

# BHARATI VIDYAPEETH

(Deemed to be University)  
Pune, India.

- Accredited with 'A+' Grade (2017) by NAAC
- 'A' Grade University Status by MHRD, Govt. of India
- Accredited (2004) & Reaccredited (2011) with 'A' Grade by NAAC
- Category-I (Deemed to be University Grade) by University Grants Commission
- Recognized under Section '12 B' of UGC Act (1956) by University Grants Commission
- Ranked 76th among Top 100 Universities by NIRF 2022, Ministry of Education, Govt. of India



## INFORMATION BROCHURE OF ENTRANCE TEST BV-MBT - 2023

**FOR ADMISSION TO THE POST GRADUATE DEGREE PROGRAMMES**

**Master of Science in Biotechnology /Medical Biotechnology / Bioinformatics (MBT) At  
Bharati Vidyapeeth (Deemed to be University)**

**Rajiv Gandhi Institute of Information Technology and Biotechnology, Pune**

Ranked among top 100 Colleges (30th in 2017, 62nd in 2018 & 42nd in 2019)

Under college category by NIRF India Ranking)

## Important Dates M. Sc. Biotechnology (BV-MBT-2023)

Entrance Test	Last Date of Online Application	Date of Online Entrance Test	Date of Declaration of Merit list
M.Sc. Biotechnology - 2023 computer center based entrance test	21st June 2023	1st July 2023	<b>Will be notified</b> at <a href="http://www.bvuniversity.edu.in">www.bvuniversity.edu.in</a>

The date of declaration of the result of computer center based entrance test and date of counseling of admission will be notified at the website <https://www.bvuniversity.edu.in/>

**Proposed Fee Structure for the year 2023-24 is mentioned in point no. 8 in this information brochure**

**Test Centers for computer centre based entrance test 2023-24 :**

Sr. No.	CENTER NAME		CENTER NAME		CENTER NAME		CENTER NAME
1	AGARTALA	17	DELHI	33	KARAD	49	RAIPUR
2	AGRA	18	GAYA	34	KARNAL	50	RAJKOT
3	AHMEDABAD	19	GHAZIABAD	35	KOCHI	51	RANCHI
4	ALLAHABAD	20	GORAKHPUR	36	KOLHAPUR	52	SANGLI
5	AMRAVATI	21	GUWAHATI	37	KOLKATA	53	SATARA
6	AMRITSAR	22	HISAR	38	KOLLAM	54	SOLAPUR
7	AURANGABAD	23	HYDERABAD	39	KOTA	55	SRINAGAR
8	BAREILY	24	IMPHAL	40	LUCKNOW	56	SURAT
9	BELGAUM	25	INDORE	41	MADURAI	57	THANE
10	BENGALURU	26	JABALPUR	42	MUMBAI	58	THIRUVANANTHA PURAM
11	BHOPAL	27	JAIPUR	43	MUZAFFARPUR	59	UDAIPUR
12	BHUBANESWAR	28	JALGAON	44	NAGPUR	60	VADODARA
13	BILASPUR (CG)	29	JAMMU	45	NASHIK	61	VARANASI
14	CHANDIGARH	30	JAMSHEDPUR	46	NAVI MUMBAI	62	VIJAYAWADA
15	CHENNAI	31	JODHPUR	47	PATNA		
16	DEHRADUN	32	KANPUR	48	PUNE		

**\*Note:** If the candidates count for a centre is less than 25, then the candidate will be allocated to the nearest available centre. NO REQUEST FOR CHANGE IN EXAMINATION CENTRE WILL BE CONSIDERED UNDER ANY CIRCUMSTANCES.

## OUR INSTITUTE (For information)

### Pune

Bharati Vidyapeeth (Deemed to be University)

**Rajiv Gandhi Institute of Information Technology And Biotechnology**

Katraj, Pune 411 046.

Tel. No.: 020-24379013, 24365713

Website : [rgitbt.bharativersityapeeth.edu](http://rgitbt.bharativersityapeeth.edu)

Email : [rgitbt@bharativersityapeeth.edu](mailto:rgitbt@bharativersityapeeth.edu)

Commencement of Classes : **Will be notified**



**Hon'ble Dr. Patangrao Kadam**

Founder : Bharati Vidyapeeth (1964)

FOUNDER - CHANCELLOR: Bharati Vidyapeeth (Deemed to be University)



: Vision of the University :  
To be a world class University for Social Transformation through Dynamic Education



**Hon'ble Dr. Shivajirao Kadam**  
Chancellor,  
Bharati Vidyapeeth  
(Deemed to be University), Pune



**Hon'ble Dr. Vishwajeet Kadam**  
Secretary,  
Bharati Vidyapeeth  
Pro Vice Chancellor,  
Bharati Vidyapeeth  
(Deemed to be University), Pune



**Hon'ble Dr. Vivek Saouji**  
Vice Chancellor,  
Bharati Vidyapeeth  
(Deemed to be University), Pune

## BHARATI VIDYAPEETH

### Nurturing Values Since 1964....

Established on 10th May 1964 by Visionary Leader Dr. Patangraoji Kadam, Bharati Vidyapeeth, the parent body of Bharati Vidyapeeth (Deemed to be University) is celebrating 60 glorious years in the education sector. Bharati Vidyapeeth today is widely acclaimed as one of the largest Educational Conglomerate in India imparting quality education right from pre-primary up to doctoral level through its 190+ institutions and 29 constituent units.

The ambit of Bharati Vidyapeeth institutions of higher education encompasses all professional disciplines which include the colleges of Medicine, Dentistry, Nursing, Audiology, Optometry, Physiotherapy, Ayurved, Homeopathy, Engineering, Architecture, Management, Law, Pharmacy, Hotel Management and Catering Technology, Environment Education, Physical Education, Health Management, Biotechnology etc.

Research today is at the center stage of every educational institution. Foreseeing it way back in 1986 Dr. Patangraoji Kadam founded two self-financed indigenous research institutes viz; R&D Centre for Pharmaceutical Sciences and Applied Chemistry; and Yashwantrao Chavan Institute of Social Science Studies and Research. Subsequently in 2001 International Research School for Health Affairs (IRSHA) was incorporated, which has collaboration with research partners from India and Abroad. These institutes have inculcated a research culture in the campuses of Bharati Vidyapeeth.

With a strong belief in social inclusion and living up to its mission statement 'Social Transformation through Dynamic Education', Bharati Vidyapeeth has spread its wings to provide educational opportunities to both the haves and have nots of the society by establishing campuses at Pune, New Delhi, Navi Mumbai, Kolhapur, Solapur, Karad, Satara and Panchgani.



## BHARATI VIDYAPEETH (Deemed to be University) PUNE

In recognition of excellence in the field of education, Ministry of Human Resources Development, Government of India on recommendation of UGC conferred the prestigious Deemed to be University status to 12 institutions of Bharati Vidyapeeth in 1996. This is how Bharati Vidyapeeth (Deemed to be University) came into existence.

Later another 17 institutions were added to the ambit of Bharati Vidyapeeth (Deemed to be University). Today, it has 29 constituent colleges and another 13 schools and departments under 12 faculties namely:

1. Medical Sciences
2. Dentistry
3. Ayurved
4. Homeopathy
5. Nursing
6. Engineering and Technology
7. Pharmaceutical Sciences
8. Management Studies
9. Arts, Social Sciences and Commerce
10. Sciences
11. Law
12. Interdisciplinary Studies

All the constituent colleges are known for its excellent infrastructure, experienced and caring faculty, contemporary curricula, ICT based teaching learning methodology, thrust on research and ample opportunities for co-curricular & extra-curricular activities.



