

# **GENERAL RULES AND GUIDELINES FOR Ph. D. PROGRAMME AT UM-DAE CEBS**



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# UM-DAE-Center for Excellence in Basic Sciences

## SOP – Graduate Program, January 2019

### Preamble

Guidelines for conducting the Graduate Program in UM-DAE CEBS have been prepared as per the Regulations notified by the University Grants Commission (UGC), Ministry of Human Resource Development, New Delhi, in the Gazette of India, dated May 5, 2016 on Minimum Standards and Procedures for Awards of Ph. D. Degree in every University or Institution created under Section 3 of UGC act. The draft document prepared by the Graduate Program Committee on regulations relating to the Ph. D. program of UM-DAE CEBS has been approved by the Academic Board of UM-DAE CEBS and in compliance with the regulations of UGC, HRDD, Govt. of India, and RRC, Mumbai University. Recently, Vice Chancellor, Mumbai University issued a fresh directive on the minimum standards and procedures for the award of M. Phil and Ph. D. Degrees of Mumbai University (Guideline from the University of Mumbai are appended below).

In the following sections, the guidelines formulated on conduction of the Graduate Program of UM-DAE CEBS, are described and also compared with the directives of Mumbai University in corresponding section, wherever, importance has been realized.

**(A Flow chart of the Ph. D. Program of UM-DAE CEBS and various forms are given in Annexure I)**

1. **Title of the Degree:** The degree shall be titled as “Doctor of Philosophy (Ph. D.) in Life Sciences, Chemistry, Mathematics and Physics.
2. **Eligibility:**
  - a) Candidates for admission to the Ph. D. degree programme shall have a Master's degree or a professional degree declared equivalent to the Master's degree by the corresponding statutory regulatory body, with at least 55% marks in aggregate or its equivalent grade 'B' in the UGC 6-point scale (or an equivalent grade in a point scale wherever grading system is followed) or an equivalent degree 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 for the purpose of assessing, accrediting or assuring quality and standards of educational institutions.
  - b) A relaxation of 5% of marks, from 55% to 50%, or an equivalent relaxation of grade, may be allowed for those belonging to SC / ST / OBC (non-creamy layer)/Differently-Abled and other categories of candidates as per the decision of the Commission from time to time, or for those who had obtained their Master's degree prior to 19th September, 1991. The eligibility marks of 55% (or an equivalent grade in a point scale wherever grading system is followed) and the relaxation of 5% to the categories mentioned above are permissible based only on the qualifying marks without including the grace mark procedures.
  - c) Qualification in PET (Conducted by Mumbai University), UGC-NET (including JRF) / UGC-CSIR NET (including JRF)/ ICMR (JRF)/ SLET / GATE / NBHM / Teachers' Fellowship examinations, DBT-JRF BET or having an M. Phil degree from an UGC recognized university or institution in the subject concerned is an essential eligibility criterion.

### **3. Procedure for Admission:**

- a) The Institute should decide a predetermined and manageable number of Ph.D. students to be admitted on an annual basis through the approval of the Director / Academic Board depending on the number of available Research Supervisors, availability of funds, Academic and Physical facilities available, keeping in mind the norms regarding the scholar- teacher ratio (as indicated below), laboratory, library and such other facilities.
- b) Notification should be made well in advance in the institutional website and through advertisement in at least two (2) national newspapers (say TOI or HT), of which at least one (1) shall be in the regional language (for example, Lokmat), the number of seats for admission, subject/discipline-wise distribution of available seats, criteria for admission, procedure for admission, examination centre(s) where entrance test(s) shall be conducted and all other relevant information for the benefit of the candidates. For wide publicity of the positions for Ph. D. students in UM-DAE CEBS, notification may be made in popular Indian Journals (say, Resonance, Current Science, Pramana, J. Chemical sciences, J of Biosciences, etc.).
- c) Eligible candidates will be called for an interview and/or Entrance Test to be conducted by UM-DAE CEBS for preliminary screening which will be followed by an interview for final selection. The interview/ *viva-voce* examination will be conducted by a duly constituted committee consisting of the faculty members of the respective department to discuss their research interest / area in order to allocate the students to various research positions available during the year of selection.
- d) Adherence to the national level reservation policy is essential for selection of the number of students in each category.

### **4. Allocation of Research Supervisors:**

- a) Only a full-time regular teacher of the Institution can act as a Supervisor. Any regular Professor of the Institution with at least ten research publications in refereed journals and any regular Associate Professor and Assistant professor of the institution with a Ph.D. degree and at least five and two research publications, respectively, in refereed journals may be recognized as Research Supervisor.
- b) A Research Supervisor/ Co-supervisor who is a Professor, at any given point of time, cannot guide more than eight (8) Ph.D. scholars. An Associate Professor or Reader as Research Supervisor can guide up to a maximum of six (6) Ph.D. scholars and an Assistant Professor as Research Supervisor can guide up to a maximum of four (4) Ph.D. scholars.
- c) Adjunct faculty members of CEBS may only act as Co-supervisor, subject to the approval of the Academic Board of CEBS and recognition of Mumbai University.
- d) Any change / addition of Supervisor may be allowed with the approval of the RRC, UM-DAE CEBS and the Academic Board, UM-DAE CEBS.

### **5. Duration of the Ph. D. Programme**

- a) Ph. D. programme shall be for a minimum duration of four years from the date of admission in CEBS, including course work and a maximum of five years, during which the candidate will remain eligible for the stipend / Fellowship. Extension of one year may be considered only for submission of Ph. D. Thesis, subject to the

recommendation of the Research Advisory Committee and approval of the Academic Board but without any extension of fellowship beyond five years for the student.

- b) Registration for Ph. D. with Mumbai University will be allowed only after successful completion of the Ph. D. course work, and would be a minimum of one year, but not exceeding 22 months.
- c) The women candidates and Persons with Disability (more than 40% disability) may be allowed a relaxation of two years for Ph.D. without any extension of fellowship beyond five years. In addition, the women candidates may be provided Maternity Leave/ Child Care Leave once in the entire duration of Ph.D. for up to 240 days.

## **6. Monitoring the Ph. D. Programme**

- a) The *Academic Board of CEBS* will monitor the entire Ph. D. program. The Academic board will constitute a *Research Advisory Committee (RAC)* for each of the four subject areas of research in CEBS and empower the RAC to supervise the Ph. D. Course work as well as the yearly progress of the research work of an individual student with the Supervisor of the student as the coordinator / convener of the process of supervision for the student.
- b) *Research Advisory Committee (RAC)*: This Committee shall have the following responsibilities:
  - (i) To guide the research scholar to develop the study design and methodology of research and identify the course(s) that he/ she may have to do.
  - (ii) To periodically review the progress and assist in the progress of the research work of the student. A student shall appear before the Research Advisory Committee once in a year to make a presentation of the progress of his/ her work for evaluation and further guidance. The annual progress reports shall be submitted by the Research Advisory Committee to the Academic Board with a copy to the student. In case the progress of the student is unsatisfactory, the Research Advisory Committee shall record the reasons for the same and suggest corrective measures. If the student fails to implement those corrective measures in the following year, the Research Advisory Committee may recommend to the Academic Board with specific reasons for cancellation of the registration of the research scholar.

## **7. Ph. D. Course work**

- a) The course work shall be treated as prerequisite for registration of Ph. D. degree. The credit assigned to the Ph.D. course work shall be a minimum of 16 credits to be achieved in two semesters (in the first year) with 8 credits in each semester. All courses prescribed for Ph.D. course work shall be in conformity with the credit hour instructional requirement and shall specify content, instructional and assessment methods. The School where the student pursues his/ her research shall prescribe the course(s) to him/ her based on the recommendations of the Research Advisory Committee of the student. They shall be duly approved by the Academic Body.



- b) A minimum of four credits shall be assigned to one course on Research *Methodology*, which could cover areas such as quantitative methods, computer applications, research ethics and review of published research in the relevant field, training on laboratory safety, field work, etc.
- c) Preferably, two advanced courses related to the proposed topic of research need to be prescribed by the Research Advisory Committee. Methodologies such as self- study courses/ credit seminars may also be used *in lieu* of conventional course work wherever considered appropriate by the Research Advisory Committee, which shall prescribe the syllabus for any self -study course that a student has been asked to take up.
- d) Grades obtained in the course work, including research methodology course, shall be finalized after a combined assessment by the Research Advisory Committee and the final grades shall be communicated to the Academic Board. A student has to obtain an overall minimum Grade B (6 points in the scale of 10) in the course work in order to be eligible to continue in the programme and submit the dissertation/thesis.
- e) Upon satisfactory completion of the course work and obtaining the required grade as prescribed for the Ph. D. course work, RAC will conduct a viva-voce examination on the proposed research topic of the student. During this viva-voce examination, student may present his / her plan of research work to be conducted for his Ph. D. degree and also the plan of research during the next one year. RAC will forward its recommendation for registration of the student for Ph. D. degree to the Academic Board after he qualifies in the viva – voce examination. The Academic Board gives the final approval for registration of the student for Ph. D. degree.

