicant** : - shall mean an individual who applies for admission to the Ph.D. programme of the Atal Bihari Vajpayee - Indian Institute of Information Technology Management Gwalior on a prescribed Application Form.
- (iii) **Candidate** : - shall mean a person registered for the Ph.D. degree and who has successfully completed the course requirement, the comprehensive examination and has submitted an approved research plan as per **R.9** of the Regulations.
- (iv) **Program Coordinator** : - shall mean a member of the academic staff appointed to look after the candidate's research interests in the absence of the Supervisor and after the submission of the thesis.
- (v) **Joint-supervisor** : - shall mean an additional supervisor approved by the PG Board on the recommendation of Department/Centre to help in the accomplishment of the research work of the student/candidate, as per **R.6** of the Regulations.
- (vi) **Course Advisor** : - shall mean a faculty member nominated by the Department/Centre to chalk-out the programme of study of a student registered for the Ph.D. and to advise him/her on the courses to be taken by him/her. If a supervisor(s) has already been appointed, he/she shall be the Courses Advisor for that student.
- (vii) **Course work** : - shall mean courses of study prescribed in the Department/Centre through the course Advisor to be undertaken by a student registered for the Ph.D. Degree.
- (viii) **Dean(AcademicAffairs):-**shall mean the Dean, Academic Affairs of the Institute.
- (ix) **Degree** : - shall mean the Degree of Doctor of Philosophy (Ph.D.) of the Atal Bihari Vajpyee - Indian Institute of Information Technology and Management Gwalior.
- (x) **Educational Institution** : - shall mean those colleges which offer Bachelor's Degree or higher.

- (xi) **Full-time Research Student/Candidate** : - shall mean a person registered for the Ph.D. Degree devoting full time for completing the degree requirements.
 - (xii) **Institute** : - shall mean the Atal Bihari Vajpyee - Indian Institute of Information Technology and Management Gwalior.
 - (xiii) **Institute Research Board** : - shall mean the Institute Research Board of the Atal Bihari Vajpyee - Indian Institute of Information Technology and Management, Gwalior.
 - (xiv) **Institute Research Student/Candidate (Research Scholar)** : - shall mean a person registered for the Institute Ph.D. Degree.
 - (xv) **Minimum Registration Period** : - shall mean the minimum period for which a candidate must be registered, including the time spent as student before becoming a candidate, prior to submission of the thesis.
 - (xvi) **ODC** : - shall mean Oral Defense Committee.
 - (xvii) **Part-time Research Student/Candidate** : - a person who is registered for the Ph.D. degree and will devote part of his/her time towards this pursuit.
 - (xviii) **Registration Period** : - shall mean the length of time span commencing with the date of initial registration at the institute on full-time basis.
 - (xix) **Residency** : - shall mean the minimum period for which a student /candidate must attend the institute on full-time basis.
 - (xx) **SRC** : - shall mean Student Research Committee.
 - (xxi) **Sponsored Research Student/Candidate** : - shall mean a full time research student/candidate except that he/she receives complete financial support from the sponsoring organization/his (her) employer.
 - (xxii) **Student** : - shall mean a person registered for the Ph.D. degree prior to becoming a candidate.
 - (xxiii) **Supervisor** : - shall mean a member of the academic staff of the Institute approved by DRC to supervise the research /academic work of the student/candidate.
2. A candidate having Master's degree in Engineering/Technology/ Management (with engineering background) /Applied Sciences (Physics, Mathematics, Electronics, Industrial Mathematics) or any other equivalent qualification recognized by the Ins-

titute with a minimum of 65% marks or CGPA of 7.00 on a 10 point scale in qualifying degree. For more details regarding the eligibility criteria refers to **(R.2)**.

3. For a student to become a candidate for the degree, he shall have to satisfy the requirements as laid down in the Regulations and be accepted by the SRC.
4. A candidate registered for the Ph.D. programme shall require to satisfy a minimum Registration period requirement, as laid down in the Regulations **(R.5)**.
5. A student/candidate shall be required to earn prescribed minimum credits through courses and carry out his research work at the Institute, under the guidance of approved supervisor(s). In special circumstances, a full-time student/candidate may be permitted by the Institute Research Board (IRB) on the recommendations of DRC to carry out his research outside the Institute.
6. A candidate needs to complete all the requirements for the award of the degree within a period specified in the regulations.
7. The date of initial registration shall normally be the date on which the student formally registers for the first time in the beginning of a Semester for the Ph.D. programme, which shall also be the date of his joining the programme for all the intents and purposes.
8. However, for the purpose of minimum residential requirement in the case of change of status from full-time to part time, the time spent as full time will be taken into account.
9. If a student/candidate withdraws from his Ph.D. programme or his registration is terminated, his student/candidate status ceases. If such a candidate is re-admitted, he may be given weightage to the credits acquired during the previous registration on the recommendation of DRC except in the case of termination on disciplinary grounds.
10. The award of the Ph.D. to an eligible candidate shall be made in accordance with the Regulations of the Institute.

2. REGULATIONS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

The following Regulations shall apply to all categories of students/candidates pursuing courses of study and research leading to the Ph.D. degree :

2.1 R.1 : CLASSIFICATIONS

1. Students enrolled to the Ph.D. program shall be categorized under any one of the following categories which will be decided and recommended by SRC/DRC.

(I) Full-time Research Student/Candidate :

(a) **Institute Research Student/Candidate :** Institute Research Student /Candidate getting institutional Fellowship.