## Constituent Units of Bharati Vidyapeeth (Deemed to be University)

1. BVDU Medical College, Pune.
2. BVDU Dental College & Hospital, Pune
3. BVDU College of Ayurved, Pune
4. BVDU Homoeopathic Medical College, Pune
5. BVDU College of Nursing, Pune
6. BVDU Yashwantrao Mohite College of Arts, Science & Commerce, Pune.
7. BVDU New Law College, Pune
8. BVDU Social Science Centre (M.S.W.), Pune
9. BVDU Yashwantrao Chavan Institute of Social Science Studies & Research, Pune.
10. BVDU Centre for Research & Development in Pharmaceutical Sciences & Applied Chemistry, Pune
11. BVDU College of Physical Education, Pune.
12. BVDU Institute of Environment Education & Research, Pune
13. BVDU Institute of Management & Entrepreneurship Development, Pune
14. BVDU Poona College of Pharmacy, Pune
15. BVDU College of Engineering, Pune
16. BVDU Interactive Research School in Health Affairs (IRSHA), Pune
17. BVDU Rajiv Gandhi Institute of Information Technology & Biotechnology, Pune
18. BVDU College of Architecture, Pune
19. BVDU Abhijit Kadam Institute of Management & Social Sciences, Solapur
20. BVDU Institute of Management, Kolhapur
21. BVDU Institute of Management & Rural Development Administration, Sangli
22. BVDU Institute of Management & Research, New Delhi
23. BVDU Institute of Hotel Management & Catering Technology, Pune
24. BVDU Yashwantrao Mohite Institute of Management, Karad
25. BVDU Medical College & Hospital, Sangli
26. BVDU Dental College & Hospital, Mumbai
27. BVDU Dental College & Hospital, Sangli
28. BVDU College of Nursing, Sangli
29. BVDU College of Nursing, Navi Mumbai





## Distinctive Features of Bharati Vidyapeeth (Deemed to be University)

### This University:

- The University offers 250+ programmes under 12 faculties.
- High quality all-around education with many students from all over India and 35 countries to pursue their studies.
- 24000+ students enrolled into various programmes offered by the University.
- Behind the reputation of the University are the solid credentials of accomplished and experienced 1700 + faculty members, imparting quality education.
- Excellent placement record for its students across faculties and has known industry endorsements for continuous industry institution interactions.
- Strong alumni network spread across the globe.
- Programmes are designed to enhance employability of students with focus on collaborative and experiential learning pedagogy.
- Entrepreneurship cell has been established to develop entrepreneurial skill and incubate innovative business ideas.
- University constantly encourages and facilitates its faculties to be actively engaged in academic research and publications besides their teaching assignments by establishing collaborative and interdisciplinary research links with industries and institutions around the world.
- All professional programmes are approved by respective Statutory Councils.
- As part of dissemination of knowledge, University organizes International and National Conferences, Seminars, Workshops etc, on recent and upcoming themes.
- Knowledge Resource Centre (Libraries) have an excellent collection of books, print journals, e-journals, and magazines etc. which are regularly being expanded by adding latest publications.
- Augmented infrastructural facilities including smart classrooms, tools for blended learning, laboratories equipped with latest technologies, free accessibility to Wi-Fi, lush green campuses, adequate recreational facilities, on campus residential accommodation etc.
- University is committed to engage for the welfare of the society through various schemes of outreach Programmes, field work and community engagement.

## University Achievements:

Accredited with 'A+' Grade (2017) by NAAC

'A' Grade University Status by MHRD, Govt. of India

Accredited (2004) & Reaccredited (2011) with 'A' Grade by NAAC

Category-I (Deemed to be University Grade) by University Grants Commission

Recognized under Section '12 B' of UGC Act (1956) by University Grants Commission

Ranked 76<sup>th</sup> among Top 100 Universities by NIRF 2022, MHRD Govt. of India

## Other Achievements of the University:



### NBA

- College of Engineering have been accredited with National Board of Accreditation for its 5 UG Programmes
- B.Pharm programme of Poona College of Pharmacy has been accredited with NBA



### NABH

- Bharati Hospital and Research Centre of Medical College has undergone assessments for full NABH accreditation.



### NABL

- Hospital Laboratories in Pathology, Microbiology and Biochemistry have been accredited
- with NABL
- Centre for food testing Laboratory



### FDA Approval

- NABH accreditation and FDA approval for Hospital Blood Bank, Safe-I accreditation of the NABH for Infectious diseases was also received.
- Blood Bank
- Public Testing Laboratory of Poona College of Pharmacy, Pune



## Bharati Vidyapeeth (Deemed to be University)

### **RAJIV GANDHI INSTITUTE OF IT AND BIOTECHNOLOGY**

The Institute was conceptualized in 2001 and acquired recognition by the University Grants Commission (UGC) in September 2002. The academic programme is aimed at generating competent work force for growing life sciences industry. The institute's activities focus on imparting education, training and research in the emerging important areas of biotechnology. A three year graduate course (B.Sc.) in biotechnology was introduced in 2003 and a post-graduate course (M.Sc.) in 2005. In 2010, a post graduate course in Bioinformatics (M.Sc. Bioinformatics) was introduced in the institute and M.Sc. Medical Biotechnology has been launched since 2012 with an aim to generate skilled manpower for inter disciplinary subject. The institute also conducts various extension activities such as training to students in tissue culture of important crop plants and supply of authentic plant material to farmers. Details of infrastructural facilities resources available and other activities conducted at the institute are available on its website.

**RGITBT is a proud recipient of the Grant of - Rs. 2.64 Cr. from DBT, New Delhi under the BUILDER scheme (Boost to Universities interdisciplinary life science Department for Education and Research)**

#### **Vision**

To make the institute a world class center of excellence in Biotech education and research

#### **Mission**

Social Transformation  
Through Dynamic Education

#### **Goal**

To generate professionally competent human resource in biotech to serve academia, research, agriculture, health and industry



**Courses offered at BVDU-RGIT&BT**

Course Name	Fees	Duration
	Regular Merit Category (per year)	
B.Sc.Biotechnology	Rs. 84,000/-	3 years
M.Sc.Biotechnology	Rs. 1,26,000/-	2 years
M.Sc.Medical Biotechnology	Rs. 1,26,000/-	2 years
M.Sc.Bioinformatics	Rs. 1,26,000/-	2 years
Advanced Diploma in Bioinformatics	Rs. 84,000/-	1 years
Certificate course in Plant Tissue Culture (PTC) and Micro - propagation	Rs. 25,000/-	6 months
Ph.D. Courses		

\*The expenses in connection with Books, Uniform, Printed Forms, University Examination Fees, Industrial visits, field Work, Summer Training, Specialized Training Modules, Special Assistance for Placement etc. will be borne by the student over and above the fees. It is desirable for every student to have their own laptop for the duration of the course.

**ATTRACTIONS TO CHOOSE RGIT-BT AS CENTRE FOR LEARNING**

- ▶ CBCS syllabus for upto date knowledge
- ▶ Highly qualified and experienced faculty in each department.
- ▶ Infrastructural facilities to run all academic programs.
- ▶ Knowledge and job-oriented syllabi, Subject-wise specialized faculty as per UGC norms.
- ▶ Digitalized library with internet connectivity.
- ▶ All classrooms are equipped with LCD projectors, smart boards connected to LAN, for simultaneous conduct of theory classes.
- ▶ Subject-wise separate UG and PG laboratories for different programs.
- ▶ Research laboratories focused for research in nutrigenomics, fermentation technology and herbal biotechnology etc.
- ▶ A/c auditorium with 140 seating capacity for seminars
- ▶ Conference / exhibition hall, administrative/ students' guidance office
- ▶ Practicals oriented for industrial applications to groom students for industry placement.
- ▶ Hands-on training for every student to work independently in laboratories to handle different research equipments & gain practical skills.
- ▶ Dedicated 125 kVA generator for uninterrupted power supply
- ▶ Poly-house and shade-net facility for hardening banana plants for training in plant tissue culture



## INFRASTRUCTURE:

A Spacious architecture built up in an area of 58,000 square ft. house five departments. Department of Microbial Biotechnology, Department of Biochemical Sciences, Department of Plant Biotechnology, Department of Cell and Molecular Biology and Department of Bioinformatics. Each department has well equipped laboratories to conduct practicals of graduate, post-graduate as well as research students. Adequate library facility with over 3000 books and number of periodicals is presently provided to students. Efforts are being made to avail latest knowledge in the form of periodicals and journals. Library is also equipped with internet searching facility and INFLIBNET Facility.

## COMPUTER FACILITY

A special emphasis is given to the computer training of the students. Modern computer laboratory equipped with bioinformatics software and Internet connectivity is developed. Use of computer at every step of learning and laboratory exercise is encouraged. Internet facility is provided to students to undertake literature survey and promote innovative ideas. Every class room is equipped with LCD projectors & Internet connection.

## INDUSTRY AND ACADEMIC INTERACTION

Bharati Vidyapeeth provides unique opportunity to work in collaboration with allied disciplines of Biotechnology such as Pharmacy, Ayurveda, Medicine, Environmental, Pure Science, Medicine, Dentistry etc. Collaborative research projects with college of Ayurveda, Pharmacy, Agriculture and Interactive Research School for Health Affairs (IRSHA) are conceived. The academic programme of Rajiv Gandhi Institute has a strong support of scientists from prestigious Institutes such as Interactive Research School of Health Affairs (IRSHA), Bharati Vidyapeeth and National Chemical Laboratory (NCL). Rajiv Gandhi Institute has signed MOU's & Jay Biotech for research & conducting workshops respectively.

## SCOPE OF BIOTECHNOLOGY

Biotechnology is an emerging inter disciplinary branch of science that applies the principles of biology and engineering and offers scientists all the background material, indispensable for the development of biotechnological processes and products. It also offers a unique collection of current information on all aspects in biotechnology research and genomics, bioinformatics, special processes, metabolism and legal, economic and ethical dimensions.

Advances in science and technology have transformed traditional biotechnology techniques, such as selective breeding, hybridization and mutagenesis, into modern ones such as recombinant DNA techniques and tissue culture. This transformation has opened the door to more varied applications in areas such as health care, the environment, forestry, industrial processes and others.

Discoveries in genetics have led to novel strategies for treating disease. Decades ago, scientists learned that DNA is mainly the archive of genetic information. Its orders are translated into action by segments of ribonucleic acid (RNA), which serve as the working blueprints for all proteins. Today, chemists are beginning to create valuable new drugs by fabricating "anti-sense" segments of RNA, whose sequence is the exact opposite of an unwanted sequence, to combine with certain existing strands of RNA and thus block the action of specific genes.

Agriculture clearly needs new and safer tools to manage a range of insects and plant diseases. Fortunately, the pesticide industry has discovered and brought to market some very effective, safer and selective biopesticides and closely related synthetic analogues. These "reduced risk" pesticides are key new tools for farmers. Within a few years, millions of farmers worldwide will use these biopesticides to reduce their reliance on risky, disruptive broad-spectrum insecticides.

Exciting prospects are likely to result from industrial-scale plant tissue culture. This may soon obviate the need for rearing whole plants in order to generate valuable commodities such as dyes, flavorings, drugs, and chemicals. Cloning techniques could prove to be the way to tackle some of the acute problems of reforestation in semi-desert areas. Plants grown from the cells of mature trees could greatly speed up the process. Combination of advantageous genes could bring about a new era in plant protection. The crop can be treated safely with more effective doses of weed killer, and it is also engineered to be less susceptible to insect damage.

**Collaborative activities: Research Institute**

- National center for Microbial Resource (NCMR) Pune
- BVDU-Medical College, Pune/ Sangli
- BVDU-College of Engineering
- BVDU College of Homeopathy, Pune
- BVDU-IRSHA, Pune
- BVDU- Dental College & Hospital, Pune

**Linkages with Research Institutes**

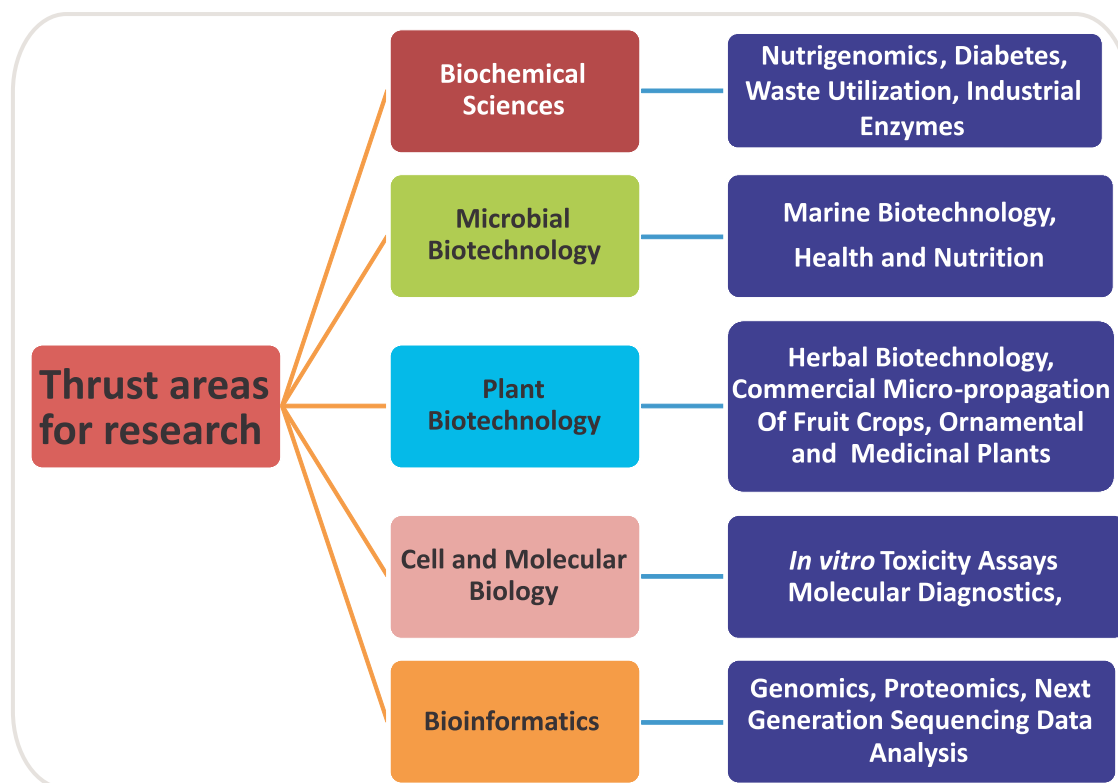
NCL(Pune), IISER(Pune), SPPU(Pune), ARI(Pune), VSI(Pune), HAFFKINE INSTITUTE (Mumbai) NIV Mumbai & ZYM Unani Pune

**Linkages with Industries for placement, internship, Research Entrepreneurship development and students training**

Serum Institute of India pvt. Ltd., ToxIndia, BEST, AGASTI, SIIMSAR, GREENVENTION BIOTECH, EdubioSkills, P<sup>2</sup>S foods, iSERA BIOLOGICAL, Fabgenics, Welnnovate Biosolutions, Jay Biotech (Pune), Inoplex, Vision Ecologica, Mothers recipe, MOCHEM (Latur).

**Student enrichment programmes conducted at RGITBT**

- Guest lectures from Biotech Industry and Academics.
- Film and documentaries shows related to Life science and current trends of Biotechnology as Saturday activity.
- Seminars and interactions with subject experts.
- Zoological and Botanical study tour and excursion.
- Biotechnology industry visit.
- Workshop for training in sophisticated Biotechnology equipments.
- Involvement of students in an entrepreneurial unit “Nature Tech” under earning while learning scheme for preparing kitchen and herbal kits, in vitro gift articles etc.



## Information of M.Sc. Biotechnology / M.Sc. Medical Biotechnology & M.Sc. Bioinformatics Courses

### Course structure of M.Sc. Degree Course in Bioinformatics Under Choice Based Credit System

#### SEMESTER I

Title	Credits	IA	Univ. Exam	Total Credits
Cell Biology	2	40	60	
Biochemistry	2	40	60	
Biomathematics	2	40	60	
Biostatistics	2	40	60	
C Programming and Data structure	3	40	60	
Biological Informatics	3	40	60	25
DBMS	3	40	60	
Cell Biology and Biochemistry Lab	2	40	60	
C Programming and Data Structure Lab	2	40	60	
Biological Informatics Lab	2	40	60	
DBMS lab	2	40	60	

#### SEMESTER II

Title	Credits	IA	Univ. Exam	Total Credits
Biostatistics II	2	40	60	
R and data analytics	3	40	60	
JAVA and BioJAVA Programming	3	40	60	
Genomics	2	40	60	
Proteomics	2	40	60	
Molecular Biology	2	40	60	28
Recombinant DNA Technology	2	40	60	
PERL/HTML Programming	2	40	60	
Biostatistics and Data Analysis lab	2	40	60	
JAVA and BioJAVA Programming lab	2	40	60	
Genomics and Proteomics Lab	2	40	60	
Mol. Bio and RDT lab	2	40	60	
PERL/HTML Programming Lab	2	40	60	



**SEMESTER III**

Title	Credits	IA	Univ. Exam	Total Credits
Scientific Writing	2	40	60	30
Chemoinformatics and Drug Designing	3	40	60	
Structural Biology and Molecular Modeling	3	40	60	
Python Programming	2	40	60	
Biological Data Mining	3	40	60	
Recent Trends in Bioinformatics	3	40	60	
Pharmacovigilance / Selenium	2	40	60	
System Biology/Artificial Intelligence	2	Continuous Assessment		
Python Programming lab	2	40	60	
Chemoinformatics and Drug Designing Lab	2	40	60	
Biological Data Mining lab	2	40	60	
Structural Biology and Molecular Modeling Lab	2	40	60	
Pharmacovigilance / Selenium lab	2	40	60	

**SEMESTER IV**

Title	Credits	IA	Univ. Exam	Total Credits
Research Project	20	40	60	20

Total Credits Offered: 25 C, Sem I+ 28 C, Sem II +30 C, Sem III+ 20C, Sem IV = 103

## Course structure of M.Sc. Degree Course in Biotechnology Under Choice Based Credit System- 2023

### SEMESTER I

Course No. & Description	Title	Credits	IA	Univ. Exam	Total Credits
<b>MBT 101</b> Core Course-Theory	Microbiology	3	40	60	27
<b>MBT 102</b> Core Course –Theory	Biochemistry	3	40	60	
<b>MBT 103</b> Core Course –Theory	Cell and Developmental Biology	3	40	60	
<b>MBT 104</b> Core Course –Theory	Molecular Biology	3	40	60	
<b>MBT 105</b> Core Course –Theory	Genetics	3	40	60	
<b>MBT 106</b> Core Course –Practical	Microbiology Lab	2	40	60	
<b>MBT 107</b> Core Course –Practical	Biochemistry Lab	2	40	60	
<b>MBT 108</b> Core Course –Practical	Molecular Biology Lab	2	40	60	
<b>MBT 109</b> Core Course –Practical	Cell and Developmental Biology Lab	2	40	60	
<b>MBT 110</b> Core Course –Practical	Genetics Lab	2	40	60	
<b>MBT 111</b> <b>EC Sem1-I</b>	Value added Course (Select 1)	2	50	Continuous Assessment	

#### Value added Course:

Mathematics for Biologists

Clinical Data management

\* Additional credit/s will be awarded to the student who will successfully complete SWAYAM NPTEL Course and receive the certificate.

**SEMESTER II**

Course No. & Description	Title	Credits	IA	Univ. Exam	Total Credits
<b>MBT 201</b> Core Course –Theory	Genetic Engineering	3	40	60	
<b>MBT 202</b> Core Course –Theory	Analytical Biotechnology	3	40	60	
<b>MBT 203</b> Core Course –Theory	Immunology	3	40	60	
<b>MBT 204</b> Core Course –Theory	Bioinformatics	3	40	60	
<b>MBT 205</b> Core Course - Theory	Nanobiotechnology	2	40	60	
<b>MBT 206</b> Core Course -Theory	Genetic Engineering Lab	2	20	30	
<b>MBT 207</b> Core Course –Practical	Analytical Biotechnology Lab	2	20	30	
<b>MBT 208</b> Core Course –Practical	Immunology Lab	2	20	30	
<b>MBT 209</b> Core Course - Practical	Bioinformatics Lab	2	20	30	
<b>MBT-210</b> Core Course - Practical	Nano-biotechnology Lab	2	20	30	
<b>MBT 211</b> <b>EC Sem 2-I</b>	Vocational Course (Select One)	2	50	Continuous Assessment	

Vocational Course:

IPR and Bioethics

Molecular Modeling and Drug designing

\* Additional credit/s will be awarded to the student who will successfully complete SWAYAM NPTEL Course and receive the certificate.

Internship /Project I of 4 credits needs to be done in Summer Break after Semester - II and will be considered for evaluation in Semester - IV.

**SEMESTER III**

Course No. & Description	Title	Credits	IA	Univ. Exam	Total Credits
<b>MBT 301</b> Core Course –Theory	Environmental Biotechnology	3	40	60	
<b>MBT 302</b> Core Course –Theory	Plant Biotechnology	3	40	60	
<b>MBT 303</b> Core Course –Theory	Animal Tissue culture	2	40	60	
<b>MBT 304</b> Core Course –Theory	Bioprocess Technology	3	40	60	
<b>MBT 305</b> Core Course-Theory	Biostatistics and Research Methodology	3	20	30	
<b>MBT 306</b> Core Course-Practical	Environmental Biotechnology Lab	2	20	30	
<b>MBT 307</b> Core Course-Practical	Tissue Culture Techniques Lab	3	20	30	
<b>MBT 308</b> Core Course-Practical	Bioprocess Technology Lab	2	20	30	23
<b>MBT 309</b> <b>EC Sem 3-I</b>	Skill Enhancement course (Select 1)	2	50	Continuous Assessment	

Skill Enhancement courses:

Biological Data Analysis

Biosimilars

Waste Management & Upcycling

\* Additional credit/s will be awarded to the student who will successfully complete SWAYAM NPTEL Course and receive the certificate

**SEMESTER IV**

Course No. & Description	Title	Credits	IA	Univ. Exam	Total Credits
<b>MBT 401</b> Core Course	Summer Internship/Research Project I	4	50	50	18
<b>MBT 401</b> Core Course	Internship/Research Project II	14	50	50	

Total Credits Offered: 27+26+23+18=94

## Course structure of M.Sc. Degree Course in Medical Biotechnology Under Choice Based Credit System- 2023

**SEMESTER I**

Course No. & Description	Title	Credits	IA	Univ. Exam	Total Credits
<b>MMBT 101</b> Core Course-Theory	Clinical Microbiology and systemic bacteriology	3	40	60	27
<b>MMBT 102</b> Core Course –Theory	Clinical Biochemistry	3	40	60	
<b>MMBT 103</b> Core Course –Theory	Cell and Developmental Biology	3	40	60	
<b>MMBT 104</b> Core Course –Theory	Molecular Biology	3	40	60	
<b>MMBT 105</b> Core Course –Theory	Human Genetics	3	40	60	
<b>MMBT 106</b> Core Course –Practical	Clinical Microbiology Lab	2	20	30	
<b>MMBT 107</b> Core Course –Practical	Clinical Biochemistry Lab	2	20	30	
<b>MMBT 108</b> Core Course –Practical	Molecular Biology Lab	2	20	30	
<b>MMBT 109</b> Core Course –Practical	Cell and Developmental Biology Lab	2	20	30	
<b>MMBT 110</b> Core Course –Practical	Genetics Lab	2	20	30	
<b>MMBT 111</b> EC Sem I	Value added Course (Select 1)	2	50	Continuous Assessment	

Value added Course:

Mathematics for Biologists

Clinical Data management

\* Additional credit/s will be awarded to the student who will successfully complete SWAYAM NPTEL Course and receive the certificate.

**SEMESTER II**

Description	Title	Credits	IA	Univ. Exam	Total Credits
<b>MMBT 201</b> Core Course –Theory	Recombinant Therapeutics and Molecular Diagnostics	3	40	60	26
<b>MMBT 202</b> Core Course –Theory	Analytical Biotechnology	3	40	60	
<b>MMBT 203</b> Core Course –Theory	Immunology and Hematology	3	40	60	
<b>MMBT 204</b> Core Course –Theory	Bioinformatics	3	40	60	
<b>MMBT 205</b> Core Course - Theory	Human Physiology	2	20	30	
<b>MMBT 206</b> Core Course –Practical	Recombinant Therapeutics Lab	2	20	30	
<b>MMBT 207</b> Core Course –Practical	Analytical Biotechnology Lab	2	20	30	
<b>MMBT 208</b> Core Course - Practical	Immunology and hematology Lab	2	20	30	
<b>MMBT 209</b> Core Course - Practical	Bioinformatics Lab	2	20	30	
<b>MMBT 210</b> Core Course - Practical	Nanobiotechnology Lab	2	20	30	
<b>MMBT 211</b> <b>EC Sem 2</b>	Vocational Course (Select One)	2	50	Continuous Assessment	

Vocational Course:

IPR and Bioethics

Nanobiotechnology

Molecular Modeling and Drug designing

- \* Additional credit/s will be awarded to the student who will successfully complete SWAYAM NPTEL Course and receive the certificate.
- \* Internship /Project I of 4 credits needs to be done in Summer Break after Semester - II and will be considered for evaluation in Semester - IV.

**SEMESTER III**

Course No. & Description	Title	Credits	IA	Univ. Exam	Total Credits
<b>MMBT 301</b> Core Course –Theory	Pharmacology & Toxicology	3	40	60	
<b>MMBT 302</b> Core Course –Theory	Animal Tissue culture and Stem cell Biology	3	40	60	
<b>MMBT 303</b> Core Course –Theory	Disease biology	3	40	60	
<b>MMBT 304</b> Core Course-Theory	Drug Discovery and development	2	20	30	
<b>MMBT 305</b> Core Course-Theory	Biostatistics and Research Methodology	3	40	60	
<b>MMBT 306</b> Core Course-Practical	Pharmacology & Toxicology Lab	2	20	30	
<b>MMBT 307</b> Core Course-Practical	Animal Tissue culture and Stem cell Biology Lab	3	40	60	
<b>MMBT 308</b> Core Course-Practical	Computational Drug design Lab	2	20	30	
<b>MMBT 309</b> <b>EC Sem 3</b>	Skill Enhancement course (Select One)	2	20	30	23

Skill Enhancement courses:

Biological Data Analysis

Biosimilars

Waste Management & Upcycling

\* Additional credit/s will be awarded to the student who will successfully complete SWAYAM NPTEL Course and receive the certificate.

Description	Title	Credits	IA	Univ. Exam	Total Credits
<b>MBT 401</b> Core Course	Summer Internship/Research Project I	4	50	50	18
<b>MBT 401</b> Core Course	Internship/Research Project II	14	50	50	

Total Credits Offered: 27+26+23+18=94

### RGIT&BT Placement Information 2022

Sr.No.	Name of the Industry	Number of students placed
1	Reliance life sciences Mumbai	16
2	Springer Nature	14
3	Serum Institute of India	04
4	Eurofins	01
5	NIIH Mumbai	01
6	TCS	02
7	Tech care medical services Pune	03
8	Zydus research center	01
9	Puthnu-Biotechnologist	02
10	Future Biopant	01
11	Bioconbengluru	01
12	Medgenome	01
13	NCL	01
14	ICMR	01
15	National institute of Pathology	01
16	GRG Healthcare	01
17	Lupin	02
18	CLARIO	01
19	Circulant software	01



## PROCEDURE AND RULES FOR ADMISSION

### 1. GENERAL

The information and the rules given here in are applicable for admissions to the first year of **two** years full time (**M. Sc. Biotechnology**) / **Medical Biotechnology** / **Bioinformatics post graduate degree programme** of Bharati Vidyapeeth (Deemed to be University), Pune.

The seats will be filled on merit, based on their performance in **BV-MBT-2023** computer centre based entrance test", conducted by Bharati Vidyapeeth (Deemed to be University) at the designated centers.

### INTAKE CAPACITY:

Course	M. Sc. Biotechnology	M. Sc. Medical Biotechnology	M. Sc. Bioinformatics
Total Seats	60	25	25

#### Note :

Out of the sanctioned intake, in each course 15% seats are reserved for Foreign / N.R.I. / P.I.O. /OCI/ Institutional Quota Merit Category. Candidates desirous of getting admission under the Foreign / N.R.I. / P.I.O. /OCI/ Institutional Quota Merit category will have to apply separately on a prescribed application form. **The application form will be available at the office of The Registrar, Bharati Vidyapeeth (Deemed to be University), Bharati Vidyapeeth Bhavan, L.B.S. Marg, Pune-30. The form fee for this category is Rs. 1,000/- (non refundable).** Seats remaining vacant after allotment to Foreign / NRI / P.I.O./ OCI Students (based on Merit), will be allotted to Indian students under Institutional Quota on the basis of merit based on the marks obtained by them in **BV-MBT-2023** The last date for submission of form to this category at the above mentioned address is **21<sup>st</sup> June 2023 before 5.00 p.m.**

All the candidates seeking admissions will have to appear for computer centre based entrance test **BV-MBT-2023** conducted by Bharati Vidyapeeth (Deemed to be University), Pune for **M. Sc. Biotechnology**) / **Medical Biotechnology** / **Bioinformatics** respectively. All candidates will have to apply online & fill the prescribed online application form at the website : [www.bvuniversity.edu.in](http://www.bvuniversity.edu.in)

### 2 ELIGIBILITY

- 2.1 The candidate must be an Indian National.
- 2.2 **For M.Sc. Biotechnology** : The candidate should have passed B.Sc. from any recognised university or its equivalent examination in any of the subjects, Biotechnology /Bioinformatics/ Microbiology / Biochemistry / Agriculture / Life Sciences / Chemistry /Zoology / Botany with minimum 50% aggregate in the respective subjects. (45% in case of SC / ST).
- 2.3 **For M.Sc. Medical Biotechnology** : The candidate should have passed B.Sc. from any recognized university or its equivalent examination in any of the subjects, Biotechnology / Biochemistry / Zoology / Microbiology /Botany / Chemistry /Pharmacy/Medicine including homeopathy and Ayurveda/ Veterinary science with minimum 50% (45% in case of SC / ST) aggregate marks in graduation.
- 2.4 **For M.Sc. Bioinformatics:** The candidate should have passed B.Sc. Bachelor's degree in any discipline of science & technology with minimum 50% (45% in case of SC / ST) aggregate marks from any recognized university.

### 3. BASIS OF SELECTION FOR ADMISSION

- 3.1 A Candidate desirous of seeking admission to **M. Sc. Biotechnology/M. Sc. Medical Biotechnology / M.Sc. Bioinformatics Programme** should fulfill the minimum eligibility condition as stated in point no. 3 above, and will be offered a seat based solely on the merit obtained at the all India entrance test **BV-MBT-2023** conducted by Bharati Vidyapeeth (Deemed to be University), Pune.
- 3.2 He / She must have appeared for the **BV-MBT-2023** computer centre based entrance test, conducted by Bharati Vidyapeeth (Deemed to be University), Pune at designated centres.
- 3.3 The Candidate shall be offered admission on the basis of his/her rank in the final merit list and availability of the seats for a particular programme at the time of counseling and admission in the concerned Institute. Mere appearance in the computer centre based entrance test and inclusion of name in the merit list does not confer any automatic rights to secure admission to the programme offered by the institute. The selection and admission to the programme is subject to fulfilling the eligibility criteria.
- 3.4 In case two or more candidates obtaining equal marks in the **BV-MBT-2023** the inter-se-merit of such candidates shall be determined in order of preference as under:
  1. Candidate obtaining higher marks in Graduation, if equal
  2. Candidate obtaining higher marks in 12th standard examination, if equal
  3. In case of tie at this level, computerised random selection of candidate will be carried out.

### 4. NATURE OF COMPUTER CENTRE BASED ENTRANCE TEST BV-MBT-2023

- 4.1 The **BV-MBT-2023** is a computer centre based entrance test for admission to **M. Sc. Biotechnology / M. Sc. Medical Biotechnology / M. Sc. Bioinformatics** Programme. It will be of 200 marks and shall be of 180 minutes duration.

The **BV-MBT-2023** will consists of one question paper, set in English and will contain 100 multiple choice objective-type questions. These questions will be based on the syllabus mentioned in **Annexure III**. Equal weightage will be given for all subjects prescribed in the syllabus. It consists of 100 multiple choice questions, one mark each with four alternatives, with only one correct or most appropriate answer. One Mark will be awarded for each correct answer. There is no negative marking.

**Details regarding general instructions, terms and conditions of the computer center based entrance test mode, syllabus & schedule, entrance test centers, application procedure, Instructions regarding center based entrance test etc., are available on website. Please visit [www.bvuniversity.edu.in](http://www.bvuniversity.edu.in) for more details.**

### 5. ENTRANCE TEST FEE:

#### 5.1 Entrance test fee: Rs 1,700 /- (Non Refundable)

- 5.2 The computer center based entrance test fee shall be paid through payment gateway using internet banking mode or through debit/credit card/UPI. Service charges and other taxes for transaction as applicable by bank has to be paid by the applicant.
- 5.3 The computer center based entrance test fee, once paid, will not be refunded under any circumstances. Candidates who remain absent for the computer center based entrance test will forfeit their computer center based entrance test fee.

## 6. DECLARATION OF RESULT:

A combined merit list will be declared for candidates registered for **M.Sc. Biotechnology** based on the computer center based entrance test (based on 200 marks), will be notified at the website. Please visit [www.bvuniversity.edu.in](http://www.bvuniversity.edu.in) for more details.

Separate merit list will be prepared for regular category and Foreign/NRI/PIO/OCI/Institutional Quota Merit Category.

The merit list of **BV-MBT-2023** entrance test will be displayed on its website [www.bvuniversity.edu.in](http://www.bvuniversity.edu.in)

It is not possible to send individual invitation for counselling to the candidates. **It shall be the responsibility of the individual candidate to see their own merit number and appear for the counselling at the centre of his/her choice as per schedule will be notified at the website.**

## 7. COUNSELING AND SPOT ADMISSIONS:

**7.1** The schedule and venue of counselling and on the spot admission session will be notified at the website. Please visit [www.bvuniversity.edu.in](http://www.bvuniversity.edu.in) for more details.

**FAILURE TO REPORT FOR COUNSELLING ON THE SCHEDULED DATE AND TIME WILL RESULT IN INSTANTANEOUS CANCELLATION OF A CLAIM OF THE CANDIDATE TO THE SEAT.**

The candidate must note that appearance for the computer center based entrance test and inclusion of name in the merit list does not necessarily mean that he/she will get admission to the institute & programme. The admission will depend upon the availability of seats to the particular programme and institute at the time of his counselling.

It shall be candidates responsibility to see the result computer center based entrance test and confirm their merit no. The candidate should remain present for counselling as per the schedule **notified at the website..**

Individual counselling letters are not going to be sent. The candidate should attend counselling & on the spot admissions on their own as per the schedule **notified at the website.** The candidate should bring along with them proof of having appeared for the computer center based entrance test such as Admit Card or photo copy of application form / Demand Draft etc.

The candidate will be offered a seat in the institute of their choice and programme as per the combined merit list prepared by Bharati Vidyapeeth (Deemed to be University), Pune for all the institutes and all the programmes. The candidate will be called for counselling as per their merit number and will be offered a seat as per availability of the seat in the particular institute and particular programme.

If any candidate finds it impossible to be physically present for the counselling due to unavoidable circumstances, he/she may authorise any other responsible individual to represent him/her at the counselling. This representative must carry with him/her the letter of authorization in the format given in **ANNEXURE-I**, as well as all the documents listed in 7.2. **If the candidate or his representative fails to report for the counselling on the date and the time mentioned in the schedule of counseling, his/her claim for admission to any of the programme will be forfeited.** The choice of programme made by the candidates / his / her representative will be final and binding and will not be ordinarily altered later.

**7.2** The following certificates in original along with self-attested two copies each of the same are to be submitted at the time of counselling and on the spot admission.

- (a) For a Proof of date of Birth : SSC Certificate or School/College Leaving
- (b) Certificate of Domicile/Nationality Certificate
- (c) Statement of marks of B.Sc. examination (All three years)
- (d) Transfer Certificate from the Institution in which you had studied last.
- (e) Migration Certificate
- (f) Character Certificate from a responsible person.
- (g) Certificate of Medical Fitness.
- (h) Gap Certificate (If applicable)
- (i) Six recent passport-size photographs with your names written on backside.
- (j) Self attested copies of any one of the authorized photo IDs (must be original, valid and non-expired): Aadhaar Card /PAN for proof of permanent address.
- (k) Caste Certificate (for SC/ST only)
- (l) Caste Validity Certificate (for SC/ST only)

- 7.3 After scrutiny of their Certificates, the candidates are offered provisional admission according to their rank, availability of seats and payment of fees. Admissions to **M.Sc. Biotechnology** will be confirmed subject to
- i) Payment of fees in full on the day of admission round
  - ii) Eligibility certificate from university

## 8. FEE STRUCTURE for 2023-2024 per annum only :

Programme	Regular Merit Category	Institutional Quota Merit Category	Foreign /NRI/PIO/ OCI Merit Category
M. Sc Biotechnology	₹ 1,26,000/-	₹ 1,83,750/-	US\$ 5000
M. Sc Bioinformatics	₹ 1,26,000/-	₹ 1,83,750/-	US\$ 5000
M. Sc Medical Biotechnology	₹ 1,26,000/-	₹ 1,83,750/-	US\$ 5000

**\*Note :** The above fees are per annum. The Fees shall be revised upwards @ 5% per annum.

### Mode of Payment of Fees shall be as given below

The fee is to be paid either through online mode or Bank Draft of any Nationalized bank drawn in the name of "The Principal, RGITBT, BVDU, Pune". payable at Pune". The details of payment through online mode will be informed.

At the time of admission a candidate has to pay library deposit. This deposit shall be refunded upon completion of the course.

If a candidate fails to confirm admission given to him/her, the same shall stand cancelled and the resultant vacancy will be offered to the next eligible candidate from the list. However, if candidate is unable to report in person, he /she can depute a representative with an authority letter signed by the candidate (**Annexure I** appended in this brochure) along with requisite documents under 7.2 above and Demand Draft of fees.

There are a few seats available in the hostel which will be allotted on first come first served basis.

Those who are desirous of getting admission to the hostel will be required to pay the entire amount of rent for the year as well as the mess charges for the entire academic year at the time of admission only. The details of hostel fees will be given in counselling letter. The payment for the hostels should be made by separate Demand Draft.

The date and commencement of the programme and detailed time table will be communicated to the candidate by the respective institute.

### 9. REFUND OF FEE:

The cancellation of admission and refund of fees will be as per the UGC guidelines issued by UGC from time to time.

### 10. CONDUCT AND DISCIPLINE:

If any student is found indulging in anti-national activities, or in activities that run contrary to the letter and spirit of the provisions of Acts and Laws enforced by the Government, or any activity that causes his/her behavior to be contrary to rules of discipline, will be liable to be expelled from the institute forthwith without any notice by the Principal of the institute.

If any of the statements made in application form or any information supplied by the candidate in connection with his/her admission is, at any time, found to be false or incorrect and willful suppression of facts, his/her admission will be cancelled forth with. The fees will be forfeited and he/she may be expelled from the institute by the Principal and prosecuted, if deemed necessary.

Each of the candidates seeking admission in the institute is required to give the following undertaking at the time of admission:-

- A) " I have read all the Rules of Admission for the current year and after fully understanding these rules, I have filled in this application form for admission for the current year.
- B) The information given by me in my application is true to the best of my knowledge and belief.
- C) I have not been debarred from appearing at any examination conducted by any Government constituted or Statuary autonomous examination authority in India.
- D) I fully understand that the Principal of the institute will have right to expel, rusticate me from the institute for any infringement of the Rules of good conduct and discipline in general and particularly the ones referred to above and the rules of good conduct and discipline prescribed by the institute / University and in the undertaking given above."

### 11. MISCELLANEOUS:

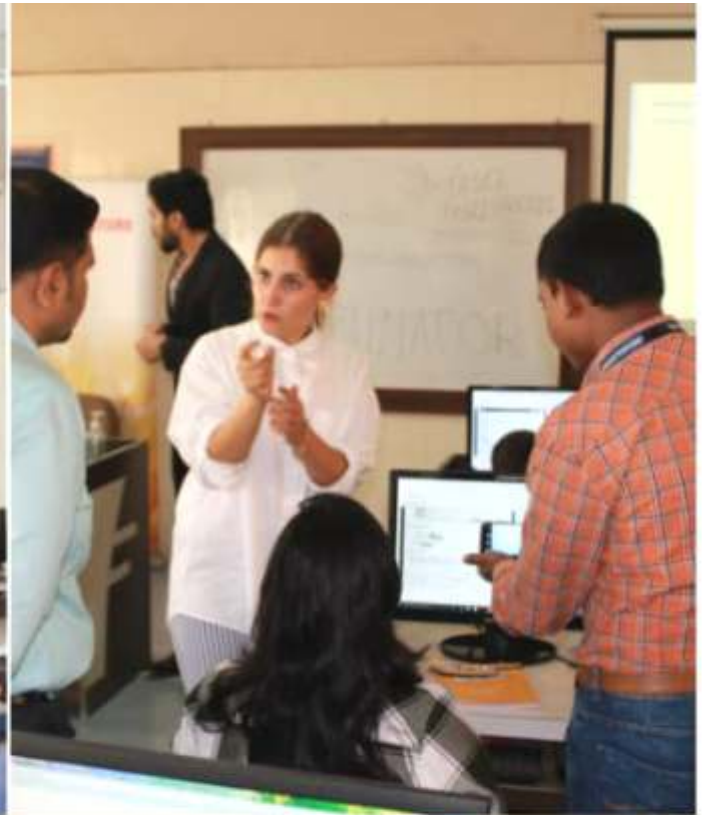
- 11.1 The candidates are informed that the medium of instruction, for all programmes is English.
- 11.2 At the time of seeking admissions, a candidate will be provisionally admitted to Programme at the Institute subject to the production of the Provisional Eligibility Certificate from the University.
- 11.3 The Institution shall have the right to satisfy about the conduct and character of a candidate by verifying antecedents of a candidate through the appropriate police-authority, before admitting him/her to the institute.
- 11.4 The Attention of the candidates is particularly invited to the provisions of rules regarding the eligibility of candidates for admission to the **M.Sc.Biotechnology-2023** Programme. If at any stage it is found that a candidate is not eligible either for admission to **M.Sc.Biotechnology-2023** Programme, his/her candidature and admission even if granted provisionally will be cancelled forthwith.
- 11.5 Differences of opinion and disputes arising in the interpretation and implementation of the clauses in this Brochure, if any, will be referred to the Vice-Chancellor of the Bharati Vidyapeeth (Deemed to be University),Pune and his decision shall be final and binding on all the concerned.











## Testimonials (M.Sc)



**Dr. Remya Nair** (MSc Biotechnology and Ph.D. Biotechnology)  
Post Doctoral Fellow, Winship Cancer Institute, Emory University, Atlanta, Georgia, USA

I have pursued my Masters and Ph.D. in Biotechnology from RGITBT, BVP. The curriculum in RGITBT prepared me to accomplish my career goals and become an enthusiastic scientist. The faculty are true advisors and have really mentored me throughout my educational journey. It has been a privilege to be part of this institute.



**Mitali Rane** (MSc Biotechnology)

The best institute if you really want to pursue your career in the field of biotechnology. Best teaching staff with all high tech lab facilities.



**Radhu Ladani** MSc Bioinformatics

I received my Master's degree in Bioinformatics from RGITBT. This institute has provided the best learning and research facilities in the field of bioinformatics. This department's entire faculty is excellent and specialists in their respective fields. Throughout my time there, I received wonderful direction and assistance. I will always appreciate the memories I made during my college years.



**Rudraksh Madkaikar** (M.Sc. biotechnology)  
Senior Executive in MSAT department at Lupin Biotech, Pune

I received my Master's degree in Bioinformatics from RGITBT. This institute has provided the best learning and research facilities in the field of bioinformatics. This department's entire faculty is excellent and specialists in their respective fields. Throughout my time there, I received wonderful direction and assistance. I will always appreciate the memories I made during my college years.

## Testimonials (M.Sc)



**Yash Dadhich** (M.Sc. biotechnology)  
Officer at Serum Institute of India

My time at RGI has helped me shape my vision, insights filled with wisdom from my teachers and mentors illuminate my path and motivate me.



**Samantha Nareshsharma** (Medical biotechnology)

It was a nice informative journey. The teachers have always supported and guided us towards what's right for our future. Even during the pandemic there were a few rough patches but we all with each other's cooperation overcame them all.



**Pragati Salunkhe** M.Sc. Biotechnology  
Working at Reliance Life sciences

RGITBT has given me wide academic and practical exposure. The learning from RGITBT is helping me while working in Industry.

## IMPORTANT NOTICE

The students and the parents will have to submit the printouts of antiragging undertaking online on the following websites

website 1: [www.antiragging.in](http://www.antiragging.in)

2: [www.amanmovement.org](http://www.amanmovement.org)

This has to be submitted immediately after the conformation of the admission.

**Note :**

As per the directions of Hon'ble Supreme Court of India Order No. SLP(C) No. 24295/2004 and SLP No. 143656/2005, WP (C) No. 173/2006 and SLP(C) No. 24296-24299/2004 all the students are hereby informed the following.

"If any incidents of ragging comes to the notice of the authority, the concerned students shall be given liberty to explain and if his explanation is not found satisfactory the authority would expel him from the institution."

All the students should note the above directives from the Supreme Court.

Registrar  
Bharati Vidyapeeth  
(Deemed to be University)

## AUTHORIZATION FOR REPRESENTATIVE

I, ....., son /daughter of  
 ....., being unable to attend the counseling session for  
 admission to the **M.Sc.Biotechnology/ M.Sc.Medical Biotechnology/ M.Sc.Bioinformatics** programme at  
 Bharati Vidyapeeth (Deemed to be University) on ..... hereby authorize.....  
 ..... son/daughter of .....  
 whose photograph is affixed below and who will sign as shown below, to represent me at the counseling and on-the-  
 spot-admission. I hereby declare that the choice of programme made by this authorised representative will be  
 irrevocable and that it will be final and binding on me. This authorised representative will present all the necessary  
 documents, pay the appropriate fees and complete all the necessary formalities on my behalf.

Name of the candidate : \_\_\_\_\_

(IN CAPITAL LETTERS)

Seat No.(**BV-MBT- 2023**): \_\_\_\_\_

Place: \_\_\_\_\_

Date: \_\_\_\_\_

Reason for absence: \_\_\_\_\_

### Specimen signature of the Representative

A recent passport size  
 photograph of the  
 representative should  
 be affixed here.

### Signature of the Candidate

A recent passport size  
 photograph of the  
 Candidate should  
 be affixed here.

**Medical Fitness**

A candidate must be medically fit to undergo the professional programme applied for. The medical fitness must be certified by a Registered Medical Practitioner in the prescribed proforma, as given below on a Letterhead :

**Certificate of medical fitness**

This is to certify that I have conducted clinical examination of

Mr./Ms. ....

who is desirous of admission to Health Sciences programme

He/She has not given any personal history of any disease incapacitating him/her to undergo the professional course. Also, on clinical examination it has been found that he/she is medically fit to undergo the professional course.

Certified further, that he/she has not shown any evidence of major defects of posture, locomotion, vision, hearing or any other systemic disorder.

Though, following deviations have been revealed, in my opinion, these are not impediments to pursue a career in M. Sc. Biotechnology

- 1. ....
- 2. ....
- 3. ....

Address of the Registered Medical Practitioner Signature :

Name :

Registration No. :

Seal of Registered Medical Practitioner

Date: / /20

## SYLLABUS FOR ENTRANCE EXAMINATION MBT-2023

Students appearing for the entrance examination for admission to M.Sc. Biotechnology/M.Sc. Medical Biotechnology/M.Sc. Bioinformatics, should be thorough with the syllabus studied at Bachelor's level. The syllabus given below may be followed as a general guideline for the entrance test. A brief outline of the subject-wise topics is as follows:

### BOTANY :

Botanical Nomenclature; Classification; Taxonomy; Plant development; Embryogenesis; Types of plant reproduction; Methods of plant improvement; Plant cell biology; Plant genetics; Mutations and Polyploidy; Mendel's experiments and principles of inheritance; Multiple allelism; Quantitative Genetics; Linkage and recombination; Cytoplasmic inheritance; Alterations in genetic make-up: Change at genetic level and in chromosome structure; General account of plant pathogens; Pathogen attack and defense mechanism; Plant disease epidemiology; Plant disease management; Principles of plant protection; Molecular plant pathology; Air-borne biological materials; Analysis of aerospora; Plant genomes; Plant genetic engineering; Plant tissue culture; Fermentation technology; Bio-fuels.

### CELL BIOLOGY & MOLECULAR BIOLOGY

Classification of animals, invertebrates and vertebrates

Structure of prokaryotic and eukaryotic cell, cell organelles, membrane structure and function, cytoskeleton, cell cycle, nucleic acids properties and functions, genetic code, replication, Transcription, Translation; Genetic code; DNA damage and repair. Recombinant DNA technology and Molecular Biology techniques:- Dot-blot hybridization, PCR, Finger printing RFLP, Genome mapping, in-situ hybridization; Animal and plant cell culture:- Techniques and applications; Vaccines; Media for industrial fermentations; Strain improvement; Recovery and purification of fermentation products; Different types of bioreactors; Bio-inoculants; Fermentation processes.

### BIOCHEMISTRY :

Compounds of carbon; Functional groups and their chemistry; Macromolecules:-carbohydrates, lipids, proteins; Enzymes; Vitamins; Concept of molecular weight, molecular mass, their related units; Standard solutions:- Normality, Molarity, pH-calculations; Buffers; Water; Osmosis; Osmotic pressure; Hypertonic-hypotonic-Isotonic solutions; Density gradient; Basics of plant and animal cell:-their structure-function relationships; Basic concepts related to instruments like pH meter, spectrophotometer; Concepts related to potential difference, potential gradient, electrochemical cell, emf.

### MICROBIOLOGY :

General properties and principles of classification of actinomycetes, bacteria, fungi and viruses; Bacterial structure: Nutrition, overview of metabolism, Virus diversity; Virus replication cycle; Medically important bacteria: Staphylococci, Enterobacteria, *Clostridium*, *Pseudomonas* etc ; Epidemiology and public health; Antimicrobials and their mode of action; Principles of microscopy : Types of Microscopes: Bright field, Dark field, Phase contrast ; Antigen-antibody structure, functions and reactions; Innate and adaptive immunity; Organs and cells of immune system; Transformation; Transduction; Conjugation; Plasmids; Industrial Microbiology: Introduction to fermentation process; Preservation and importance of industrially important micro-organisms; Strain Improvement; Media for industrial fermentations; Inoculum development; Bioinoculants; Fermentor design; Instrumentation and control; Types of Bioreactors; Aeration and agitation; Recovery and purification of fermentation products; Effluent treatment; Recombinant DNA Technology: Basic principles of gene cloning; Vectors for gene cloning: plasmids and bacteriophages; DNA modification enzymes; Purification of DNA from living cells; Introduction of DNA into living cells; Techniques use in RDT; Cloning vectors for *E.coli*.

### BIOINFORMATICS:

Basic of Bioinformatics, Basic of Computer, Introduction to Programming Languages

# Bharati Vidyapeeth, Pune

Bharati Vidyapeeth Bhavan, Lal Bahadur Shastri Marg, Pune - 411 030.  
Phone : (020) 24325701, 24322279 Fax : (020) 24339121



**Dr. PATANGRAO KADAM** M.A., LL.B., Ph.D.

● Founder-Chancellor, Bharati Vidyapeeth & Bharati Vidyapeeth (Deemed to be University), Pune

## AT A GLANCE

### EDUCATIONAL CAMPUSES :

● Pune ● Navi Mumbai ● Navi Delhi ● Panchgani (Satara) ● Sangli ● Karad ● Kolhapur ● Solapur ● Jawhar ● Jat

### BHARATI VIDYAPEETH (DEEMED TO BE UNIVERSITY)

★ Accredited with 'A+' Grade (2017) by NAAC ★ ★ **Category-I** University Status by UGC ★

★ 'A' Grade University Status by MHRD, Govt. of India ★ ★ NIRF Ranking - **76** ★

● Medical College, Pune ● Dental College & Hospital, Pune ● College of Ayurved, Pune ● Homoeopathic Medical College, Pune ● College of Nursing, Pune ● Yashwantrao Mohite College of Arts, Science and Commerce, Pune ● New Law College, Pune ● Social Sciences Centre (M.S.W.), Pune ● Yashwantrao Chavan Institute of Social Science Studies & Research, Pune ● Research and Development Centre in Pharmaceutical Sciences & Applied Chemistry, Pune ● College of Physical Education, Pune ● Institute of Environment Education & Research, Pune ● College of Engineering, Pune ● Poona College of Pharmacy, Pune ● Institute of Management & Entrepreneurship Development, Pune. ● Rajiv Gandhi Institute of Information Technology & Bio-Technology, Pune ● Interactive Research School for Health Affairs, Pune. ● Medical College & Hospital, Sangli. ● Dental College & Hospital, Navi Mumbai. ● Institute of Management & Research, New Delhi; ● College of Architecture, Pune; ● Institute of Hotel Management & Catering Technology, Pune; ● Yashwantrao Mohite Institute of Management, Karad; ● Institute of Management, Kolhapur; ● Institute of Management & Rural Development Administration, Sangli. ● Abhijit Kadam Institute of Management and Social Sciences, Solapur. ● Dental College & Hospital, Sangli ● College of Nursing, Sangli ● College of Nursing, Navi Mumbai.

### FACULTIES / DISCIPLINES :

● Arts ● Science ● Commerce ● Engineering ● Medicine ● Dentistry ● Management ● Pharmaceutical Science ● Ayurved ● Homoeopathic ● Nursing ● Hotel Management ● Law ● Social Sciences ● Social Work ● Architecture ● Environmental Sciences ● Physical Education ● Kala (Art) ● Agriculture ● Biotechnology

### INSTITUTE BRANCHES :

● Research Institutes - 3 ● Colleges (including proposed 2) : 50 ● Technical Institutes : 8 ● Junior Colleges : 15 ● Primary Schools and High Schools (Marathi) : 40 ● Pre-Primary Schools and Primary Schools (English) : 20 ● Balvikas Mandir : 4 ● Public School : 1 ● Adivasi Vikas Ashram Shala : 1 ● I.T.I.(Girls) : 1 ● Other Sections : 17

### ASSOCIATE INSTITUTIONS :

● Bharati Vidyapeeth English-Maths Exam Department ● Bharati Vidyapeeth's Bharati Printing Press ● Bharati Sahakari Bank Ltd. ● Bharati Madhyawarti Sahakari Grahak Bhandar Ltd. ● Sonhira Sahakari Sakhar Karkhana Ltd., Wangi, Kadegaon, Dist. Sangli ● Sagarshwar Sahakari Soot Girni Ltd., Kadegaon, Dist. Sangli ● Krishna Verala Sahakari Soot Girni Ltd., Kundal-Palus, ● Sou. Vijaymala Patangrao Kadam Mahila Auodyogik Sahakari Santha, Kadegaon, Dist. Sangli ● Mahatma Gandhi Hospital & Research Centre ● Bharati Vidyapeeth Medical Foundation ● Bharati Hospital & Research Centre ● Eye Bank ● Mobile Health Care Unit & Ambulance ● Foundation for Rural Development ● Bharati Vidyapeeth Krida Pratishthan ● Bharati Vidyapeeth Kala Academy ● Sonhira Milk Producers and Allied Agro Co-op. Soc. Ltd., Kadegaon ● Sonhira Co-op. Poultry Society Ltd., Kadegaon, Dist. Sangli





**Rajiv Gandhi Institute of I. T. & Biotechnology**



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