## **8. Evaluation and assessment methods, minimum standards/credits for award of the degree**

- a) Following registration of the Ph.D. degree, the student shall be required to undertake research work and will make a presentation of the progress of his research work during the past one year and also the research plan of the next year to the RAC. RAC will submit the report to the Academic Board.
- b) Prior to submission of the Synopsis of the Ph. D. Thesis, the student shall make a presentation before the Research Advisory Committee (Pre-Synopsis presentation). The presentation may be open to all faculty members and other research scholars to obtain feedback and comments. Report of the pre-synopsis presentation should be submitted by RAC to the Academic Board to obtain approval for submission of the Synopsis of the Thesis.
- c) UM-DAE CEBS expects a doctoral thesis to be original and an independent contribution to knowledge in a chosen field of study and be of such lasting value as to merit publication in a peer-reviewed journal. It should demonstrate an ability to select an important problem and deal with it completely including an ability to effectively communicate what has been achieved through the research activity. It should be short preferably about 200 pages, and in any case not longer than 300 pages.
- d) Student must publish at least one (1) research paper in refereed journal (paper accepted by a journal may also be considered as a publication) and make two presentations in conferences/seminars before the submission of the dissertation/thesis for adjudication, and produce evidence for the same in the form of presentation certificates and/or reprints.

- e) Copies of the thesis should be prepared in the paper-back format so as to enable to introduce necessary corrections suggested by the Reviewers before the bound form is prepared for final submission. Or regulations of Mumbai University should be strictly followed for preparation of the Thesis for submission to the University for Evaluation.
- f) Student will be able to submit the Thesis to the university only with the concurrence of the guide, RAC and the Academic Board.
- g) Research Advisory Committee will propose a list of at least six Reviewers (four Indian and two foreigners), who are expert in the field of the research work reported in the Thesis to be submitted. The Academic Board will select two Reviewers from the list for evaluation of the Thesis.
- h) The Academic Board of the Institution shall evolve a mechanism using well developed software and gadgets to detect plagiarism and other forms of academic dishonesty. While submitting for evaluation, the dissertation/thesis shall have an undertaking from the student and a certificate from the Research Supervisor attesting to the originality of the work, vouching that there is no plagiarism and that the work has not been submitted for the award of any other degree/diploma of this same Institution or to any other Institution.
- i) After obtaining favourable comments from the Reviewers, the Academic Board will select one of the two Reviewers as the external Examiner for the final *viva voce* examination. The Thesis should be defended by the student in an open seminar in the presence of the external examiner, members of the Research Advisory Committee, Faculty members as well as other students of the institute. Necessary corrections as suggested by the Reviewers should be introduced to revise the Thesis and the Thesis will be prepared in the bound form for final submission to the University for Award of the degree.
- j) The Institutions shall develop appropriate methods so as to complete the entire process of evaluation of Ph.D. thesis within a period of six months from the date of submission of the thesis.

## **9. Scholarships, Fees, Leaves, Code of Conduct etc. for the Ph. D. Students**

- a) All students enrolled for the Ph. D. Programme should be entitled for a Junior Research Fellowship (JRF) either from DAE or any other agencies, such as UGC or CSIR or any other National-level schemes meant for PhD scholars (the monthly emolument is decided by the policy of the agency funding the fellowship). After completion of two years, the student may be recommended by the Research Advisory Committee for the enhanced fellowship (Senior Research Fellowship) based on the evaluation of his performance. The fellowship may be discontinued at any time, if the Research Advisory Committee judges that the academic performance has been poor or that the research progress has been unsatisfactory.
- b) Students shall be required to pay the Enrolment Fee, Registration Fee, Annual Fees as well as Synopsis and / or Thesis submission Fees as per the regulations of UM-DAE CEBS and University of Mumbai.
- c) Eight days of casual leave and thirty days of paid leave shall be permitted annually but cannot be carried over if not availed. Maternity/Paternity Leave shall be admissible as per prescribed by the Government of India. Participation in any scientific event in India or abroad will be treated as on duty.

- d) Absence without sanctioned leave will entail loss of fellowship for the period of absence, and may result in the termination of the student's enrolment in the programme. Decision about such termination will be taken by the Academic Board on the basis of a report by the supervisor and recommendation of Research Advisory Committee.
- e) Each student should conduct himself/herself in a manner befitting his/ her association with UM-DAE CEBS as a graduate student. Any violation of code of conduct will be investigated and can lead to severe indictment including rustication.
- f) Primary activity of a student is to plan and actively pursue research. A student should plan and execute a research project within the expected time period by devoting sufficient time to the prescribed courses of study, by being committed to the research and avoiding activities which will interfere with satisfactory completion within the time limit. All students must attend regular meetings, as agreed with the Supervisor, and do their best endeavor to achieve agreed milestones.
- g) Student with the help of the Supervisor should identify indicators of progress, the timing of the submission of appropriate written work including progress reports or research results.
- h) Student should become familiar with all relevant ethical guidelines for the conduct of research and ensure that the necessary approvals are obtained for research involving recombinant DNA, transgenic animals and plants, animal subjects, human subjects or animal tissues. Above all, a student should participate in the intellectual life in the institute such as attending seminars and colloquia. Students handling any live organisms and/or animal tissues should obtain an Institutional Biosafety Committee (IBSC) approval before starting their research programme.
- i) Student must not resort to any kind of plagiarism and strictly adhere to copyright law.

(Dr. D. K. Palit)  
Convener,  
Graduate Programme

**Ph. D. Program Time Line**  
**UM-DAE Centre for Excellence in Basic Sciences**  
 University of Mumbai, Kalina Campus  
 Santacruz (E), Mumbai-400098

S. No.	Dates	Activity
<b>1<sup>st</sup> Year: Ph.D. Program of CEBS</b>		
1.	1 <sup>st</sup> August	Admission to Ph.D. program of CEBS and the start of the course work.
2.	30 <sup>th</sup> November	Completion of 1 <sup>st</sup> Semester course work and examination
3.	1 <sup>st</sup> December	Initiation of project work related to Ph.D. thesis in consultation with the Ph.D. guide
4.	1 <sup>st</sup> January	the start of the 2nd Semester course work.
5.	30 <sup>th</sup> April	Completion of 2 <sup>nd</sup> Semester course work and examination
6.	1 <sup>st</sup> May	Continuation of project work, preparation for Ph.D. registration (only those who have passed the course work) and presentation of proposed Ph.D. work before the doctoral committee
7.	1 <sup>st</sup> June	Course on Research Methodology
8.	End of July	Presentation by the student on research methodology
<b>2<sup>nd</sup> Year: Ph.D. Program of CEBS</b>		
9.	1 <sup>st</sup> August	Start of Ph.D. research project
10.	July	Annual Progress report by the Doctoral Committee
<b>3<sup>rd</sup> Year and beyond: Ph.D. Program of CEBS</b>		
11.	1 <sup>st</sup> August (3 <sup>rd</sup> / 4 <sup>th</sup> and 5 <sup>th</sup> year; NOT beyond 5 <sup>th</sup> year from the date of admission for Ph.D. in CEBS)	Ph.D. Research work continues, annual appraisal by Doctoral Committee, Recommendation of Doctoral Committee for submission of synopsis followed by pre-synopsis presentation

## Flow Chart of the Ph. D. Program of UM-DAE CEBS

- Students may join CEBS for Ph. D. work with the Fellowships received from the Institute (DAE) / Institutional Projects / INSPIRE/ CSIR/ other schemes.  
(Please submit completed Admission form with requisite fee: **Form-A**)
- Guide should submit a proposal to Dean, Academic Affairs regarding (i) the course work, keeping in mind the research work, which will be performed by the student, (ii) the constitution of a doctoral committee for evaluation of the student's course work and the research work, in order to obtain approval from RRC, CEBS. (Please submit completed **Form-B**)
- Student must complete the course work of 16 Credits within one year (minimum) and twenty-two months (maximum) after joining.  
**Passing Criteria**, minimum passing mark in every course is 50%. Students who have not passed a particular course will be required to repeat the same in the next available opportunity. *Students failing in more than 1 course during the course work period will have to leave the graduate programme. If a student fails to pass a course even in the second attempt, he/she will have to leave the graduate programme.*

Numerical score out of 100	Grade points	Letter grades	Meaning
95-100	10	O	Outstanding
85-94	9	A <sup>+</sup>	Excellent
75-84	8	A	Very good
65-74	7	B <sup>+</sup>	Good
55-64	6	B	Above average
50-54	5	C	Average
0-49	0	F	Fail

- After successful completion of the course work and satisfactory assessment by the doctoral committee, the student may register for the Ph. D. degree by submission of a research proposal, with an appropriate title to RRC, CEBS / Mumbai University.  
(Please submit completed **Form-C**)
- Doctoral Committee should review the progress of the course work as well as the research work annually and the review report should be submitted to RRC, CEBS through Dean, Academic affairs for obtaining approval for promotion or extension of the tenure of the fellowship of the student.  
(Please submit completed **Form-D**)
- Based on the recommendation of the Doctoral Committee, Synopsis should be prepared and pre-synopsis presentation be made before the doctoral Committee. Synopsis should be prepared in the specified format and should be submitted to RRC, CEBS / Mumbai University through Dean, Academic affairs following its review by the Doctoral Committee and approval by the RRC, CEBS. Synopsis may be submitted after a minimum of two years of Registration for Ph. D. degree.  
  