(b) **Govt./ Semi Govt. Fellowship Awardee (QIP, CSIR, DAE, DST, etc. :)** These research scholars receive their fellowship and contingency grants from supporting organizations such as Council for Scientific and Industrial Research (CSIR), University Grants Commission (UGC), Quality Improvement Program (QIP), DRDO ; AICTE and other similar organizations.

(c) Sponsored Students/Candidates :

(i) An employee of a Public Sector Undertaking, a Government Department / Centre, Defence organization a Research Development Organization, or a private industry (approved by the concerned faculty/Institute Research Board) or an Educational Institution, sponsored by his/her employee with their normal salary and allowances and are relieved for the period of not less than three years for pursuing Ph.D. programme. In case, the sponsorship is withdrawn, the candidate can continue his Ph.D., provided he/she has passed the comprehensive examination. Such candidate should have working experience of at least two years in the relevant field.

(ii) **For Sponsored Project Employee :** Any project employee working under the sponsored project at ABV-IIITM Gwalior.

(d) Self-financed (Indian/Foreign)/Study Leave/College Teacher :

— **Indian -** This category refers to persons with experience and with good track record to join the doctoral programme.

- **Foreign** - These students are admitted through Embassy of the respective Govt. after getting approval from the Ministry of External Affairs and no objection certificate from the Ministry of Human Resources Development, Department / Centre of Education, Govt. of India or admitted under an MOU with ABV-IIITMG.
- **Casual** - External candidate wishes to avail research facilities at ABV-IIITM Gwalior, will register as casual student for a period not exceeding six months.

(II) Part-time Research Student/Candidate :

- (a) Institute Faculty/Staff :** This category refers to persons who are permanent employees of the institute.
- (b) External Candidates (Sponsored) :** This category refers to the persons who are working in other organizations recognized by ABV-IIITM Gwalior for research purposes.

2.2 R.2 : ADMISSION ELIGIBILITY

An applicant possessing the following qualifications in appropriate areas shall be eligible to apply for admission for Ph.D. programme of the institute.

1. Full-time Research Student/Candidate :

- (a) A candidate having Master's degree in Engineering/Technology/ Management (with engineering background) /Applied Sciences (Physics, Mathematics, Electronics, Industrial Mathematics) or any other equivalent qualification recognized by the Institute with a minimum of 65% marks or CGPA of 7.00 on a 10 point scale in qualifying degree. Additionally, the candidates must have qualified the GATE/NET exam. The candidates having high rank in National Level Fellowship examinations such as CAT or equivalent are also eligible to apply. The requirement for GATE can be exempted for the candidates having both the Master's degree and B.Tech from Centrally Funded Technical Institutions (CFTIs) with CPI 8.0 or above at B.Tech level. Exceptionally good candidates having the bachelor degree from CFTI with CPI 8.0 or above may also be considered for the Ph.D admission.
- (b) **For Sponsored Project Employee :** Any employee working under the sponsored project at ABV-IIITM Gwalior may also apply for the Ph.D. programme under the supervision of corresponding project investigator(s) subjected to the availability of funding for approximately two years after the date of selection. The candidate(s) fulfilling the eligibility criteria for Ph.D. admission and recommended by the concerned PI can apply for the Ph.D. programme at any time, the selection will be done by a committee duly constituted by competent authority. The selected candidate(s) will not get any financial support from the institute during the entire Ph.D. programme. In case of the project completion, the candidate may continue his/her research work under the same supervisor. However, the supervisor may support the candidate from other project funding or candidate may continue the programme as self-sponsored or request to convert his/her Ph.D. form full time to part time programme.

2. Eligibility for Part-Time Ph.D. :

- (a) Institute invites applications from professionals working in Industries/Academic Institutions/Research Development (R & D) Organisation for admission to

Part-Time Ph.D. Programme in the areas specified below. Candidates working in emerging industry related research in connection to the research areas mentioned below are encouraged to apply. The minimum eligibility criteria for admission to Part-Time Ph.D. programme are as follows :

- (b) Candidate must have a Master's degree in Engineering/Technology/ Management (with engineering background)/Applied Sciences (Physics, Mathematics, Electronics, Industrial Mathematics) or any other equivalent qualification recognized by the institute with a minimum of 65% marks or CGPA of 7.00 on a 10 point scale in qualifying degree.
- (c) The applicants must have a minimum of two (02) years of experience in relevant area along with the discipline specific criteria. However, the minimum PG qualification would be relaxed to UG qualification (only for B.E/B.Tech background) for candidates having a minimum of five (05) years of experience in total from Industry/Academic Institutions/Research Development (R & D). Moreover, while applying, the candidate has to take NOC from the current organization.

3. Admission of Faculty/Staff of the Institute :

- (a) A faculty member or non-academic staff of the institute who satisfies eligibility qualifications may be considered for admission to the Ph.D. programme as a part time student provided he/she has been given administrative clearance by the Director of the institute. Those with B.Tech/B.E. qualification and with three years of relevant working experience must have high ranking valid GATE score/CAT.
- (b) Permanent academic staff of the institute may be given administrative clearance to seek registration on part-time basis after satisfactory completion of the period of probation subject to the recommendation of the concerned Head of the Department/Centre and approval by the Director.

2.3 R.3 : RESERVATION/RELAXATION

- Reservation/Relaxation for SC/ST/PwD/EWS and OBC will be given as per the norms of Government of India (GoI).

2.4 R.4 : SELECTION PROCEDURE :

- The DRC of the concerned department may set the short listing criteria, if considered necessary, higher than the minimum eligibility defined above, and will conduct test/interview for admission to Ph.D Programme with the approval from Director (Chairman, IRB).

2.5 R.5 : REGISTRATION :

- (a) Every student/candidate will be required to register every semester till the submission of the thesis. The registration shall be subject to the completion of specified number of credits/courses and/or satisfactory progress in his research work as recommended by SRC.
- (b) A candidate who has a B.E./B.Tech. shall be required to be registered for the degree for a period of not less than three Calendar years/thirty six (36) months from the date of his initial registration ; in exceptional cases, the minimum period of registration may be reduced to two calendar years/twenty four (24) months with the approval of the Senate. For a candidate who has an M.Tech. degree or its equivalent the minimum period of registration shall be not less than two calendar years/twenty four (24) months.
- (c) The candidates of all categories shall normally submit their thesis within a period of five years from the date of their initial registration for the Ph.D. programme. However, as a special case, this limit may be extended to a maximum of seven years on the recommendation by SRC and approval by Director, after which the registration shall stand cancelled automatically.

2.6 R.6 : THESIS SUPERVISOR(s) :

- (a) Every admitted student shall be assigned a Research Supervisor(s) by the Department/Centre as per preference of the student, subject to the approval of Director. For this purpose, a formality will be completed and processed during first semester of the student's joining (**See Annexure-2**).
- (b) A Supervisor(s) can be any full-time faculty member of the Institute with a Ph.D. degree.
- (c) On the recommendations of the SRC, and Dean (Academic Affairs), Director, may appoint more than one supervisor(s) not exceeding a total of three to supervise the student/candidate. These may be from inside or outside the Institute and normally, there should not be more than two supervisors from within the Institute. Appointment of any other supervisor(s) would not be made normally after the lapse of eighteen (18) calendar months from the date of initial registration of the student/candidate. However, if appointed, he will be designated as co-supervisor.
- (d) **Number of Scholars under a faculty :** The maximum of scholars supervised by a faculty member at any time shall not be more than Eight (08) jointly or Five (05) singly or a combination of both, the aggregate not exceeding eight (including internal/outside scholars) as per Table 1 shown below :

TABLE 1 – Students under supervision

	Single supervision	Joint supervision
(a)	5	0
(b)	4	2
(c)	3	4
(d)	2	6
(e)	1	7
(f)	0	8

NOTE* Joint supervision of a Ph.D. scholar will be treated as **0.5** per faculty member.

- (e) **Appointment of Supervisors and caretaker Supervisor for Ph.D. students :**

A faculty member appointed as a Ph.D. supervisor is normally expected to be available to a research student/candidate in the Institute till the thesis is submitted. However, under unavoidable circumstances, such as : long leave of more than twelve (12) months ; resignation ; retirement ; or death ; a supervisor may not be available to the student/scholar. In such special cases, appointment of supervisor(s) will be regulated and recommended by SRC.

2.7 R.7 : COURSE CREDIT REQUIREMENTS :

- (a) Each student will be required to take some courses of credit requirements (Table-2) as prescribed by the supervisor and approved by the SRC. Students earn credits for a course only if he/she obtains a minimum of ‘C’ Grade for successfully completing the course.
- (b) SRC may recommend additional course(s) as Audit course(s), if required, in a particular case. Student earns credit for Audit course(s) if he/she obtains a minimum of ‘NP’ Grade for successfully completing the course.
- (c) The pre-Ph.D. courses including Audit course are to be completed successfully in the three/four semesters (counted from the date of registration) by full time/ part time students respectively.

2.8 R.8 : COURSES CREDITS :

The courses offered for the Ph.D. programs may be Lecture course, Laboratory courses, Design courses, Mini Project and Seminars.

1. Seminars shall satisfy the following conditions :

- (a) Each seminar shall carry two credits.
- (b) Seminar shall be treated as a course for the purpose of registration and evaluation.
- (c) Seminar Co-ordinators shall be appointed by the SRC. They shall arrange the seminars and forward the grades awarded by the panels of examiners to the Examination Cell by the end of the semester.
- (d) A student shall not take more than two seminars during the entire Ph.D. program.

TABLE 2 – COURSE CREDIT REQUIREMENTS

SL.No	Candidate having	Range of Credit Requirements	Remarks
1.	ME/M.Tech./M.Phil. or equivalent Degree admitted to the discipline as applicable	12 - 15 Credits	Course from the existing M.Tech. and/or pre-Ph.D. courses offered by own Deptt./other Deptts.
2.	BE / B.Tech. or equivalent admitted to the discipline as applicable	24 - 30 Credits	Course from the existing PG level. and/or pre-Ph.D. courses offered by own Deptt./other Deptts.
3.	M.Sc or equivalent	12 - 16 Credits	Course from the existing PG level. and/or pre-Ph.D. courses offered by own Deptt./other Deptts

2.9 R.9 : COMPREHENSIVE EXAMINATION :

1. Soon after successfully completing the pre-Ph.D. course requirements, each student will be required to take a comprehensive examination and qualify it. It will test students' comprehension of his broad field of research and his academic preparation and potential to carry out the proposed research plan. Comprehensive examination within the stipulated time frame of Eighteen (18) months / Twenty Four (24) months for full time/part time Ph.D. scholars respectively, shall invariably be conducted by the concerned Department/Centre. The comprehensive examination should be a combination of written and oral examination and should be separately conducted before the evaluation of the research proposal. The examination will be conducted by a committee called Student's Research Committee (SRC), which will be constituted as follows :
 - (a) Chairman, DRC or his nominee : Chairman
 - (b) One expert in the field from the Department/Centre.
 - (c) One expert, preferably in the concerned area, from outside the Department/ Centre/ Institute to which the students belongs.

(d) Supervisor(s) :

NOTE* : Member Experts at (b) and (c) above will be recommended by the head of the Department and will be approved by the Director.

2. The student's research committee (SRC) on the basis of the performance of the student in the examination will make one of the following recommendations :

(a) **Recommendations as :**

(i) Passed.

(ii) To re-appear in the examination after the defined period of the time specified by the SRC and after taking additional courses, if any.

(iii) Failed.

(b) **Research plan :**

(i) Approved.

(ii) Not Approved.

3. A student will be provided the maximum of two attempts to pass the comprehensive examination.

2.10 R.10 : ELIGIBILITY FOR THE CANDIDACY FOR THE DEGREE :

1. The student shall make a request for the candidacy for the Ph.D. degree through SRC, after having passed the comprehensive examination. She/He shall be evaluated for candidacy for Ph.D. degree program.

2. A student shall be formally registered as a candidate for the Ph. D. degree after he/she complied with the following :

(a) has completed his course work ;

(b) has passed the comprehensive examination ; and

(c) has submitted a research plan duly recommended and approved by SRC.

2.11 R.11 : PERFORMANCE MONITORING :

1. The academic/research progress of each student/candidate will be monitored by DRC. For this purpose, each candidate will be asked to submit a progress report at the end of each semester to Chairman-DRC through supervisor(s).

2. The Chairman-DRC in the Department/Centre will be coordinating collection of progress report written and signed by the student/candidate and forwarded by the supervisor(s) every semester.
3. The Supervisor(s) and SRC will evaluate the progress report of the student.
4. 'S' grade is to be awarded during that semester if the progress is 'Satisfactory'.
5. If the progress is 'Unsatisfactory', 'U' grade is to be awarded and appropriate action taken. For the first appearance of 'U' grade, a warning would be issued to the candidate. Subsequently, the fellowship/assistantship (in case of regular scholar) of the candidate would be withheld.
6. If there are two consecutive 'U's, the registration in Ph.D Programme will stand terminated.
7. **Submission of Progress Report** : Submission of progress report should continue till pre-synopsis seminar.
8. **Terms of the Research Work** :
 - (a) **1st Term** : July to December ;
 - (b) **2nd Term** : January to June ;
9. The academic calendar will include the following dates for the submission of the progress report. Such as :
 1. **I Semester** :
 - (a) 1st November (Issue of blank progress forms by the PG section to respective Department / Centre).
 - (b) 15th December (Submission of progress reports by the students to the Department / Centre).
 2. **II Semester** :
 - (a) 1st May (Issue of blank progress forms by the PG section to respective Department / Centre).
 - (b) 15th June (Submission of progress reports by the students to the Department / Centre).

2.12 R.12 : SEMINAR AND SYNOPSIS :

1. Seminar :

- (a) SRC shall access work through the pre-synopsis seminar. The student can submit the synopsis only if the SRC is satisfied about the quality of the work for submission as a Ph.D thesis.
- (b) Details of the pre-synopsis seminar shall be adequately notified so as to enable interested staff members and students to attend it.

2. Synopsis :

- (a) The synopsis should be submitted normally within two (2) months after the presentation of pre-synopsis seminar. In case the synopsis is not submitted in the specified period, the student may be asked to present another pre-synopsis seminar.
- (b) On completion of the research work the candidate shall submit to SRC through supervisor(s), Eight (8) copies of the synopsis. The SRC will forward the synopsis with its recommendations to the Dean (Academic Affairs) for approval by the Director.
- (c) The candidate shall be required to submit fresh synopsis if he fails to submit his thesis within Nine (9) months of submission of earlier synopsis.

However, in case a candidate fails to submit his thesis within the stipulated time and has suitable justification for the same, the Director, may on recommendations made by the SRC and on individual merits of each case grant him extension in time by not more than two months, i.e. the candidate may be allowed to submit his thesis within a period normally not exceeding eleven (11) months from the date of submission of synopsis.

2.13 R.13 : PANEL OF EXAMINERS :

- A panel of at least ten (10) experts in the area of the Ph.D. thesis would be suggested by Supervisor(s) and recommended by the SRC while forwarding the title and synopsis of the thesis. The panel so recommended would include at least 50% of the examiners from outside India. Three examiner's each from the panel of Indian and Foreign examiner's will be approved by the Director in the order of referees.

2.14 R.14 : BOARD OF EXAMINERS :

- On receipt of the title and synopsis of the thesis and panel of examiner by SRC the Dean (Academic Affairs) will recommended the board of examiners for each candidate to the Director for approval. The board will consist of internal examiners, normally the supervisor(s), and at least two external examiners : at least One from within India and at least one from abroad, who shall be expert in the subject of the thesis. These external examiners shall be chosen normally from panel of examiners recommended by the SRC as aforesaid. A person working in the same Laboratory(ies) Institution(s) where research candidate is employed can not, however, be appointed as External Examiner for evaluating the Thesis of that Research Candidate. Further no person can be appointed as external examiner from Laboratory/Institution to which the Co-Supervisor(s) of the Research Candidate belongs.

2.15 R.15 : THESIS SUBMISSION :

The thesis should bear the evidence of the candidate's capacity for analysis and judgment as well as his ability to carry out independent investigation, design or development. No part of the thesis or supplementary published work shall have been submitted for the award of any other degree or diploma.

1. The thesis shall be written in English in the specific format and shall contain critical account of the candidate's research. It should be characterized by discovery of facts or fresh approach towards interpretation of facts and theories or significant contribution to knowledge or development or a combination of these. It should bear evidence of the candidate's capacity for analysis and judgment as well as his ability to carry out independent investigation, design or development.
2. A candidate may submit his thesis within the time period as stipulated in **R.5.(b)**, **R.5.(c)** provided that :
 - (a) He/She has completed the minimum period of registration as provided in **R.5.(c)**.
 - (b) He/She has become a candidate for the award of Ph.D degree as provided in **R.9.2**; and
 - (c) He/she should have at least two (02) journals in SCI/SCIE/SSCIE/ABDC (B and above) before his/her pre-synopsis seminar.

(d) He/She has submitted the title and synopsis of the thesis at least two month prior to the submission of the thesis.

3. The Ph.D thesis must contain the following copyright certificate in the beginning of the thesis on a separate page on the left side :

**© ABV-INDIAN INSTITUTE OF INFORMATION TECHNOLOGY
& MANAGEMENT, GWALIOR , 20XX
ALL RIGHTS RESERVED**

4. The thesis cover page should be as per the format given in **Annexure-3**, The Candidate's Declaration should be as per the format given in **Annexure-4**.

5. The candidate for the degree shall submit three copies of thesis with a soft cover. In case of co-supervision four/five copies of thesis shall be submitted by candidate.

2.16 R.16 : THESIS EVALUATION :

1. Each examiner will be requested to submit to the Dean (Academic Affairs) a detailed assessment report and his recommendations on the prescribed proforma with in twelve weeks of the date of receiving the thesis.

2. In the event of the report not being received from an examiner with in a period of three months, the Dean (Academic Affairs) may appoint from the examiner's approved in order of preference with the approval from the Director another examiner in his place for evaluating the thesis.

3. (a) Examiners will examine the thesis individually with a view to judge that the thesis is a piece of research work characterized by ;

(i) The discovery of facts, or

(ii) A fresh approach towards interpretation and application of facts or theories,
or

(iii) A distinct advancement in instrument technology.

(b) The examiner will be required to give his opinion about candidate's capacity for critical examination and sound judgment. The internal examiners shall be submitting one report. All examiners will submit the reports on the prescribed form clearly stating that ;

(i) The thesis is recommended for the award of Ph.D, or

- (ii) The thesis is recommended for the award of Ph.D Degree subject to the candidate giving satisfactory answers to queries specifically mentioned in the report at the time of viva-voce examination, or
 - (iii) The candidate will be allowed to resubmit the thesis in the revised form, or
 - (iv) The thesis be rejected.
- (c) (i) If all the three examiners recommend acceptance of the thesis, there recommendations shall be accepted. Out of three external examiners, at least one examiner should be a foreign examiner preferably.
- (ii) If two of the three examiners recommend rejection, their decision would be accepted. The candidate may, however, be allowed to resubmit the thesis normally after one year. Normal process will be followed for the evaluation of the thesis.
- (iii) In case where two reports are received by the Ph.D. section indicating acceptance of the thesis and the report is not obtained from the third examiner in six months after accepting the synopsis, Director may allow to conduct the viva exam accordingly.
- (iv) If one of the examiners recommends rejection, the candidate's replies to the comments made by the examiners shall be sent to the examiners and his clear verdict sought. The examiner may than recommend acceptance, rejection or revision of the thesis. In case the thesis is accepted, sub-clause c(i) above will be applicable. In case of recommendation for revision, sub-clause (iv) below will apply. However, if the examiner still recommends rejection, a fourth examiner would be appointed from the panel of the examiners already approved by the Director. In such cases sub-clause (v) will apply.
- (v) In case one examiner recommends revision of the thesis, the thesis would be revised normally with in one year, if the candidate so desires. The revised version of the thesis would be sent to all the examiners for their recommendations. If the candidate does not agree for revision he may ask for appointment of the fourth examiner under sub-clause (vi) below :
- (vi) The new examiner if appointed, shall be Indian or Foreign depending on whether the thesis was rejected by an Indian or a foreign examiner in the

first instance. The reports of all the examiners will be sent to him/her without revealing the identity of the examiner, along with the response of the candidate, if any, to these. The thesis shall be deemed to be acceptable if three out of four examiners recommend acceptance.

If the fourth examiner recommends revision, the thesis would be suitably revised and resubmitted normally after three (3) months and sent for examination to all the examiners except to the one in whose place the fourth examiner was appointed.

In case the fourth examiner recommends rejection or his recommendations for revision is not accepted by the candidate, the thesis would be rejected. The candidate will be allowed to resubmit the thesis after one year.

- (vii) If two of three examiners recommend revision of the thesis the candidate may revise the thesis accordingly and resubmit it normally within a period of one year for the evaluation by the same set of examiners.
- (viii) The correspondence regarding (c), (d), and (e) above will be done by the Dean (Academic Affairs).
- (ix) If one examiner recommends rejection and other examiner recommends revision of the thesis, the candidates may revise the thesis and resubmit it normally within a period of one year, for evaluation by the same set of examiners.
- (d) Any doubt arising out of following the procedure laid down in **R.16.3(c)** above shall be referred to the Director for a decision.
- (e) In case of ambiguous recommendations by the examiner, Dean (Academic Affairs) will approach the examiner for a clear recommendation. In case clear recommendation is not forthcoming, the matter may be referred to the Director for his decision.
- (f) As a general rule, in case where acceptance of the synopsis is not received by the Ph.D. section, a reminder may be sent after one week. After sending three reminders, synopsis may be sent to the next examiner from the panel of examiners.
- (g) Once examiner accepts the synopsis and starts evaluating the thesis, Ph.D. section is advised to wait for six weeks. A reminder to complete the evaluation

may be sent after six weeks, subsequently reminder may be sent after every two weeks.

