

**UNIVERSITY OF MUMBAI**  
**No. UG/121 of 2015-16**

**CIRCULAR:-**

The Directors/Heads of the University Departments, Dean/Principals of the affiliated colleges in Faculty of Technology and Engineering, Pharmacy, Architecture and MCA etc. are hereby informed that the recommendation made by the Faculty of Technology at its Meeting held on 25/05/2015 has been accepted by the Academic Council at its meeting held on 31<sup>st</sup> August, 2015 vide item No. 4.13 and subsequently approved by the Management Council at its meeting held on 31<sup>st</sup> August, 2015 vide item No. 12 and that in accordance therewith, in exercise of the powers conferred upon Management Council under Section 54 (1) and 55(1) of the Maharashtra Universities Act, 1994, the Ordinance 6223, 6224, 6225, 6226, 6227,6228, 6229, 6230, 6231, 6232 & 6233 and Regulations 8954, 8955 relating to the Eligibility, Entrance Test, Admission, Course work, Registration and Examinations for Ph.D. degree programme is implemented, as per the Appendix, which is available on the University's web site ([www.mu.ac.in](http://www.mu.ac.in)) and that the same has been brought into force with immediate effect.

MUMBAI – 400 032  
24<sup>th</sup> November, 2015

REGISTRAR

To,

The Directors/Heads of the University Departments, Dean/Principals of the affiliated colleges in Faculty of Technology and Engineering, Pharmacy, Architecture and MCA.

A.C/4.13/31.08.2015

M.C/12/31.08.2015

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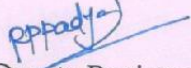
No. UG/121 -A of 2015

MUMBAI-400 032

24<sup>th</sup> November, 2015

Copy forwarded with Compliments for information to:-

- 1) The Deans, faculties of Technology and Engineering, Pharmacy, Architecture and MCA ,
- 2) The Chairman & Chairperson of the board of Studies & Ad-Hoc Board of Studies of various subject at faculty of Technology and Engineering, Pharmacy, Architecture and MCA,
- 3) The Director, Board of College and University Development,
- 4) The Co-Ordinator, University Computerization Centre,
- 5) The Controller of Examinations.

  
Offg. Deputy Registrar  
Under Graduate Studies

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# **UNIVERSITY OF MUMBAI**

## **Ordinances/Regulations related to Eligibility, Entrance Test, Admission, Course work, Registration and Examinations for Ph.D. degree Under Faculty of Technology (Engineering, Pharmacy, Architecture and MCA)**

These ordinances are for the conduct of Entrance test for the admission for Ph.D. degree that is imperative as per the UGC regulation of 2009 (minimum standards and procedures for award of Ph.D. degree) and shall be effective immediately from the date of their publication. The earlier ordinances O-5473 to O-5482 applicable to all faculty will continue to be applicable to all faculty except for the Faculty of Technology and henceforth for Faculty of Technology these ordinances are replaced by the following new ordinances:-

### **O.6223 :- Eligibility**

A candidate may be eligible for admission to the Doctor of Philosophy program in a given faculty or subject, provided that any one of the following conditions are satisfied and that s/he fulfils the admission procedure as envisaged under the relevant ordinance :

1. The candidate possessing Ph.D. degree of this university or any other UGC recognized university, (having followed the guidelines given in this regard by the UGC from time to time) in the given subject and desiring to (be conferred) pursue the Ph.D. degree in another subject.
2. The candidate is a post graduate and has cleared a prescribed examination such as GATE/GPAT/SET/NET/ (JRF) at any earlier time or is a fellowship or teacher fellowship holder of this university or any of the apex bodies such as CSIR/UGC/ICAR/ICMR/ICSSR/DBT/DST.
3. The candidate is a Post Graduate of recognized university working in a National Laboratory/Institute/Government or reputed private organization with minimum five year teaching or research experience. However, such candidate shall be required to appear for an aptitude test approved by the university and to be conducted by the research Centre where s/he seeks admission for Ph.D. The experience is to be certified by the head of the institution/organization
4. The candidate is a post graduate of this university or any other UGC recognized university with a minimum 55% marks (or a B grade, where graded are awarded), at his post-graduation degree and has successfully cleared the entrance test for Ph.D. (PET) conducted by the university prior to admission for the Ph.D. program in the given subject for the candidates having passed their postgraduate degree on or after 11<sup>th</sup> July 2009. For those passed before 11<sup>th</sup> July 2009, minimum marks can be 50%.  
5% relaxation in the required percentage of marks will be given to the candidates of state of Maharashtra belonging to SC/ST/DT/NT/SBC/OBC categories.

5. The candidate desiring to be conferred the Ph.D. degree in a subject other than the one in which he has obtained the Post Graduate degree of this university or any other UGC recognized university has cleared an aptitude test in the subject in which he so desires to be conferred upon the Ph.D. degree, either after or prior to successfully clearing the entrance test for Ph.D. (PET) either in the subject in which he has obtained the Post Graduate degree or the subject in which he desires to seek the Ph.D. degree.
6. The candidate being a foreign learner and possessing a degree equivalent to the post graduate degree of this university after successfully clearing the prescribed online test as approved by the University for the given faculty or subject and conducted by the respective research centre. The said research Centre shall be required to maintain the record of such online test administered for such candidate.
7. The candidate is a teacher having full time approved teaching experience of at least five years in Degree College of University of Mumbai.
8. Applicants having age more than 60 years need permission from the Vice Chancellor to enrol for Ph.D.

**O.6224 :- Entrance test**

1. Admission for Ph.D. programme shall normally be on the basis of an entrance test (MPET/PET) to be conducted by the university, twice in a year on a date as decided and declared by controller of examination of the university in the academic year for this purpose.
2. The university shall decide on annual basis a predetermined and manageable number of seats for admission to the Ph.D. programme. For this purpose the concerned and recognized research centres such as the various university departments / affiliated colleges/ research institutes shall submit to the university the seats available or vacant for admission to Ph.D. programme on or before a date prescribed for this purpose by the controller of examination of the university. The eligibility for appearing for and exemption from appearing for PET shall be subject to the ordinance O-XX1.

**R. 8954:- Process of PET**

1. All university departments, affiliated /autonomous colleges, departments in such colleges/institutes recognized for carrying our research leading to Ph.D. degree by the University shall be the centres for conducting PET.
2. The Principal of an affiliated college / Head of the relevant University Department / Director of the research Institute shall be the authority to conduct PET at the given centre
3. All Supervisors, Research guide/s recognized by the university shall be responsible for setting question paper/s in the given faculty/subject for PET as and when directed to do so by the University. They shall also be responsible for the evaluation of the respective answer books.

4. All research centres as per this ordinance shall provide the information in the following manner :- The Principal of an affiliated college / Head of the relevant University Department / Director of the research Institute shall
  - a) Intimate the university about the seats vacant for admission for Ph.D. at the centre prior to the declaration of the date of PET by the University.
  - b) Follow admission procedures within the period prescribed for the same by the Thesis Section of University.
  - c) Arrange for the necessary infrastructure for the purpose of conducting PET.
  - d) Arrange for assessment of answer books or submission of answer books after the PET is conducted for centralized assessment as may be directed by the university.
  
5. The result of PET shall be permanently valid from the date of PET result announced by the controller of examination.

**O.6225:- Pattern of PET**

The Ph.D. Entrance Test (PET) will consist of one paper of 100 marks for the duration of two (2) hours in the relevant subject of various faculties. For Pharmacy subject, separate PET exams will be conducted for the specializations like Pharmaceutical Chemistry, Pharmaceutics, Pharmacology, Pharmacognosy, or other specialization that are recognized by University of Mumbai from time to time.

**6.1 Syllabus and Pattern of Question Paper**

- (a) Syllabus – As may be prescribed by the university at the given time.
- (b) Pattern of Question Paper – The paper pattern shall be as follows;

Section I: 15 multiple choice questions (30 marks) based on the following components

- i) Research aptitude
- ii) Logical reasoning
- iii) Reading comprehension
- iv) Language competency

Section II for Engineering, MCA and Pharmacy: 35 multiple choice questions (70 Marks) on core subject and pattern shall be similar to GATE.

Section II for Architecture: 20 multiple choice questions (40 Marks) on core subject and Three to Six descriptive questions with equal weightage on core subjects (30 marks).

- 6.2 Standard of Passing (PET) – Candidates securing (50%) fifty percent or more marks (45% or more for candidates from reserved category) in entrance test will be declared as successful by the controller of examination and eligible to apply for Ph.D. admission process. PET being one of the eligibility criteria for Ph.D. admission, the declaration of the candidate to be successful in PET shall not guarantee his/her admission.**

**R.8955:- Admissions to Ph.D. program shall be carried out twice in a given academic year.**

Every candidate who is otherwise eligible and qualifies for admission to the Ph.D. in a given Faculty shall make an application for admission to the Principal of an affiliated college / Head of the relevant University Department / Director of the research Institute in a format prescribed for the purpose by the principal of the affiliated college/Head of the concerned University Department / Research Centre where he/she desires to seek admission.

**O.6226:- Committee for Interview and Selection**

1. The Head of the University Department / Research Centre/Recognised Research Institute shall constitute a committee for the conduct of interview of the candidates for Ph.D. program. The Committee for the Interview shall comprise of:-
  - a) Admission at Research Centres attached to the affiliated colleges :
    - (i) Principal (Chairman)
    - (ii) Head of the concerned department
    - (iii) Two subject experts (One from the University Department / Recognized Research Centre / Affiliated College and other from the Reserved Category(except for minority institute)nominated by the principal)
    - (iv) Research guide/s of the concerned subject
  - b) Admission at Recognized Research Institute :-
    - (i) Director (Chairman)
    - (ii) Dean of the concerned Faculty or nominee
    - (iii) Head of the concerned department
    - (iv) Research guide/sfrom the research institute
    - (v) One subject expert from Reserved Category (except for minority institute) nominated by the Vice-Chancellor.
2. The Candidate is expected to discuss the proposed research problem during the interview. If the performance of the candidate is found satisfactory at the interview and subject to the reservation policy for admission, s/he may be granted admission to the Ph.D. program irrespective of the program the candidate has applied for.

**O.6227:- Allotment of research guide**

1. Allotment of Research Guide shall be done by the respective research centre / University Department/Recognized Research Institute on the basis of :-
  1. Number of candidates per faculty member
  2. The available specialization among the Research Guides
  3. Research interest of the candidate as indicated by him / her during the interview
  4. The allotment / allocation of Research Guide shall not ordinarily be left to the individual candidate or the Research Guide.
  5. Only one foreign candidate may be allowed per Research Guide

6. Head of the University Departments / Research centre /Recognized Research Institute as the case may be shall ensure allotment of Research Guide to the candidate within a month of the date of admission for the Ph.D. Program.
7. Ph.D. guides of the University should give an undertaking that they are /are not guiding students in any other university and in case they are the recognized guide in any other university, the total number of candidates registered under him / her for Ph.D. does not exceed Eight at any point of time.
8. Once the student submits his/her synopsis to thesis section of the University, that seat is considered to be vacant and the guiding teacher can enrol new candidate in place.

#### **O.6228:- Course work**

1. The Course work is mandatory for Ph.D. program and shall consist of 16 (sixteen) credits divided into three courses.
2. The Research Guide shall supervise the Course work to be carried out by the candidate and shall certify as such on successful completion of the same, before submission of the topic approval synopsis for the Ph.D. work in the University by the candidate. No topic approval synopsis will be accepted without course completion certificate except in case of the candidates who have been exempted from the course work by the ordinances.
3. The course work shall be divided as follows :-
  - i. Six credits for a paper on Research Methodology that may include a part on Computer Applications in the concerned subject. The syllabus for this Paper is common for all programs in Faculty of Technology.
  - ii. Six credits for core component course proposed by guide, which can be taken under the guide himself or herself/may attend the similar course in any premier institute such as IIT/NITTE/any Post graduate course proposed by guide at any research centre and produce the certificate stating clearly that said candidate successfully completed the course.
  - iii. Four credits for seminar in the proposed research area involving detailed state of the literature review which will be assessed and certified by the concerned guide.

#### **O.6229:- Registration of Candidate in University.**

1. The candidate admitted to the Ph.D. program College / Institution, shall submit to the Registrar of the University his/her application for Registration in the prescribed format along with the prescribed fees after successful completion of course work and approval of research topic by the Research and Recognition Committee (RRC) of respective board of studies. The applicant shall submit five hard copies of his / her research proposal as per the guidelines that may be provided by the Thesis Section of the University from time to time.
2. RRC shall make a decision about the acceptance / modifications to / rejection of the same and communicate to the candidate and research guide accordingly.

3. The Date of provisional admission for the Ph.D. program shall be confirmed after the candidate registers himself/herself for the Ph.D. program and shall be valid for a period of FIVE years from the date of admission. Extension of up to a maximum of two years may be granted by the RRC provided it is satisfied about the reasons for delay and is of the opinion that the candidate has done substantial work. Further extension of one year may be granted by the Vice-Chancellor, on recommendation of the concerned Dean/Committee of Deans.
4. If the candidate so desires, s/he may be allowed to modify or partially change the title / contents of his/her research work on making an application for the same through his / her research guide (and co-guide if applicable). The same may be considered and accepted if found suitable, by the RRC of the given subject.
5. Normally a candidate shall be required to complete his/her research under the supervision of the guide allotted to him/her. However, the RRC concerned may allow change of guide on the production of a 'No Objection Certificate' from the first guide and an acceptance letter from the new guide. In case of such a change, the candidate shall work for a minimum period of one calendar year under the new guide before s/he submits the thesis. A NOC will not be required if the candidate justifies the non-availability of his/her guide. The justification will have to be endorsed by the head of the institution where the candidate has registered for research. In case of any dispute, non-availability of guide, the Vice-chancellor on recommendation of the dean of the faculty concerned will take appropriate decision.

**O.6230:- Progress monitoring**

1. All registered candidates shall be required to submit to the Head of the University Department / Principal of the College / Director of the research Institute through their research guides elaborate research progress reports every year. If the candidate fails to submit two reports consecutively, based on recommendation of the progress monitoring committee appointed by the Head of research centre as per the proposed structure, principal shall issue a show cause notice to candidate stating that 'why should your admission not be cancelled'.
2. The proposed progress monitoring committee for each research student at Research Centres attached to the affiliated colleges shall comprise of as follows:
  - (i) Chairperson of Progress monitoring committee -Principal
  - (ii) Head of the concerned department
  - (iii) One subject expert in the area of research, who shall be a recognised Ph.D. Guide
  - (iv) Research guide/s
3. The progress monitoring committee shall take decision related to cancellation of admission of such candidates after going through the explanation provided by said candidate. The final decision will be communicated to the candidate by the principal.

4. In case of a dispute between the research guide/co-guide and the candidate, the committee consisting of the following members shall examine the matter and report it to the vice-chancellor whose decision shall be final.
  - i) A member of the concerned BUTR appointed by Vice Chancellor, who shall be the convenor of the committee
  - ii) The member of the concerned Research and recognition committee appointed by dean
  - iii) The head of the institution through which the candidate has registered for research degree( If the complaint is against the head he/she shall not participate in the proceedings of the meeting)

The report shall include specific recommendation and should be submitted to Vice-chancellor.

### **O.6231:- Submission of synopsis and Thesis**

1. The candidate after confirmed registration in the University of Mumbai and having completed at least Two Years of research work OR Three Years from the date of admission for Ph.D. program, and having published/presented at least two research work out of them one should be a paper in referred journals and second can be a paper in referred journals OR a presentation in international conference. Submission of an acceptance letter of the research paper by the appropriate journals/conference may be allowed for the submission the synopsis of the thesis for Ph.D.
2. The synopsis shall be in a format prescribed by the Thesis Section and shall contain introduction, chapter wise brief account of the work done and overall conclusions.
3. Before the submission of the thesis, the candidate shall be required to make a pre submission seminar regarding the body of his / her research work before the progress monitoring committee. The Principal / Director of the Institute shall arrange the same on request by the candidate and endorsed by the research guide. In light of the discussion during the seminar the candidate shall prepare a draft copy of his thesis and submit it to the Research Center one week prior to the presentation of seminar. The small refinement in the title of thesis shall be allowed based on the recommendation of progress monitoring committee during pre-submission presentation.
4. The draft Thesis may be submitted within two months of the submission of the synopsis. If the candidate fails to submit his / her draft thesis within six months of submission of the synopsis he / she may request for an extension of six months for the same, by making a written application through the Research Guide to the Principal / Director as the case may be for approval. The RRC may allow an additional extension of up to six months for the submission of draft thesis on payment of the prescribed fees of Rs. 2000/- for the same. Further extension may be allowed by the Vice-Chancellor on recommendation of the Dean or Deans in case of inter faculty research work.
5. Each candidate for the degree shall submit draft thesis which shall embody the results of his/her research and state whether the work is original condition based on such result. Thesis must contain appropriate acknowledgement of others and this should be reflected in the bibliography and data sources. Further the candidate must not have submitted the work



contained in thesis for award of any other degree. The declaration in this regard shall be given by the candidate.

6. The candidate must also forward with his/her application three copies of any original contribution or contributions to the knowledge on the subject selected by him/her independently or jointly with others upon which he/she relies in support of his candidature. The Thesis shall be printed or written in English.

**O.6232:- Appointment of examiners:**

- 1) The RRC of the respective board/s shall make appointment of referees preferably by random selection from pre-existing pool of names generated for each subject with various specializations by board of studies. Research guide can also propose minimum six referees from the same research area at the time of submission of synopsis, proposed list can be referred by the RRC but it is not mandatory on the committee to recommend from the same list.
- 2) There shall be two referees of which at least one must be from outside the state of Maharashtra, if the competent authority so deems in view of nature of research. However there should be no bar on foreign referee whenever possible and if the committee feels necessary. As far as possible, care should be taken to avoid reciprocal appointment of referees vis-à-vis the guiding teacher at least for the period of five years.

**O.6233:- Open defence- viva-voce**

- 1) On the receipt of the report of the external referees appointed by the board of examinations, the internal referee/ guide and one of the referees shall conduct the viva-voce of the candidate. The head of the department or any senior teacher of the subject concerned, appointed by Vice –chancellor shall act as a chairperson of the viva. The external referees if so desired may send the written questions to the referees conducting the viva to seek clarifications on any points in the thesis. The viva-voce test shall be conducted only after receiving favourable reports from both the external referees.
- 2) The viva-voce of the candidate shall be conducted in the open defence manner.
  - a) The candidate shall supply to controller of examination sufficient number of copies of the synopsis and of the draft thesis as required.
  - b) After both the external referees have sent their reports recommending acceptance of the Thesis for the award of Ph.D. degree, the date for open defence shall be fixed in consultation with one of the external referees who is residing in close proximity to the university and the internal referee/guide. At least two week notice will be given to the student the schedule of the viva. The open defence will be conducted in following manner:
    - i) The date of defence, place/venue along with the synopsis shall be put up on the website/notice board of the university at least one week before the date of open defence.
    - ii) The schedule and synopsis is also to be sent to different subject experts suggested by guide and the head of the department from where the candidate is registered for Ph.D. The Head of the department should put the same on notice board.

- iii) The questions in writing to be asked in the open defence should be received at least three days prior to the date of open defence. Such questions should be handed over to the chairperson of the open defence committee on the date of the open defence.
- iv) One of the external referee and the guide will be present at the open defence. Any other members of faculty, research students and interested students may also attend the open defence. The external referee and the guide will ask the questions for which no permission of the chairperson is needed. For other questions received, and the questions the audience want to ask, the chairperson in consultation with the external referee and guide will decide whether to allow them or not. No person in audience will have right to comment on acceptability or non-acceptability of the thesis for award of the degree.
- v) At the initiation of open defence, the candidate will make a brief presentation which will be followed by questions and answers.
- vi) The internal referee and guide shall prepare a report of the open defence and forward it to the controller of examinations. Their recommendations shall be specific and final. They shall either recommend the award of the degree to the candidate or a fresh defence after the specific time, if the performance of the candidate found unsatisfactory. The following procedure may be followed for holding the viva second time.
  - i) Re-examination of the candidate (Second viva) should be conducted as far as possible, by the same referee who had conducted the viva at the first instance.
  - ii) The decision that, although the thesis was found worthy of acceptance, the candidate's performance at the viva-voce was found unsatisfactory and, therefore, he/she is required to appear again at a second viva within six months and that if he/she fails to satisfy the referees at the second viva, his/her thesis shall be rejected, will be communicated to the candidate by registered post (A.D.) within one month on the receipt of the viva report from the referees.
  - iii) Within two months of the receipt of the communication of the decision to the candidate, the candidate should write to the university through his/her guide that he/she is prepared to appear again before the referees/ or his/her second viva-voce examination.
  - iv) The candidate should submit his/her application through the guide and should pay 50% of the examination fee towards the conduct of second viva-voce examination.
  - v) The honorarium prescribed by the university shall be paid to the external referee for holding the second viva-voce examination. The internal referee will also be entitled to honorarium.
  - vi) The thesis of the candidate should be retained by the office till the candidate's reappearance at the second viva-voce examination and the declaration of his/her result.

vii) The referees should hold the viva-voce examination within generally, one month of the receipt of the communication in the matter.

- c) When opinion of the two external referees is unanimous and on successfully completing the viva-voce, the candidate shall submit to the university the final copy of the thesis after incorporating the changes and updating the data, if suggested by referees (the guiding teacher will so certify). The three copies in hard bound form of final approved thesis shall be submitted on CD, in addition to a hard copy. After receiving final approved thesis copy, the concerned section of University can issue provisional certificate stating he/she has been successfully defended the thesis and awarded Ph.D. degree. The date of open defence shall be considered as successful completion of degree. The university shall make the thesis available on the website for a period of three years from the date of acceptance as per UGC guidelines.
- d) However, if only one referee of the two external referees favourably recommends the acceptance of the thesis for award of Ph. D. degree, the controller of examinations shall appoint one additional referee to evaluate the thesis from the list of referees approved by Board of Examination. The board of examinations shall accept or reject the thesis in accordance with the majority opinion of the three external referees.
- e) If both the external referees submit a negative report indicating rejection of the thesis, the candidate's viva-voce shall not be conducted and he/she shall be declared failed to qualify for the Ph.D. degree.
- f) A work that has been rejected may be re-submitted after revision after one year of the receipt of the rejection letter and subject to the payment of half the original examination fee (Synopsis fee).

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