(Please submit completed **Form-E** (copyright self-certification form)  
(Please submit completed **Form-F** (Synopsis submission form))
- Thesis, which should be prepared following the prescribed format / rules laid down by Mumbai University, may be submitted to RRC, CEBS / Mumbai University only after two months (minimum period) and within six months of submission of the Synopsis. Submission of thesis will need approval of the Doctoral Committee and RRC, CEBS.

## Procedure for submission of Ph.D. Synopsis, Thesis & related documents\*

- A. Submit following documents to Dean, Academic Affairs, UM-DAE CEBS:
1. Soft copy of Synopsis as per the template.
  2. List of journal papers published/ accepted/ submitted & first page of each journal paper.
  3. *A note from the guide highlighting the student's contributions in the papers where more than two authors (student, guide & others) are there. No objection letters from all co-authors for permitting to include the published work in the Ph.D. thesis being submitted by..... to Mumbai University.*
  4. List of Conferences/Symposiums participated (Minimum two).
  5. List of 6-8 Examiners as per the format (preferably two from abroad).  
*All papers (Journal and Conference) should show affiliation of 'UM-DAE CEBS'.*
  6. Documents showing payment of online Thesis Evaluation Fees.
  7. Any pending documents like mark sheet of suggested course works, OGCE, Annual review reports, etc.
- B. Academic Office will communicate to RRC of CEBS after receiving hard copies of all documents as mentioned in 1. Student has to submit thesis within 6 months of Pre-synopsis seminar along with similarity /plagiarism check report of the thesis and Completed UGC 11-point criteria form.
- C. RRC of CEBS will finalize the names of referees (6 in Number).
- D. Dean-Academic will contact Examiners as per the orders in the list to take their consent for reviewing thesis. If one of them do not agree or response is delayed by two weeks, the next reviewer from the list should be contacted and so on.
- E. After receiving review reports, Dean-Academic should carefully examine all the reports. If the reports are in order, Dean will ask the guide to arrange for Ph.D. viva voce examination with the first Indian examiner as the external examiner. If first Indian examiner is not available, second Indian examiner should be contacted.
- F. After completion of viva voce examination Dean-Academic should initiate process of awarding Ph.D. degree.

*\*Submission of thesis should be done within valid period of enrolment.*



*Form-A*

**Admission form to CEBS graduate program**  
**UM-DAE Centre for Excellence in Basic Sciences**

University of Mumbai, Kalina Campus  
Santacruz (E), Mumbai-400098

**Name of the candidate:**

**Date of Birth:**

(Attach self-attested copy for proof of Date-of-Birth)

**Contact No:**

**Email:**

**Address:**

**Date of joining CEBS graduate programme:**

**Nature of Research Fellowship:**

**Subject: Biology/ Chemistry/ Mathematics/ Physics**

**Qualification at the time of Joining CEBS Graduate programme:**

(Attach self-attested copies of mark sheets and degree certificates)

(i) B.Sc.

(ii) M.Sc. / Integrated M.Sc.

**Name of Proposed Ph. D. Guide:**

**Proposed title of Ph. D. Thesis**

**Admission Fee payment details:**

I hereby state that I have not registered for the above degree with any other University.

Date

Signature of the student

**Name & Signature of Guide with date**

**Signature of School Chair with date**

To,  
Dean  
Academic Affairs,  
UM-DAE-CEBS, Kalina Campus, Mumbai



**Form-B**

**Constitution of Doctoral Committee**  
**UM-DAE Centre for Excellence in Basic Sciences**  
 University of Mumbai, Kalina Campus  
 Santacruz (E), Mumbai-400098

**Name of the candidate:**

**School of Biological / Chemical/ Mathematical/ Physical Sciences**

**Name of Ph.D. Guide:**

**Proposed title of Ph. D. Thesis:**

**Suggested composition of the Doctoral Committee**

S. N.	Composition	Designation	Name & Email Address
1	Professor / Associate Professor	<b>Chairman</b>	
2	Ph. D. Guide (CEBS Faculty)	<b>Convener</b>	
3		<b>Member</b>	
4		<b>Member</b>	
5.		<b>Member</b>	
6	One faculty member preferably from any other university/ institute	<b>Member</b>	

**Suggested Course Work**

1. ....

2. ....



I have been intimated about the composition of my doctoral committee and suggested course work.

**Date:**

**Signature of the student**

**Certification by the Guide**

Certified that the total number of Ph. D. students registered currently under me is ----- which are less than the permitted number of students by Mumbai University. I have read UM-DAE-CEBS documents on “Guidelines for roles and responsibilities of a Ph. D. guide. I have taken concurrence of **Chair, School of Biological / Chemical/ Mathematical/ Physical Sciences** to guide ----- (student’s Name) and provide him/ her research facilities as needed.

**Date:**

**Name & Signature of Ph.D. Guide**

I have verified the particulars of the applicant as mentioned in the application form and found to be complete with all enclosures.

**Date:**

**Signature of Dean Academic Affairs**

To,  
Convener  
Research & Recognition Committee (RRC)  
UM-DAE-CEBS, Kalina Campus, Mumbai



Form-C

**Ph. D. Registration form**  
**UM-DAE Centre for Excellence in Basic Sciences**

University of Mumbai, Kalina Campus  
Santacruz (E), Mumbai-400098

**Name of the candidate:**

**Date of Birth:**

(Attach self-attested copy for proof of Date-of-Birth)

**Contact No:**

**Email:**

**Address:**

**Date of joining CEBS graduate programme:**

**Nature of Research Fellowship:**

**Subject: Biology/ Chemistry/ Mathematics/ Physics**

**Date of completion of qualifying requirements for registration:**

**Name of Research Supervisor:**

**Ph. D. Thesis Title:**

**Brief write-up of proposed research project** (*Please attach a separate sheet*)

(about than 500 words)

**Registration Fee payment details:**

I hereby state that I have not registered for the above degree with any other University.

Date

Signature of the student

### **Certificate by the Guide**

Certified that the total number of Ph. D. students registered currently under me is ----- which are less than the permitted number of students by Mumbai University. I have read UM-DAE-CEBS documents on “Guidelines for roles and responsibilities of a Ph. D. guide. The candidate has successfully completed the prescribed course work and secured ---- marks.

**Date:**

**Name & Signature of Ph.D. Guide**

The candidate has completed and passed the prescribed course work as required for Ph.D. thesis work.

**Date:**

**Signature of Dean Academic Affairs**

To,  
Convener  
Research & Recognition Committee (RRC)  
UM-DAE-CEBS, Kalina Campus, Mumbai



## Annual progress Report

### UM-DAE Centre for Excellence in Basic Sciences

University of Mumbai, Kalina Campus  
Santacruz (E), Mumbai-400098

### Assessment of Annual progress Report by the Doctoral Committee

**Name of the candidate:**

**School of Biological / Chemical/ Mathematical/ Physical Sciences**

**Name of Ph.D. Guide:**

**Ph. D. Thesis Title:**

**Annual Progress Report No: I/ II/ III/ IV/ V**

**Date of evaluation**

**Evaluation Report by the Doctoral Committee** ([Please attach separate sheet](#))

Doctoral Committee				
S. N.	Composition	Designation	Name & E-mail Address	Signature
1	Professor / Associate Professor	<b>Chairman</b>		
2	Ph.D. Guide (CEBS Faculty)	<b>Convener</b>		
3		<b>Member</b>		
4		<b>Member</b>		
5.		<b>Member</b>		
6	One faculty member preferably from any other university/ institute	<b>Member-3</b>		

To,  
Dean  
Academic Affairs,  
UM-DAE-CEBS, Kalina Campus, Mumbai



Form-E

**Copyright Self-Certification Form**  
**UM-DAE Centre for Excellence in Basic Sciences**  
University of Mumbai, Kalina Campus  
Santacruz (E), Mumbai-400098

- [A] I have included my own published papers, text, or figures in my thesis.
- a) As an author, I hold the copyright.
- a) I have obtained permission to use this material in my thesis wherever needed and have given the publication details.
- b) *A note from the guide highlighting the student's contributions in the papers where more than two authors (student, guide & others) are there. No objection letters from all co-authors for permitting to include the published work in the Ph.D. thesis.*
- [B] I have included text or figures from published work of other people in my thesis. Appropriate citation of the published work in the thesis is included.
- [C] I have included text or figures from unpublished work of other people in my thesis. I have obtained permission to use this material wherever needed and it has been appropriately cited in my thesis.