2.17 R.17 : RE-SUBMISSION :

1. In case of re-submission of thesis, the student will have to submit the semester fees till he re-submits the thesis.
2. The revised thesis may be submitted with in one year from the date of such intimation.
3. No candidate shall be allowed to resubmit the same thesis more than once.

2.18 R.18 : VIVA-VOCE EXAMINATION :

1. If the thesis is recommended for the award of degree, the candidate shall be required to defend his work/thesis orally (viva-voce examination) before a duly constituted committee hereinafter referred to as the Oral Defense Committee (ODC).
2. The ODC shall consist Supervisor(s) (internal examiners), and at least one Indian external examiner, and SRC. The internal examiner shall arrange the viva-voce examination of candidate.
3. (a) In case of non availability of the Indian External Examiner in conducting the viva-voce examination, the Director may appoint another examiner to conduct the via-voce examination from the existing panel. If need be, the SRC may suggest a fresh panel of examiners.
(b) The viva-voce examiners shall be provided with the comments made by the examiners before the viva-voce examination.
(c) If there is a difference of opinion among the viva-voce examiners, the recommendations of the viva-voce Board will be put up to the Director for a decision who may either direct that a fresh viva be held or recommend acceptance or otherwise to the Senate.
(d) Internal Examiner(s) shall arrange for the viva-voce examination of the candidate as early as possible and normally with in two months from the date of communication to the Internal Examiner for holding the viva-voce examination.
(e) In case of the inability of the internal examiner(s) to have the viva-voce examination conducted due to any reason whatsoever, the Director may appoint

another Internal Examiner(s) from amongst faculty of the Department/Centre concerned who belongs to the particular field in consultation with Dean (Academic Affairs), and Head of the Department/Centre concerned to conduct the viva-voce examination. In such cases also, the Ph.D work will be deemed to have been carried out under the guidance of the supervisor(s) only.

- (f) Any other matter not explicitly provided herein or of an exceptional nature may be referred to the Director for his decision.

2.19 R.19 : AWARD OF Ph.D. DEGREE :

1. On the completion of all stages of the examination, the Oral Defence Committee shall recommend to the Dean(Research), one of the following courses of action :

- (a) That the degree be awarded ;
- (b) That the candidate be re-examined at a later specified time in a specified manner ;
- (c) That the degree shall not be awarded. The thesis will be rejected on the conclusion that the thesis is not genuinely the work of candidate.

* In case of (a) and (b), the Oral Defense Committee shall also provide to the candidate a list of all correction and modifications in the thesis evaluation.

The second viva-voce examination may be held normally after a period of three (3) months.

2. The degree shall be awarded by the Senate, provided that :
 - (a) The Oral Defense Committee so recommends ;
 - (b) The candidate produces a 'No dues Certificate' in prescribed form.
 - (c) The candidate has submitted two hard cover copies of the thesis ; one for the Department/Centre's Library and one for Central Library. The thesis should incorporate all necessary/corrections/modifications.

2.20 R.20 : LEAVE AND ATTENDANCE :

A student /candidate will be entitled to avail leave as per leave Rules/Attendance Rules formulated and amended from time to time by the Institute. Presently these are as under :

1. During Course work :

A full-time Ph.D. student, during his/her stay at the institution will be entitled to

leave for thirty (30) days including leave on medical grounds, per academic year. He/she will not be entitled to mid semester breaks, summer and winter vacation at the end of the first semester. Leave beyond thirty (30) days in an academic year may be granted to Research scholar in exceptional case, by Head of the Department/Centre concerned, subject to the following conditions :

- (a) The leave beyond thirty (30) days will be without Assistantship/Scholarship/Fellowship ;
and
- (b) Such an extension of leave up to additional thirty (30) days will be granted only once during the programme of the scholar.
- (c) The leave may be subjected to the approval of the Head of the Department/ Centre/Programme Coordinator concerned on the recommendation of the Supervisor ; and a proper leave account of each student/candidate shall be maintained by the Department/Centre/Programme Coordinator concerned.

2. After completing the course work :

A full-time Ph.D student/candidate during his/her stay at the Institute, will be entitled to leave for thirty (30) days per academic year. He/she will not be entitled to mid-semester breaks, summer and winter vacations. In addition, a Ph.D student/candidate who has completed his/her course work may be granted leave on medical ground up to ten (10) days per academic year.

The women research student/candidate will be eligible for Maternity Leave with fellowship for a period not exceeding One hundred thirty five (135) days once during the tenure of the award.

3. Attendance :

A Ph.D. student irrespective of source of research assistantship including self financing student not drawing any fellowship and sponsored student, while pursuing course work, must have at least 75% attendance in each course in which he/she is registered. In case his/her attendance falls below 75% in any course during a month he/she will not be paid fellowship for that month. Further, if his/her attendance again falls short of 75% in any course in any subsequent month in that semester his/her studentship and fellowship will be terminated. A student falling short of 75% attendance in a course shall not be permitted to appear in the examination of that course.

A research student/candidate after having completed the course work must attend to his/her research work on all the working days and mark attendance except when he/she on duty/sanctioned leave. The requirement of 75% attendance will apply as above on daily attendance except in the cases where longer leave have been duly sanctioned with in the leave entitlement of the student.

For the above purpose, if 75% works out to be a number which is not whole number, the immediate lower whole number will be treated as the required 75% attendance.

2.21 R.21 : WITHDRAWAL FROM SEMESTER/COURSES :

1. A student/candidate may be permitted to withdraw from all the courses registered by him or the entire semester, on medical grounds supported by a medical certificate from the Institute Medical Officer. The medical certificate issued by a registered Medical Practitioner will also be accepted in those cases where the student/candidate has valid reasons for his absence from the institute. Withdrawal may also be granted by the Director provided he is convinced that the student/candidate cannot pursue his studies for the reason beyond his control.
2. Under no circumstances will a request for withdrawal be entertained after the major tests have begun. Student/Candidate should present the medical certificate in support of his absence on health reasons within two days of his rejoining the institute, if not produced already. Withdrawal will not be granted retrospectively.
3. The period of authorized absence in the semester should not be less than eight weeks of contact period for Semester withdrawal to be granted. Regularity in attending the classes and satisfactory performance in the mid-term examinations, if any, held prior to the date of application for withdrawal are the factors which would be taken into account while recommending/granting withdrawal.
4. Any semester withdrawal will count towards the maximum limit of **seven years** as stipulated above.

2.22 R.22 : CANCELLATION OF REGISTRATION :

Registration of a student/candidate shall be cancelled in any one of the following eventualities, after due approval of Director.

- (a) If he absents himself for a continuous period of four weeks without prior intimation/sanction of leave.

- (b) If he resigns from the Ph.D Programme and the registration is duly recommended by the Supervisor.
- (c) If he fails to renew his registration in any semester subject to the provision contained in these Ordinances Regulations.
- (d) If his academic progress is found unsatisfactory.
- (e) If all the prescribed Pre-Ph.D Courses including Audit course(s) are not successfully completed within the stipulated time frame of three/four semesters for full time/ part time Ph.D scholar respectively from initial registration.
- (f) If he does not clear the comprehensive examination as stipulated.
- (g) If he is found involved in an act of misconduct and/or indiscipline and termination has been recommended by a competent authority.

2.23 R.23 : SUPERVISION OF Ph.D STUDENTS OF OTHER INSTITUTES/UNIVERSITIES :

An ABV-IIITM Gwalior faculty may supervise guide Ph.D students of other institutes/universities subject to the following conditions.

- (a) The host institute/University is recognized by MoE-UGC/AICTE.
- (b) The total number of such externally enrolled Ph.D students under any faculty of ABV-IIITM Gwalior, should not be more than two (02) at any point of time. This number is to be included in the maximum number of Ph.D students that a faculty of (ABV-IIITM) may supervise as per **R 6.(d)**.
- (c) Due to extension of this facility to the host institute, the work of the ABV-IIITM Gwalior should not suffer.
- (d) If the concerned faculty of ABV-IIITM Gwalior, as co-guide is required to visit the Institute/Outside, he/she shall seek specific approval for the visit on Casual Leave/leave as due, by the competent authority and shall not be on duty for the visit. Further, all expenses, facilities etc. in this regard shall be borne by the host Institution.
- (e) If the external candidate wishes to avail the facilities at ABV-IIITM , he/she shall register as casual student for a period not exceeding six months as per rules and regulations.

The host Institute/University as per regulations, appoints a foreigner as one of the examiners for Ph.D thesis or else it is recognized by ABV-IIITM Gwalior, for this purpose. Wherever, the foreign examiner is not appointed, the Director is authorized to take such a decision. A Standing committee of Dean (Academic Affairs), Dean (Academic) and the concerned Head of Department is constituted to consider such requests from the host institution.

2.24 R.24 : GENERAL :

1. Notwithstanding anything contained in these Ordinances Regulations, all categories of the students/candidates shall be governed by the rules and procedures framed by the Senate in this behalf, and in force from time to time.

2. Unfair means and Plagiarism :

- (a) In cases a student is found adopting or suspected of adopting unfair means before, during and after the examination or lifting of some other's works(s) and inserting it in his/her project, seminar and dissertation etc. without proper acknowledge, credit and reference or plagiarizing the dissertation/project report etc. such panel action shall be taken by the Institute as may be necessary to uphold the sanctity and integrity of the examination system and the creditability of the Institute.
- (b) All such cases may be taken suo-moto cognizance of by the Institute Research Board (IRB) appointed by the Senate for this purpose. Such cases may also be reported by examiners/invigilators to Dean (Academic Affairs) and or the IRB for consideration. After giving an opportunity to the concerned student(s) to explain the conduct/defend the charge, the Chairman, Senate on the recommendation of IRB shall take action including imposition of appropriate penalty including award of 'F' Grade in the concerned course(s) on the concerned student(s).

2.25 R.25 : INTERPRETATION :

1. Any doubt or dispute about the interpretation of these Ordinances and Regulations shall be referred to the Chairman, Senate whose decisions shall be final.
2. Discipline specific eligibility for admission to Ph.D in different disciplines is summarized in **Annexure-1**. This may be reviewed from time to time by the concerning Department /Centre and approved by the Senate.

3. Any other matter not covered in the ordinances Regulations shall be referred to Chairman, IRB.

Note : The recommendations of SRC in respect of Ph.D students are to be made on prescribed Proformas available in the office of concerned Department / Centre as well as in the Office of Dean (Academic Affairs).

Annexure-1

Discipline specific criteria for admission to Ph.D. Programme (subj. to R.2)

- 1. For Engineering :** Candidates should have a M.Tech/ M.S./ M.E. or equivalent degree in CSE (Computer Science and Engineering)/IT (Information Technology)/ECE (Electronics and Communication Engineering)/EEE (Electrical Electronics Engineering) with first division at undergraduate (B.E./B.Tech) level. Additionally, the candidates must have qualified the GATE exam. The requirement of GATE can be exempted for the candidates having both the Master's degree and B.Tech from Centrally Funded Technical Institutions (CFTIs) with CPI 8.0 or above at B.Tech level. Exceptionally good candidates having the bachelor degree from CFTI with CPI 8.0 or above may also be considered for the Ph.D admission.
- 2. For Management :** Candidates should have Master's degree in Engineering/ Technology/Management (with engineering background) with first division at undergraduate (B.E./B.Tech) level. The candidates having high rank in National Level Fellowship examinations such as CAT or equivalent are also eligible to apply.
- 3. For Applied Sciences :** Candidates must have Master's degree in Physics/ Mathematics/or branch related to Physics/Mathematics with first division at undergraduate level. Additionally, the candidates must have qualified the GATE/NET exam.

Research areas in different disciplines :

- 1. Engineering :** Microelectronics/VLSI/Embedded Systems, Computer Architecture, Computer Vision, Graphics, Algorithms and Complexity of Computing, Image Processing, Robotics, Digital Communication and Wireless Communication, Computer Networks, Wireless Sensor Networks, IoT, Cyber Physical Systems, Mobile Computing, Grid Computing, Information Security, Soft Computing, Data Mining, Artificial Intelligence, Machine Learning, Deep Learning, Database/WEB/Multimedia Technologies, Distributed Computing, Analytics, High Performance Computing, Parallel Computing, Distributed and Cloud Computing, Software Engineering, Data Science and Analytics, Cognitive Radio network etc.
- 2. Management :** Operations, Marketing, Finance, Information Systems Management, Human Resource Management/Organization Behaviour, Business Econo-

mics, e-Governance, Environment Management, Technology Management, Management of Informal Sector, Project Management, Entrepreneurship, International Business, System Dynamics, Business Analytics, etc.

- 3. Applied Sciences :** Physics/Applied Physics/Material Science/ Nanotechnology/ Computational Physics/Nano Electronics/Nano-electronics/Opto-electronics/Device Modelling/Engineering Physics/Electronics/ Applied Mathematics / Operations Research/ Engineering Mathematics / Reliability / Applied Statistics / Soft Computing Applications / Optimization / Cryptography /Modelling and Simulation / Mathematical Biology, etc.

Annexure-2



**Atal Bihari Vajpayee
Indian Institute of Information Technology and
Management Gwalior**

APPLICATION FOR THE COURSES TO BE COMPLETED AND REQUEST FOR
CONSTITUTION OF STUDENT RESEARCH COMMITTEE

- A. 1. Name of the Research Scholar (English) :.....
(Hindi) :
2. Department/Centre :
3. Tentative Area of Research/Title in English (limited to 80 characters) :.....
.....
.....
4. Date of Registration :
5. Status : Full-Time/Part-Time :.....

B. 1. Particulars of Proposed Supervisor(s) :

Name & Designation	Department	No. of Students Supervising excluding/including this student		Sig. of Supervisor
		Single	Joint	

C. Total Number of Credits to be completed

1. (i) Credits are earned if he/she obtained 'C' or higher grade.
(ii) Registration is terminated if there are two consecutive 'U's (Unsatisfactory).

2. Proposed Courses to be completed (in figure).....words.....

Semester	Session	Course No and Title	Credits	Remarks

Certified that the courses as mentioned above have not been taken by me for my earlier degree/diploma

Dated :

(Signature of Student)

Following was discussed by DRC :

- a. Candidates educational back ground
- b. Research proposal in brief
- c. Credits Requirements

Members of Student Research Committee in accordance with Ph.D. Regulation

- (i) (ii)
- (iii) (iv)
- (v) (vi)

(Chairman DRC)

The SRC recommends that the candidate should complete the courses as per details mentioned overleaf.

Signature of the Supervisor(s)

- 1.
- 2.
- 3.

Annexure-3

TITLE OF THE THESIS(Font Size 24)

A THESIS(Font Size 14)

Submitted in fulfillment of the
requirements for the award of the degree
of

DOCTOR OF PHILOSOPHY

In
Discipline name

By

CANDIDATE NAME(Font Size 14)



**ATAL BIHARI VAJPAYEE- INDIAN INSTITUTE OF INFORMATION
TECHNOLOGY AND MANAGEMENT GWALIOR**

GWALIOR – 474010 (M.P) INDIA

MONTH YEAR

Candidate's Declaration

I hereby certify that the work, which is being presented in the thesis, entitled “
.....” in fulfillment of the requirement of the award of the Degree of Doctor of Philosophy and submitted in the Department of Department Name of the Institute is an authentic record of my own work carried out during a period from Month-Year to Month-Year under the supervision of Supervisor(s) name.

The matter presented in this thesis has not been submitted by me for the award of any other degree of this or any other Institute.

Date :

Signature of the Candidate

This is to certify that the above statement made by the candidate is correct to the best of my knowledge.

Date :

Signature of the Research Supervisor(s)

The Ph.D Viva-voce examination of Candidate Name, Research Scholar, has been held on

Signature of
Research Supervisor(s)

Signature of
External Examiner

Signature of
Director