

University of Mumbai



No. UG/ 119 of 2019-20

CIRCULAR:-

Attention of the Principals of the affiliated Colleges, the Head of the University Departments and Directors of the recognized Institutions in Science & Technology Faculty.

They are hereby informed that the recommendations made by the Board of Studies in Microbiology, at its meeting held on 22nd May, 2019 have been accepted by the Academic Council at its meeting held on 26th July, 2019 vide item No. 4.12 and that in accordance therewith, the revised syllabus of Ph.D. course work in Microbiology has been brought into force with effect from the academic year 2019-20, accordingly. (The same is available on the University's website www.mu.ac.in).

MUMBAI – 400 032
18th September, 2019


(Dr. Vinod P. Patil)
I/c REGISTRAR

To

The Principals of the affiliated Colleges, the Head of the University Departments and Directors of the recognized Institutions in Science & Technology Faculty. (Circular No. UG/334 of 2017-18 dated 9th January, 2018.)

A.C./4.12/26/07/2019


No. UG/ 119 -A of 2019-20

MUMBAI-400 032

18th September, 2019

Copy forwarded with Compliments for information to:-

- 1) The I/c Dean, Faculty of Science & Technology,
- 2) The Chairman, Board of Studies in Microbiology,
- 3) The Director, Board of Examinations and Evaluation,
- 4) The Professor-cum-Director, Institute of Distance and Open Learning (IDOL),
- 5) The Director, Board of Students Development,
- 6) The Co-ordinator, University Computerization Centre,


(Dr. Vinod P. Patil)
I/c REGISTRAR

UNIVERSITY OF MUMBAI**Syllabus for Approval**

Sr. No.	Heading	Particulars
1	Title of the Course	PhD. Course Work in Microbiology
2	Eligibility for Admission	MSc. (55%). PET Exam.
3	Passing Marks	40/100.
4	Ordinances / Regulations (if any)	VCD No Exam/Thesis/Univ/VCD/947 of 2018 dt 15 June 2018.
5	No. of Years / Semesters	2 Semesters.
6	Level	P.G. / U.G./ Diploma / Certificate (Strike out which is not applicable)
7	Pattern	Yearly / Semester (Strike out which is not applicable)
8	Status	New/ Revised (Strike out which is not applicable)
9	To be implemented from Academic Year	From Academic Year <u>2019-20</u>

Date:

Signature:

Name of BOS Chairperson / Dean :

Prof (Dr) Z. P. Bhatnara

UNIVERSITY OF MUMBAI



Revised Syllabus for Ph.D.

COURSE WORK

in

MICROBIOLOGY

Program: Ph.D

Course code: DSMD

Paper DSMB 101 and 102

With effect from the academic year 2019–2020

VCD No: Exam/thesis/Univ/VCD/947 of 2018 dated 15th. June 2018

Course work for PhD degree in Microbiology

Ph.D Course work In Microbiology

(for students admitted after 15th June 2019 onwards)

Course code: DSMD

VCD No: Exam/Thesis/Univ/VCD/947 of 2018 dated 15th. June 2018

PREAMBLE

The University of Mumbai offers research programmes in different subjects and in interdisciplinary areas under the various faculties leading to the degree of Doctor of Philosophy (Ph.D.). A candidate shall ordinarily work at a recognized place of research which includes the University Departments, research Institutes and Affiliated Colleges recognized as “Research Centre” by the University.

The rules and regulations regarding the eligibility and process of the entrance examination, interview , registration and course work for the Ph. D. programme are given in the **VCD No: Exam/Thesis/Univ/VCD/947 of 2018 dated 15th. June 2018**

The course work for Ph.D. in Microbiology shall have two courses of 6 credits each namely Course-I (DSMB-101) and course- II(DSMB-102) The mode of assessment for the evaluation of coursework is mentioned in the Guidelines for the common Ph.D. course work for Science subjects.

Before submitting the Research Proposal to the University for Topic Approval the selected Ph.D. candidate shall make the Power Point Presentation of his / her Research Proposal in front of the **Evaluation Committee**”. This evaluation committee shall constitute:-

1. Head of the Department
2. Research Guide/s- under whom candidate/s is /are selected
3. Senior Faculty from the Department
4. Subject experts from outside research institutes who are also recognized Ph.D. Guides, either in service or retired.