Date & Place:

Signature of the candidate

I certify that the candidate has taken the copyright permissions for the figures or text in this thesis wherever needed. Where material has been taken from the work of others (B and/or C above) I certify that I consider it to be a reasonable and necessary component of this thesis.

Date & Place:

Signature of the Ph. D. Guide

To,  
Convener  
Research & Recognition Committee (RRC)  
UM-DAE-CEBS, Kalina Campus, Mumbai



*Form-F*

## **Synopsis Submission Form**

### **UM-DAE Centre for Excellence in Basic Sciences**

University of Mumbai, Kalina Campus

Santacruz (E), Mumbai-400098

-----  
**Name of the candidate:**

**Title of Ph.D. Thesis:**

**School of Biological/ Chemical/ Mathematical/ Physical Sciences**

**Name of Ph.D. Guide:**

**Date of Synopsis Seminar:**

**Tentative date of Thesis Submission:**

I have submitted one hard copy and one electronic copy of the synopsis of my thesis, embodying the results of my doctoral thesis work. I certify that for the thesis which I intend to submit, no degree or diploma has been conferred on me before either in this or in any other University or body, further I have not submitted the synopsis of my thesis or my thesis to any other University or body.

**Date**

**Signature of the Student**

### **Certificate Ph. D. Guide**

This is certify that the thesis to be presented by \_\_\_\_\_ represents his/ her original work which was carried out by him/ her at UM-DAE CEBS under my guidance and supervision during the period from \_\_\_\_\_ to \_\_\_\_\_. I further certify that the foregoing statements made by him/ her in regard to his/ her thesis are correct to the best of my knowledge.

The following examiners may be considered for evaluation of this Ph.D. Thesis (give at least six examiners with their address and contact details on a separate sheet)

**Date**

**Signature of the Ph.D. Guide**

**Recommended names of external examiners by the Dean Academic Affairs**

To,  
Convener  
Research & Recognition Committee (RRC)  
UM-DAE-CEBS, Kalina Campus, Mumbai



## Check list of 11 Criteria of UGC UM-DAE Centre for Excellence in Basic Sciences

University of Mumbai, Kalina Campus  
Santacruz (E), Mumbai-400098

**Name of the candidate:**

**Title of Ph.D. Thesis:**

**School of Biological/ Chemical/ Mathematical/ Physical Sciences**

**Name of Ph.D. Guide:**

**Check list for 11 criteria as per UGC (minimum standard and procedure for award of Ph.D. degree) regulation 2009**

S. No.	Particular	Remark (Tick the appropriate one)
1.	Mode of selection for Ph.D. Programme	Written Test / Interview / Both
2.	Number of Ph.D. students under the guide during the period	Yes / No
3.	Reservation Policy applied for selection	Yes / No
4.	Course work done	Yes / No
5.	Reviews of Annual Progress held	Yes / No
6.	Test on Research Methodology held	Yes / No
7.	Pre-synopsis presentation held	Yes / No
8.	At least one journal paper published	Yes / No
9.	At least of 2 papers in conference / seminar presented	Yes / No
10.	Evaluation reports of Ph.D. Thesis from guide and two experts (one expert is out of state) received	Yes / No
11.	Soft copy of Thesis submitted to CEBS	Yes / No

To,  
Dean  
Academic Affairs,  
UM-DAE-CEBS, Kalina Campus, Mumbai

## **Course Structure of Graduate Studies (Ph.D. Program)**

**Minimum credit requirement for: 16 credits (Each Course carries 4 credits)**

- Research Methodology (compulsory): 4 credits
- Two courses can be selected from various courses offered by each discipline and one course (4 credits) pertains to student's Ph.D. work.

### ***School of Physical Sciences***

<b>January-April</b> 1. Classical Mechanics (GP201) 2. Mathematical Physics (GP202) 3. Tropical courses (To be chosen from the field of Ph. D. work) i. Condensed Matter Physics (GP203) ii. Nuclear Physics (GP204) iii) Astronomy and Astrophysics (GP205) iv) Computational Physics (GP206) 4. Research Methodology (GP207) (Compulsory)	<b>August-November</b> 1. Quantum Mechanics (GP101) 2. Statistical Mechanics (GP102) 3. Electrodynamics (GP103) 4. Tropical courses (To be chosen from your field of Phd) i. Quantum Optics (GP104) ii. Plasma Physics (GP105) iii. General Relativity and Cosmology (GP106) iv. Many Body Theory (GP107)
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### ***School of Mathematical Sciences***

1. Research Methodology (Compulsory) 2. Topics in Advanced Algebra 3. Algebraic Topology 4. Introduction to Characteristic Classes 5. Manifolds and Lie Groups 6. Introduction to Homological Algebra 7. Homotopy Theory	In a given semester if the batch consists of a single student then the courses may be run as reading courses
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## *School of Chemical Sciences*

<b>January - April</b> <ol style="list-style-type: none"> <li>1. Spectroscopy-I (GC201)</li> <li>2. Physical Chemistry-I (GC202)</li> <li>3. Advanced Topics in Chemistry (GC209)</li> <li>4. Tropical courses (To be chosen from your field of Ph. D.)               <ol style="list-style-type: none"> <li>i. Chemistry of Materials (GC203)</li> <li>ii. Quantum Chemistry-I (GC204)</li> <li>iii. Nano materials and soft condensed matter (GC205)</li> <li>iv. Organic Chemistry-II (GC206)</li> <li>v. Biophysical chemistry (GC207)</li> </ol> </li> <li>5. Research Methodology (GC208) (Compulsory)</li> </ol>	<b>August-November</b> <ol style="list-style-type: none"> <li>1. Analytical Chemistry (GC101)</li> <li>2. Spectroscopy-II (GC102)</li> <li>3. Tropical courses (To be chosen from your field of Ph.D.)               <ol style="list-style-type: none"> <li>i. Organometallic and bio-inorganic Chemistry (GC103)</li> <li>ii. Photochemistry (GC104)</li> <li>iii. Physical organic chemistry (GC105)</li> <li>iv. Biochemistry (GC106)</li> </ol> </li> </ol>
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## *School of Biological Sciences*

<b>January - April</b> <ol style="list-style-type: none"> <li>1. Biostatistics (B402)</li> <li>2. Molecular Biology (B401)</li> <li>3. Biophysical Chemistry (CB601)</li> <li>4. Neurobiology (B802)</li> <li>5. Advanced techniques in Biological Sciences (BE1001) (Mandatory)</li> <li>6. Topical courses (To be chosen from your field of Ph. D. – chose one from the following)               <ol style="list-style-type: none"> <li>i. Cancer Biology (BE1005)</li> <li>ii. Advanced Genetics and Epigenetics (BE1002)</li> <li>iii. Advanced Neurobiology (BE1003)</li> </ol> </li> </ol>	<b>August - November</b> <ol style="list-style-type: none"> <li>1. Imaging technology in biological research (B704) (Mandatory)</li> <li>2. Research Methodology (General course) (Mandatory)</li> <li>3. Genetics (B501)</li> </ol>
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24/1/19 Ph.D. Programme 408

**University of Mumbai - Department of Atomic Energy  
Centre for Excellence in Basic Sciences**

**DETAILS OF THE FEE TO BE PAID BY Ph.D. STUDENTS ADMITTED in 2019  
AT THE TIME OF REGISTRATION IN THE SEMESTER JANUARY 2019**

**A. ONE TIME PAYMENT AT THE TIME OF ADMISSION**

SL. NO	FEE HEADS	FEE AMOUNT (₹.)
1	ADMISSION FEE	250.00
2	GRADE CARD	150.00
3	PROVISIONAL CERTIFICATE	200.00
4	MEDICAL EXAMINATION	200.00
5	STUDENTS WELFARE FUND	250.00
6	ALUMNI ASSOCIATION SUBSCRIPTION	200.00
7	PUBLICATION	250.00
8	THESIS PROCESSING FEES	1000.00
9	ID CARD FEES	100.00
	<b>TOTAL:</b>	<b>2600.00</b>

**B. DEPOSITS PAYABLE AT TIME OF ADMISSION (REFUNDABLE)**

1	INSTITUTE CAUTION MONEY	4,000.00
2	LIBRARY CAUTION MONEY	2,000.00
	<b>TOTAL:</b>	<b>6,000.00</b>

**C. ANNUAL FEE FOR THE STUDENTS OF GENERAL & OBC CATEGORY**

1	TUITION FEE	8,000.00
2	EXAMINATION	300.00
3	REGISTRATION	200.00
4	SPORTS FEE	600.00
5	INTERNAL ACTIVITY FEE	600.00
6	MEDICAL FEE	400.00
7	INTERNET, Wi-Fi FEE	1000.00
8	<b>TOTAL:</b>	<b>11100.00</b>

**C. ANNUAL FEE FOR THE STUDENTS OF SC & ST CATEGORY**

1	EXAMINATION	300.00
2	REGISTRATION	200.00
3	SPORTS FEES	600.00
4	INTERNAL ACTIVITY FEE	600.00
5	MEDICAL FEE	400.00
7	INTERNET, Wi-Fi FEE	1000.00
	<b>TOTAL:</b>	<b>3100.00</b>

**TOTAL FEE TO BE PAID BY THE STUDENT AT THE TIME OF ADMISSION (A+B+C)**

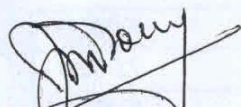
SL. NO	FEE HEADS	FEE AMOUNT IN RS.
1	STUDENTS OF GENERAL & OBC CATEGORY	19,700.00
2	STUDENTS OF SC & ST CATEGORY	11,700.00

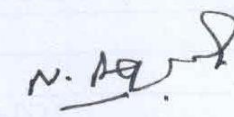
**LATE FEES FOR REGISTRATION**

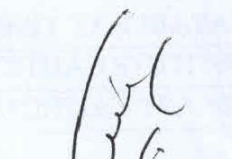
Late fees	1000.00 for first 07 working days after due date (first working day of the new Semester)
	2000.00 for next 3 working days


IN ADDITION TO THE ABOVE, ELIGIBILITY, CONVOCATION AND SUCH OTHER FEE LEVIED BY UNIVERSITY OF MUMBAI ARE APPLICABLE.

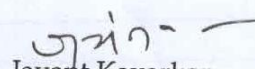
GROUP MEDICAL INSURANCE SCHEME IS MANDATORY AND PREMIUM IS TO BE PAID AS PER ACTUAL + GST AS APPLICABLE (YEARLY)

  
Jacinta D'Souza

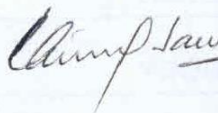
  
Neeraj Agarwal

  
Ameeya Bhagwat

  
Sangeeta Bose

  
Jayant Kayarkar

Director 

  
29/11/2018



## **UM-DAE Centre for Excellence in Basic Sciences**

### **Leave Rules for Ph. D. students**

#### **I. Vacation and Casual Leave**

- i). A post graduate student may be allowed vacation leave during any period of the Center's vacation up to a maximum of 15 days per semester, subject to a maximum of 30 days at a time. Leave not availed in one semester may be carried over to the next semester up to a maximum of 15 days.
- ii). In addition, a student may be allowed casual leave for up to 8 days per semester subject to the condition that such leave will not be allowed for longer than **5** days at a time. The casual leave cannot be combined with any other kind of leave, and will not be carried over.
- iii). There will be no loss of financial assistantship for students going on vacation or casual leave.

#### **II. Medical Leave**

Leave on medical ground, duly supported by a medical certificate, may be granted to a student for up to eight days per semester. Un-availed leave may be carried over to the next semester up to a maximum of 8 days. However, at a stretch, the medical leave shall not exceed 15 days. Such leave shall not entail any loss of financial assistantship.

#### **III. Maternity Leave**

A female student may be granted maternity leave for a maximum of 3 months. Leave up to 6 weeks can also be granted for miscarriage including medical termination of pregnancy, if supported by a proper medical certificate. Such leave can be combined with any other leave due and will not entail any loss of financial assistantship.

#### **IV. Semester Leave**

Semester leave for up to a maximum of two semesters for Ph.D. students may be sanctioned for bona fide reasons. Except for medical reasons, such leave would not normally be sanctioned before a student has completed his/ her residence requirements and in no case before the student has spent two semesters in the programme. However, on medical considerations such leave may be sanctioned after his/her stay of one semester. Leave for more than one semester at a time will not be granted.

#### **V. Academic work outside CEBS**

The PG students can be permitted to proceed for academic activities outside CEBS to carry out field work, library work, computational work, experimental work, and lab works, and also to attend conferences, courses and to undertake other research work, etc. as recommended by the School Chair. Permission for duration up to 30 days be sanctioned by Dean, Academic Affairs (AA) with an intimation to Director and more than 30 days by Director on the recommendation of Dean, AA.

#### **VI. Sanctioning authority**

Leave up to 30 days be sanctioned by Dean, AA on the recommendation of the School Chair and more than 30 days by Director, on the recommendation of the School Chair and Dean, AA.

#### **VII. Absence without Sanctioned Leave**

Absence without sanctioned leave will entail loss of financial assistantship for the period of absence, and may result in the termination of the student's programme on the recommendation of the School Chair, Dean, AA and approval of Director.

(K.P. Balakrishnan)  
Registrar



No. Exam./Thesis/Univ./VCD/947 of 2018

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**MINIMUM STANDARDS AND PROCEDURE FOR THE AWARD OF M.Phil. AND  
Ph.D. DEGREES**

*(With effect from date of promulgation of VCD)*

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WHEREAS the University Grants Commission has issued a Notification, University Grants Commission (Minimum Standards and Procedure for Award of M.Phil./Ph.D. Degrees) Regulations, 2016, on 5<sup>th</sup> May 2016, and the subsequent notification in the Gazette of India on July 5, 2016 (Asadha 14, 1938), in supersession of the earlier UGC (Minimum Standards and Procedure for Award of M.Phil. / Ph.D. Degrees) Regulations, 2009; applicable to all Universities in India from the date of their publications in the Gazette of India;

**AND**

WHEREAS as per the provisions of Sub-Section (1) of Section 73 of the Maharashtra Public Universities Act 2016, the conditions under which students shall be admitted to courses of study for degrees, diplomas, certificates, and other academic distinctions are required to be prescribed by the Ordinances and, therefore, it is expedient to prescribe minimum standards and procedure for award of M.Phil./Ph.D. degrees by Ordinances;

**AND**

WHEREAS currently various matters related to M.Phil./Ph.D. degrees are governed by the Rules and Regulations made by different Authorities and Officers of the University, from time to time;

**AND**

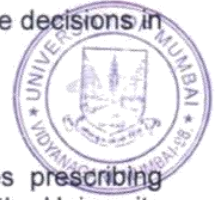
WHEREAS on the recommendations made by the then Faculty of Technology the Academic Council and the Management Council have made Ordinances and Regulations relating to Eligibility, Entrance Test, Admission, Course Work, Registration and Examinations for Ph.D. under the Faculty of Technology (Engineering, Pharmacy, Architecture and MCA), with reference to the UGC (Minimum Standards and Procedure for Award of M.Phil./Ph.D. Degrees) Regulations, 2009;

**AND**

WHEREAS the Academic Council at its meeting dated 27<sup>th</sup> February 2013, vide Item No. 7.7 considered and adopted a resolution to modify the existing rules for

*M.Phil./Ph.D. Regulations 2016\_VCD\_15 June 2018*

conducting the PET and authorizing the Vice-Chancellor to take appropriate decisions in this matter;



**AND**

WHEREAS it will take considerable time to make the Ordinances prescribing minimum standards and procedure for award of M.Phil./Ph.D. degrees of the University of Mumbai and applicable to the University Departments, affiliated colleges, recognized institutions and conducted colleges, as per the UGC (Minimum Standards and Procedure for Award of M.Phil./Ph.D. Degrees) Regulations, 2016; as per the provisions of Section 74 of the Maharashtra Public Universities Act, 2016;

NOW THEREFORE, I, Professor Suhas R. Pednekar, Vice-Chancellor of the University of Mumbai, by and under the power vested in me under Sub-section (8) of Section 12 of the Maharashtra Public Universities Act, 2016, hereby issue the following directives:

- 1. These Directives shall be applicable to the University Departments, affiliated colleges, conducted colleges, and recognized institutions of the Mumbai University.**
- 2. The provisions of this VCD shall be applicable to the candidates admitted after the date of the VCD**

*Provided that* the candidates admitted prior to the date of this VCD, but after 5<sup>th</sup> July 2016, shall be governed by the provisions of the UGC Regulations 5<sup>th</sup> July 2016;

*Provided further that* the candidates admitted after 11<sup>th</sup> July 2009, but prior to 5<sup>th</sup> July 2016, shall be governed by the UGC Regulations 11<sup>th</sup> July 2009;


*Provided further that* the candidates admitted prior to 11<sup>th</sup> July 2009 shall be governed by the provisions of the relevant Rules and Regulations prevailing at the time.

- 3. These Directives shall come into force immediately from the date of circulation and remain in force till the Ordinances in this regard come into force.**
- 4. In these Directives unless the context otherwise requires:**

- 1) "The Act" Means the Maharashtra Public Universities Act, 2016;
- 2) "Admission" means the admission taken at the University Department/Conducted College/Affiliated College/Recognized Institution by completing the formalities and paying the prescribed fee;
- 3) "Head of Centre" means the Head of the Affiliated College/Conducted College/Recognized Institution/University Department where the Ph.D. programme is conducted;
- 4) "MU" means the Mumbai University;
- 5) "PET" means the Pre-Entrance Test conducted for the admissions to the M.Phil./Ph.D. programmes of the University;

*M.Phil./Ph.D. Regulations 2016\_VCD\_15 June 2018*



- 
- 6) "*Recognized*" means recognized by the appropriate Statutory/Regulatory Authority;
- 7) "*Research Centre*" or "*Centre*" means the University Department/Recognized Research Institute/Affiliated College/Conducted College, including the respective autonomous units, which is recognized by the University to conduct the Ph.D. programme/s;
- 8) "*Research and Recognition Committee*" or "*RRC*" means Research and Recognition Committee of the Mumbai University;
- 9) "*Candidate*" means a person seeking admission to the M.Phil./Ph.D. programme; and also a person registered for a Ph.D. programme and working for the degree, as the case may be;
- 10) "*Research Guide*" or "*Guide*" means the person recognized by the University for guiding students for a Ph.D. programme of the University;
- 11) "*University*" means the University of Mumbai;
- 12) "*UGC*" means the University Grants Commission", New Delhi.

#### **5. Eligibility criteria for admission to the M. Phil. programme:**

Subject to the conditions stipulated in these Directives, the following persons are eligible to seek admission to the M.Phil. programme:

- 5.1. A candidate seeking admission to the M.Phil. programme shall have a Master's degree or a professional degree declared equivalent to the Master's degree by the corresponding statutory regulatory body, with at least 55% marks in aggregate or its equivalent grade 'B' in the UGC 7-point scale (or an equivalent grade in a point scale wherever grading system is followed) or an equivalent degree 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 for the purpose of assessing, accrediting or assuring quality and standards of educational institutions.
- 5.2. Relaxation of 5% of marks, from 55% to 50%, or an equivalent relaxation of grade, shall be allowed for those belonging to reserved categories/Differently-Abled and other categories of candidates as per policies of the Government of Maharashtra prescribed from time to time, or for those who had obtained their Master's degree prior to 19<sup>th</sup> September, 1991. The eligibility marks of 55% (or an equivalent grade in a point scale wherever grading system is followed) and the relaxation of 5% to the categories mentioned above are permissible based only on the qualifying marks without including the grace mark procedures.

## 6. Eligibility criteria for admission to the Ph.D. programme:



Subject to the conditions stipulated in these Directives, the following persons are eligible to seek admission to the Ph.D. programme:

A candidate holding a Master's Degree and satisfying the criteria stipulated under **Clause 5** above.

OR

A Candidate who has cleared the course work of M. Phil. with at least 55% marks in aggregate or its equivalent grade 'B' in the UGC 7-point scale (or an equivalent grade in a point scale wherever grading system is followed) and successfully completed the M.Phil. Degree shall be eligible to proceed to do research work leading to the Ph.D. Degree in the same institution in an integrated programme. A relaxation of 5% of marks, from 55% to 50%, or an equivalent relaxation of grade, shall be allowed for those belonging to reserved categories/Differently-Abled and other categories of candidates as per policies of the Government of Maharashtra prescribed from time to time.

OR

A person whose M.Phil. dissertation has been evaluated and the *viva voce* is pending may be admitted to the Ph.D. programme at the same centre.

OR

A candidate possessing a Degree considered equivalent to M.Phil. Degree of an Indian institution, or 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 for the purpose of assessing, accrediting or assuring quality and standards of educational institutions.

OR

A candidate possessing Ph.D. Degree of UoM or any other recognized university, as per the guidelines of the UGC from time to time, in a given subject and wants to pursue Ph.D. in the same or other subject.

## 7. Duration of the Programme:

- 1) Duration of M.Phil. programme shall be of a minimum duration of two consecutive semesters/one year and a maximum of four consecutive semesters/two years.
- 2) Duration of Ph.D. programme shall be a period from the date of admission to the programme to the date of submission of thesis for the degree.
- 3) Ph.D. programme shall be of a minimum duration of three years and a maximum



of six years from the date of admission, including course work;

*Provided that* the candidate has spent at least one year after registration

*Provided further that* the minimum period shall be two years from the date of admission for candidates who have pursued Ph.D. after Master's degree by research and registers for PhD in the same subject;



- 4) Extension up to a maximum period of two semesters/one year for M. Phil. and a maximum period of four semesters/two years for Ph.D. shall be given by the Research and Recognition Committee (RRC) concerned on the recommendation of the Guide and the respective Research Advisory Committee (RAC). The candidate concerned shall submit the application in prescribed format for extension through his/her Research Guide and Head of the Research Centre three months prior to the expiry of the registration period. Further extension to the PhD. tenure, for not more than two years, may be granted only by the Vice-Chancellor on case to case basis.

*Provided that* no candidate shall be permitted to extend the duration of PhD programme beyond TEN years from the date of admission, and after this period the registration of the candidate shall be deemed to have ceased.

- 5) Women candidates and persons with disability (more than 40% disability) may be allowed an additional relaxation of one year for M.Phil. and two years for Ph.D. in the maximum duration. In addition, women candidates may be provided Maternity Leave once in the entire duration of M. Phil. /Ph.D. for up to 240 days.

#### **8. Procedure for admission to M.Phil./Ph.D. Programmes:**

- 1) All admissions for M.Phil./Ph.D. programmes shall be through an **Entrance Test (PET)** conducted by the University and the **Interviews** conducted by the Research Centres.
- 2) The University shall notify on an annual basis a predetermined and manageable number of vacant seats of M.Phil./Ph.D., depending on the number of available research guides, prescribed quota at the centres, and academic and physical facilities available, keeping in mind the norms regarding the scholar-teacher ratio.
- 3) The University shall notify well in advance on its website and through advertisement in at least two national newspapers, of which at least one shall be a Marathi newspaper, the procedure of admission to the M.Phil./Ph.D. programmes. The details notified shall include the number of seats vacant, subject/discipline-wise distribution of vacant seats, criteria for admission, procedure for admission, examination centre(s) where entrance test(s) shall be conducted and all other relevant information for the benefit of the candidates.
- 4) The admissions shall be based on the criteria notified by the University, keeping in view the guidelines/norms in this regard issued by the UGC and other statutory bodies concerned, and taking into account the reservation policy of the Central/State Government prescribed from time to time.



#### 9. Pre-Entrance Test (PET):

- 1) The PET shall be conducted subject-wise for pre-declared subjects, jointly for M.Phil. and Ph.D. admissions. The details of the test such as syllabus, format, day and date, venue and time, etc., shall be declared by the University well in advance. The syllabus of the PET shall consist of 50% based on research methodology and 50% shall be subject specific.
- 2) The University may conduct the PET only for the subjects where there are vacancies to be filled.
- 3) The PET shall be conducted at the centre(s) to be notified in advance. Changes of centres, if any, shall also be notified well in advance.
- 4) The PET should be conducted by the University normally within three months of the date of beginning of the academic year.
- 5) The validity of the PET result for taking admission for M.Phil/Ph.D. programme shall be for three years from the declaration of the respective result.
- 6) The candidate seeking admission to a Ph.D. programme in a subject other than the subject in which he/she has obtained the Master's degree shall take the PET in the subject in which he/she has obtained Master's degree and clear an **Aptitude Test** in the subject in which he/she is seeking admission, specially designed and conducted by the Research Centre where he/she is seeking admission;

*Provided that both the subjects are from the same faculty.*

- 7) For the candidate seeking admission to a Ph.D. programme in a subject of a faculty other than the faculty in which he/she has obtained the Master's degree, the rules of change in faculty shall be applicable.
- 8) The PET should be conducted in online mode in controlled environment and the candidates will not be allowed to take the test from a location other than those specified by the University.

#### 10. Exemption from PET:

The following candidates shall be exempted from PET:

- a) Candidates qualified in UGC-NET/UGC-CSIR NET /SLET/GATE /INSPIRE and any other JRF holder of the apex bodies like CSIR/ UGC/ ICAR/ ICMR/ DBT/ DST/ ICSSR;
- b) Candidates who have passed M. Phil. Programme of UOM or any other recognized University/Institution, provided the M.Phil. is as per the UGC guidelines;
- c) Ph.D. degree holder of this University or any other recognized University who desires to pursue Ph.D. at this University

*M.Phil./Ph.D. Regulations 2016\_FCD\_15 June 2018*





**11. The structure of PET:**

- a) The PET shall be of Multiple Choice Questions (MCQ) and of 100 marks.
- b) The PET shall consist of 100 MCQs of one mark each.
- c) The test shall comprise of two Papers. Paper I shall be on Research Methodology, research aptitude, logical reasoning, comprehension, communication, and general knowledge. Paper II shall be subject-specific and the examination of this section shall be based on the respective Master's syllabus of MU.
- d) Each Paper will have 50 questions and the **qualifying marks** shall be 50% of the aggregate, taking Paper I and II together.
- e) Relaxation of 5% of marks, from 50% to 45%, shall be allowed for those belonging to reserved categories/Differently-Abled and other categories of candidates as per policies of the Government of Maharashtra prescribed from time to time.
- f) Online PET certificates shall be issued by the university.
- g) No request for Revaluation and Photo Copy shall be entertained.

**12. Interviews for admission to M.Phil./Ph.D. programme:**

- (1) Interviews of the candidates who have cleared PET shall be organized by the Research Centres.
- (2) The candidates who have cleared the PET shall apply, in prescribed format, to the Research Centres where they desire to pursue M.Phil./Ph.D.
- (3) The Centres shall compile all such applications and after due verification shall invite the candidates for interviews.
- (4) The Heads of the Research Centres shall constitute M.Phil./Ph.D. Interview Committees subject-wise. The constitution of the Interview Committees shall be as follows:

The committee shall comprise of- The Head/Principal/Director as the chairperson; one or two subject experts from outside, who are PhD holders in the discipline; one University/ College teacher, not below the rank of Associate Professor, from the reserved category of the faculty concerned, where applicable; and the recognized guide/s from the discipline concerned.

- (5) The interview shall be conducted at the respective Research Centres and the following aspects shall be considered during the interview:
  - i. whether the candidate has basic knowledge of the chosen area;
  - ii. whether the candidate possesses the competence for the proposed research;
  - iii. whether the research work can be suitably undertaken at the Institution/

College;

- iv. whether the proposed area of research can contribute to new/additional knowledge.



- (6) The Research Centres shall submit the reports of the committees to the University (Thesis Section) within a period of not more than 30 days from the date of completion of the interviews.
- (7) The University and the Research Centre shall publish the lists of candidates selected for admission.
- (8) The University shall maintain the list of all the M.Phil./Ph.D. registered students on its website on year-wise basis. The list shall include the name of the registered candidate, topic of his/her research, name of his/her supervisor/co-supervisor, date of enrolment/registration.

### 13. Allocation of Research Guides:

- (1) The recognitions granted by the University to the teachers/scientists to guide M.Phil./Ph.D. students prior to these Directives shall continue.
- (2) The allocation of Research Guide for a selected research student shall be decided by the Head of Research Centre, depending on the number of students per Research Guide, the available specializations among the Guides, research interests of the students as indicated by them at the interviews, and the facilities available; with due regard to the reservation policy.
- (3) In case of a topic which is of inter-disciplinary nature, where the Research Guide and the Head of Department feel that the expertise in the Centre has to be supplemented from outside, the Head of Centre may appoint Co-Guide from outside the Research Centre; *provided that* the terms and conditions as may be specified and are agreed upon by the consenting Centre.
- (4) At any given time, a Professor cannot guide more than three M.Phil. and eight Ph.D. students; an Associate Professor cannot guide more than two M.Phil. and six Ph.D. students; and an Assistant Professor cannot guide more than one M.Phil. and four Ph.D. scholars.
- (5) In case of relocation of an M.Phil./Ph.D. woman scholar due to marriage or otherwise, the research data shall be allowed to be transferred to the University to which the scholar intends to relocate, provided all the other conditions in these regulations are followed in letter and spirit and the research work does not pertain to the project secured by the University/ Research Guide from any funding agency. The student will however give due credit to the parent Research Guide and the Research Centre for the part of research already done.

### 14. Admission:

The selected student shall complete the formalities of admission at the Research Centre by paying the prescribed **fees**.



## 15. Research Advisory Committee (RAC) for Ph.D. students



- (1) There shall be a Research Advisory Committee (RAC) for each Ph.D. student which shall be constituted by the Head of Research Centre immediately after the admission of the candidate.
- (2) The RAC has the following composition -
  - (i) Head of Department or his/her nominee – Chairperson; *provided that* the Head is a Ph.D. holder; *provided further that* if the Head is not a Ph.D. holder the Head of the Centre shall appoint a Senior Professor as the Chairperson;
  - (ii) Research Guide – Convenor;
  - (iii) One or Two outside expert/s from the same field – Nominated by the Head of Research Centre; *provided that* the experts are Ph.D. holders in the same or related areas and senior in teaching/research.
- (3) The candidate shall submit a six-monthly progress report of his/her work to the RAC through his/her Guide and also make a presentation before the committee about his/her research work once in six months.
- (4) The Research Advisory Committee shall have the following responsibilities:
  - i. to review the research proposal and finalize the topic of research;
  - ii. to guide the research scholar to develop the study design and methodology of research and identify the course(s) that he/she may have to complete;
  - iii. to periodically review and assist in the progress of the research work of the research scholar.
- (5) A research scholar shall appear before the Research Advisory Committee once in six months to make a presentation of the progress of his/her work for evaluation and further guidance. The six-monthly progress reports shall be submitted by the RAC to the Head of Centre, with a copy to the research student.
- (6) In case of any suggestions given by the Research Advisory Committee for improvement of the work, the candidate should make the changes accordingly.
- (7) In case the progress of the research scholar is unsatisfactory, the RAC shall record the reasons for the same and suggest corrective measures. If the student fails to implement these, the RAC may recommend to the Centre, with specific reasons, cancellation of the registration of the research student.

## 16. Topic Approval:

- (1) The candidate in consultation with the Research Guide and RAC shall decide the topic of research and shall write a suitable research proposal in the format prescribed. The candidate shall submit, along with the application, eight copies of his/her research proposal.



- (2) The research proposal shall be placed before the respective Research and Recognition Committee (RRC).
- (3) The RRC shall consider the topic of research and research proposal, and if satisfied shall give approval to the topic of research and research proposal.
- (4) If the RRC may suggest minor changes to the title and the proposal if it deems fit, such changes will be made by the student in consultation with the Guide and RAC, and the same shall be conveyed to the RRC.
- (5) If the RRC rejects the topic and proposal the student shall consult the RAC and the Guide and can send a fresh proposal/title after three months, but within one year.
- (6) The registered student shall not be allowed to register simultaneously for any other degree course.
- (7) The registration is deemed to be confirmed once the topic and proposal are approved by the RRC.
- (8) If the candidate desires to modify the title and/or the proposed plan of the research, he/she shall apply at least six months before the date of submission of synopsis. The RRC concerned may approve such changes on the basis of recommendation of the RAC, Research Guide and the Head of Research Centre.

#### **17. Registration of Ph.D. candidate:**

The candidate shall apply to the Registrar, MU, in the prescribed format for Registration, along with the prescribed registration fee.

#### **18. Course Work for Ph.D.:**

Credit Requirements, number, duration, syllabus, minimum standards for completion, etc., for Ph.D. programme shall be as under:

- (1) Ph.D. course work shall be of 12 credits.
- (2) The course work shall be treated as prerequisite for Ph.D.
- (3) A minimum of four credits shall be assigned to one or more courses on Research Methodology, which could cover areas such as quantitative methods, qualitative methods, computer applications, research ethics and review of published research in the relevant field, training, field work, etc. Other courses shall be advance level courses preparing the student for degree.
- (4) All courses prescribed for Ph.D. course work shall be in conformity with the credit hour instructional requirement and shall specify content, and instructional and assessment methods. They shall be duly approved by the respective Board of Studies.
- (5) The courses shall be arranged in a formal way by the University through University Departments and also at identified Institutions where experts in the



areas of course work shall deliver requisite number of lectures. Record of attendance of the students shall be kept. The attendance of a candidate less than that prescribed by the University shall make the course null and void for the candidate.

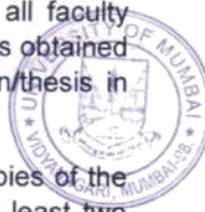


- (6) The Department where the student pursues research shall prescribe the courses relevant to the student based on the recommendation of the RAC.
- (7) The course work may be completed either at the research centre/s or University departments or premier institutions such as IIT, HBNI, BARC, TISS, ICSSR, TIFR, IIM etc; provided it is conducted in formal way.
- (8) All the students admitted to the Ph.D. programmes shall be required to complete the course work prescribed by the Department during the initial one or two semesters.
- (9) The candidates already holding M.Phil. degree and admitted to the Ph.D. programme, or those who have already completed the course work in M.Phil. and have been permitted to proceed to the Ph.D. in integrated programme, may be exempted by the Department from the Ph.D. course work. All the other students admitted to the Ph.D. programme shall be required to complete the course work approved by the University.
- (10) The grades in the course work, including research methodology courses, shall be finalized after a combined assessment by the RAC and the Department and the final grades shall be communicated to the Head of Centre and to the University.
- (11) An M.Phil. /Ph.D. student has to obtain a minimum of 55% of marks or its equivalent grade in the UGC 7-point scale (or an equivalent grade / CGPA in a point scale wherever grading system is followed) in the course work in order to be eligible to submit the synopsis of dissertation /Thesis continue in the programme and submit the dissertation/thesis.

**19. Evaluation and Assessment Methods, minimum standards/credits for award of the degree, etc.:**

- (1) Upon satisfactory completion of course work, and obtaining of a minimum of 55% of marks or its equivalent grade in the UGC 7-point scale, the M.Phil. scholar shall be required to undertake research work and produce a draft dissertation/thesis before completion of two years from the date of registration for M.Phil. and six years for the Ph.D. student. Women candidates and persons with disability (more than 40 % disability) may be allowed a relaxation of one year for M.Phil. and two years for Ph.D. in the maximum duration.
- (2) **Colloquium:** At least three months prior to the submission of the dissertation/thesis, the student shall make a presentation (Colloquium) before

the Research Advisory Committee, which shall also be open to all faculty members and other research students. The feedback and comments obtained from them may be suitably incorporated into the draft dissertation/thesis in consultation with the RAC.



- (3) **Synopsis:** The candidate shall submit to the University fifteen copies of the synopsis of his/her thesis through his/her Research Supervisor at least two months before submission of thesis. The format of the thesis shall be as prescribed.
- (4) **Research Publications:** M.Phil. scholars shall present at least one research paper in a conference/seminar and Ph.D. scholars shall publish at least one research paper in a refereed and cited journal/UGC approved journal and make two paper presentations in conferences/seminars before the submission of the dissertation/thesis for adjudication, and produce evidence for the same in the form of presentation certificates and/or reprints/acceptance letter from the publisher/editor.
- (5) Before submission of M. Phil./ Ph. D. dissertation/thesis, every candidate shall fulfil the requirements prescribed with respect to detection of plagiarism and any other form of academic dishonesty. While submitting for evaluation, the dissertation/thesis shall have an undertaking from the research student and a certificate from the Research Guide attesting to the originality of the work, vouching that there is no plagiarism and any other academic dishonesty and that the work has not been submitted for the award of any other degree/diploma of the same University or to any other University.
- (6) **Appointment of referees for M.Phil./PhD thesis:**

The existing practice of appointment of referees shall continue.

(7) **Submission of thesis:**

- a) The thesis/dissertation shall be submitted in the prescribed format in a spiral bound form and printing on both sides of a paper, along with a soft copy (CD).
- b) The Ph.D. candidate shall submit three copies of his/her thesis. The M.Phil candidate shall submit two copies of his/her thesis.

(8) **Evaluation of Dissertation/Thesis:**

- a) The M.Phil. dissertation submitted by a research student shall be evaluated by his/her Research Guide and one external examiner.
- b) The Ph.D. thesis submitted by a research scholar shall be evaluated by his Research Guide and two external examiners.

(9) **Viva voce:**

- a) The viva voce of M.Phil./Ph.D. candidates shall be in the form of Open



Defence of the thesis.



- b) The *viva voce* of the research student to defend the M.Phil. dissertation shall be conducted only if the evaluation report of the external examiner is satisfactory and includes a specific recommendation for conducting the *viva voce*.
- c) The *viva voce* of the research student to defend the Ph.D. thesis shall be conducted only if the evaluation reports of the two external examiners are satisfactory and include a specific recommendation for conducting the *viva voce*.
- d) The *viva voce* shall be conducted by – (i) the guide and the external examiner in the case of M.Phil. dissertation/thesis and (ii) the *viva voce* committee in the case of Ph.D. thesis
- e) The Ph.D. *viva voce* committee shall be constituted by the Head of the University Department/Head of the Research Centre and shall consist of the following:
  - (i) The Head of Department in case of University Department/ Head of Research Centre or his/her nominee – Chairperson
  - (ii) The Research Guide as convenor
  - (iii) The External Examiner who is appointed to conduct the *viva voce*
  - (iv) One Professor/Associate Professor from any department other than the Department concerned;

*Provided that* if the *viva voce* is conducted outside the University campus, with prior permission from the Director, BOEE, the member at (iv) above will be a nominee of the University who is a Teacher/University Officer not below the rank of Assistant Registrar and will be nominated by the Director, BOEE;

*Provided further that* this nominee shall submit his/her report in the prescribed format confidentially to the University at the conclusion of the *viva voce* regarding the conduct of the *viva voce*.

- f) The *viva voce* shall be open to the members of the RAC, all faculty members of the Centre, other research scholars and other interested experts/ researchers.
- g) The *viva voce* shall include a brief presentation by the candidate with respect to the research work done and the candidate should be tested for his/her knowledge in the research/subject area concerned and on the critiques given in the evaluation reports.
- h) If the evaluation report of the external examiner in case of M.Phil. dissertation or one of the evaluation reports of the external examiners in case of Ph.D. thesis, is unsatisfactory and does not recommend *viva voce*, the dissertation/ thesis shall be sent to subsequent external examiner out of the approved list of examiners and the *viva voce* shall be held only if

the report of the latest examiner is satisfactory. If the report of the latest examiner is also unsatisfactory, the dissertation/thesis shall be rejected and the research student shall be declared ineligible for the award of the degree.



- i) The day, date, time and the place for the *viva voce* shall be notified by the Head of the Centre, at least eight days in advance.
- j) When the Head of the Research Centre or Head of University Department himself/herself is the Guide for the Ph.D. student the *viva voce* committee shall be appointed by the Dean of the Faculty concerned.
- k) In case of dispute, the Dean of the Faculty concerned shall take an appropriate decision.
- l) If neither of the external examiners is able to be present at the time of the *viva voce*, the Vice-Chancellor, on the recommendation of the Research Guide and the Dean of Faculty concerned, may appoint a senior Research Guide to act as an external examiner for the *viva voce*.
- m) In case the Research Guide concerned is not available for the *viva voce*, the Vice-Chancellor, on the recommendation of the Dean of Faculty concerned and the Head of the Centre, may appoint one of the senior Research Guides.
- n) The *viva voce* committee shall evaluate the performance of the candidate and make a consolidated report signed by all the members along with the reply given to the queries raised by the external examiners and submit it to the University. This report, signed by all the members of the committee, shall be included in the thesis at the beginning. Further, along with the report a list of the persons attending the open defence (attendance sheet) shall also be submitted to the University.
- o) In case the *viva voce* is not satisfactory, the examiners may unanimously recommend, with reasons, that a fresh *viva voce* be organized within a period of not less than one month. If the defence is still not satisfactory, the panel should record the reasons for the same. The Committee may recommend the resubmission of the thesis with suggested changes or recommend the rejection of the thesis.

## **20. Provisional Certificate:**

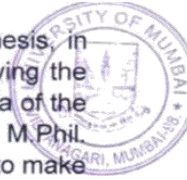
Prior to the actual award of the degree, the University shall issue a Provisional Certificate to the effect that the degree has been awarded from the date of *viva voce* in accordance with the provisions of University Grants Commission (Minimum Standards and Procedure for Award of M.Phil./ Ph. D. Degrees) Regulations, 2016.

## **21. Depository with INFLIBNET:**

Following the successful completion of the evaluation process and before the announcement of the award of the M.Phil./Ph.D. degrees, the CD of M.Phil.


*M.Phil./Ph.D. Regulations 2016\_VCD\_15 June 2018*

dissertation/ Ph. D. thesis, along with the hard copy of the dissertation/thesis, in the prescribed format, shall be sent to the University Library. After receiving the CD of the thesis in the format suggested, the Library shall prepare metadata of the dissertation/thesis and shall then submit an electronic copy of the M.Phil. dissertation /Ph. D. thesis to the INFLIBNET, for hosting of the same so as to make it accessible to all institutions/colleges.



The VCD shall come into force with immediate effect i.e. from the date of circulation in addition to the above mentioned existing ordinances and shall remain in force till the amendment in ordinances and new rules and regulations are formulated in pursuant to the subject matters dealt with in this VCD is made by the appropriate authorities.

Place- Mumbai  
Date- June 15, 2018

  
Prof. Suhas Pednekar  
Vice-Chancellor