After incorporating the suggestions (if any) of the evaluation committee, the corrected final copy shall be submitted to the University for consideration by R.R.C. Letter from the concerned Research Centre duly signed by all the members of evaluation committee regarding the presentation made by the candidate shall be attached along with the proposal copy to be submitted for topic approval.

The course work for Ph.D in Microbiology would be as follows

Paper Course	Title	Max Credits
Paper DSMB 101	Research Methodology and Computer Applications	6
Paper DSMB 102	Active participation and Academic development	6

Paper Course	Title and Max Credits	Particulars	Period of completion	Topics
Paper DSMB 101	Research Methodology & Computer Applications (6 credits)	<ul style="list-style-type: none"> • Lectures to be conducted • Test /assignments will be done by respective resources persons • The grades will be finalised after a combined assessment by the college/institute RAC and the Head of dept • The final grades will be communicated to the University 	to be completed in a formal way during the initial 1 st . or 2 nd . Semester at Recognised Research centres or University depts. or Premier Institutions like IIT, BARC HBNI ICSSR, IIM etc	<ul style="list-style-type: none"> • As per detailed syllabi submitted below OR • Courses relevant to the syllabi can be selected by the respective RAC from SWAYAM, MOOC NPTEL, Coursera and students can join them online. • Evaluation certificate from the respective agency will be mandatory for the transfer of 6 credits when such online courses are selected
Paper 2 DSMB 102	Active participation & Academic Development (6 credits)	<p>1. Poster/oral paper presentations in an ISBN recognised Conference of National and International repute. 1 credit /presentation (Max- 1 credit)</p> <p>+ Attending training for advanced techniques in reputed institutes / laboratories for 1 week period -1 credit (max -1 credit)</p> <p>+ Publication of two paper in UGC recognised/ approved journals 2 credit /paper (Max 4 credits)</p>	<p>Before the submission of thesis preferably In the first two years of the degree</p> <p>To be published before the submission of the synopsis</p>	

Detailed Syllabi for DSMB 101

Unit	Topics	Lectures	credit
Unit-I	Basics of research methodology	15L	01
	Strategies, planning and analysis	01	
	Objectives of research	03	
	- Short term goals and long term goals		
	- Research design-		
	- Repeatability, reproducibility and reliability		
	- Experimental protocols		
	Literature search, -Reference management	02	
	-Systematic literature search		
	- Scientific Search techniques		
	How to formulate query	01	
	Methodology filters	01	
	Impact factor	01	
	Principal bibliographic databases	01	
	Citation style		
	Plagiarism	01	
	Ethics of animal research -CPCSEA, institutional ethics committee, OECD guidelines	01	
	Basic principles of human research ethics- International regulation		
	Guidelines for writing scientific proposal, scientific reports, scientific paper, identification of good journal, Guidelines for writing good thesis.	03	
Unit-2	Introduction to Biostatistics in Research	15L	01
	Sampling	04	
	Collection of data, classification & representation		
	Measurement scales, variables & their measurements		
	Measures of central tendency -mean, median, mode, geometric mean	03	
	Measures of dispersion- Range, Q.D., M.D., variance, standard deviation	02	
	Correlation and Regression analysis: Correlations and regressions-: Relation between two variables, scatter diagram, definition of correlations & their equations, interpretation of regression coefficients, principles of least squares, Two regression lines, curve fitting Karl Pearson's coefficient of correlation, Spearman's coefficient of correlation	06	
Unit-3	Theory of probability	30L	02
	A. Parametric tests		
	• Large sample Tests	03	
	i. Testing significance of single population mean		
	ii. Testing significance of two population mean		
	• Small sample Tests	05	
	i. Testing significance of single population mean		
	ii. Testing difference between two independent normal population mean		
	iii. Testing difference between two correlated normal population mean		
	iv. Testing significance of correlation coefficient		
	• χ^2 test	05	
	i. Testing single population variance		
	ii. Testing Goodness of fit		

Kindly Note :

1. The record of the evaluation is to be maintained till the learner clears his/her PhD degree from the university.
2. After completion of the course-work, guiding teacher will submit the certificate of completion of course work to the University in the prescribed format:

Name of the research centre

Certificate

This is to certify that Mr/Ms/Mrs...(Surname)(First name) (Second name)..... has been a regular student of Ph.D. with registration number He/She has attended the course work conducted at the recognized research centre/department from..... to during the year He/She has successfully completed the Ph.D. course work prescribed by the University of Mumbai. He/She secured grade inpoint scale.

Date:
Seal

Guiding teacher
Name:

Head of the Department/principal
Name: