PRAVARA INSTITUTE OF MEDICAL SCIENCES



(DEEMED TO BE UNIVERSITY)

College of Biosciences and Technology

(Formerly Centre for Biotechnology)

Loni- 413736, Dist. Ahilyanagar, Maharashtra, India NAAC Reaccredited with 'A' Grade (CGPA 3.17)

REGULATIONS GOVERNING THE TWO-YEAR

M.Sc. MEDICAL BIOTECHNOLOGY

PROGRAMME

AS PER

THE NATIONAL EDUCATION POLICY (NEP) - 2020

NCrF Level	Two-Year Programme	Duration	Credits Earned in that year	Total Credits Earned
6.0	PG Diploma Medical Biotechnology	1 st year (I-II Sem)	44	44
6.5	M.Sc. Medical Biotechnology	2 nd year (III-IV Sem)	44	88

Approved by Academic Council Resolution No: AC/2024(2)/D-16(iii); Dated: 12/08/2024

IMPLEMENTED FROM 2025-2026 A.Y.

Prayara Institute of Medical Sciences

(Deemed to be University)

University Established under section (3) of UGC Act, 1956. NAAC Acreditated with 'A' Grade (CGPA 3.17)

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■ Dr. Balasaheb Vikhe Patil Rural Medical College

Rural Dental College

■ Dr. APJ Abdul Kalam College of Physiotherapy

■ Smt. Sindhutai Eknathrao Vikhe Patil College of Nursing

■ Centre for Bio-Technology

School of Public Health and Social Medicine

Pravara Institute of Medical Sciences (Deemed to be University)

■ Dr. Vitthalrao Vikhe Patil Pravara Rural Hospital

Date:

Date: 18/10/2024

Ref. No.

Ref. No.: PIMS/R/2024/2011

NOTIFICATION No.: 86/2024

Subject: Notification regarding Conversion of curriculum and credit

framework for M. Sc. Medical Biotechnology.

Reference: Academic Council Meeting dated 12th August, 2024.

Pursuant to the Academic Council Resolution No. AC/2024(2)/D-16(iii), dated 12th August, 2024; it is to bring to the notice of all the concerned that the M.Sc. Medical Biotechnology Curriculum and Credit framework has been transformed as per National Education Policy (NEP) - 2020 from the AY 2025-2026.

The Director, College of Biosciences & Technology, Loni and Dean, Faculty of Allied Health Sciences are authorised to follow & implement the said revised Curriculum from the Academic Year 2025-26.

Copy for information:

1. Hon'ble President, PIMS (DU), Loni.

2. Hon'ble Dy. Director Administration, PIMS (DU), Loni 413736, Tal. Rahata

3. Hon'ble Vice-Chancellor, PIMS (DU), Loni.

Copy for information & necessary action to:

4. Director, College of Biosciences & Technology, Loni.

5. Dean, Faculty of Allied Health Sciences, PIMS (DU), Loni.

6. Controller of Examinations, PIMS (DU), Loni.

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Abbreviation

AC : Academic Council

AICET : All India Common Entrance Test

APP : Apprenticeship

BoAE : Board of Appointment of Examiners

BoE : Board of Examiners
BoM : Board of Management
BoS : Board of Studies

CBCS : Choice Based Credit System

CBT : College of Biosciences and Technology

CIA : Continuous Internal Assessment
CGPA : Cumulative Grade Point Average

COE : Controller of Examinations

CP : Credit Point

DSC : Discipline Specific Core

DSE : Discipline Specific Elective

DSP : Discipline Specific Practical

EC : Executive Council

FW : Field Work GP : Grade Point

HEI : Higher Education Institution

IN : Internship

INT : Internal Assessment

L : Lecture

MBT : Medical BiotechnologyMOOCs : Massive Open Online Courses

NCC : National Cadet Corps

NAAC : National Assessment and Accreditation Council

NEP : National Education Policy

NPTEL : National Programme on Technology Enhanced Learning

NSS : National Service Scheme

OJT : On Job Training

PIMS-DU: Pravara Institute of Medical Sciences – Deemed to be University

PRN : Permanent Registration Number

P : Practical PG : Postgraduate

PT : Part-time (not explicitly stated but contextually implied)

RP
Research Project
RM
Research Methodology
SEE
Semester End Examination
SGPA
Semester Grade Point Average

SWAYAM : Study Webs of Active—Learning for Young Aspiring Minds

T : Tutorial

UGC : University Grants Commission

UNI : University Examination

Regulations Governing the Two-Year Master's Degree Programmes at Pravara Institute of Medical Sciences (DU) as per the NEP-2020

Preamble:

PIMS-DU was established in September 2003. Since its inception, as per the provisions of the UGC regulations governing deemed to be universities, it has notified regulations for academic administrations. Besides, based on the needs, it has formulated and enacted its own regulations. Now it proposes to implement its own regulations governing the two-year Master's degree programmes based on National Educational Policy (NEP) - 2020.

UGC has mandated for the implementation of CBCS, SGPA and CGPA for PG programmes. This initiative is to offer number of course options of study – major (mandatory and electives), research methodology, on-job training/field project and research project. The guidelines call for Choice Based System, Semester Grade Point Average, Cumulative Grade Point Average Systems (CBCS-SGPA-CGPA). The Executive Council of PIMS-DU has passed a resolution to restructure existing courses in alignment with the NEP-2020. The PIMS-DU hereby prepared Regulations Governing the two-year Postgraduate (M. Sc) Medical Biotechnology Programme (I to IV Semesters).

The Salient Features of the both one- and two-year Postgraduate Programme

- (a) It is a Choice Based Credit System under Semester Scheme with SGPA and CGPA.
- (b) The relative importance of courses of study is measured in terms of Credits, Grade Points, and Letter Grades.
- (c) The programmes comprise courses such as major (mandatory (DSC and DSP) and electives (DSE)), research methodology (RM), on job training (Internship/Apprenticeship) (OJT) and research project (RP).
- (d) The programme permits entry and exit options during even semester based on the vacant seat available.
- (e) The students shall participate in on job training (Internship/Apprenticeship).
- (f) The candidate has the option to exit after the second semester of the programme and will be awarded a PG Diploma with the provision to re-enter to complete the degree.

- (g) The result shall be declared based on the aggregate percentage of marks obtained and the Cumulative Grade Point Average (CGPA) earned, either annually in case of exit option opted or at the end of the entire programme. There is a provision to transfer the credits earned by the candidate when transferring from one institution to another.
- (h) The programme permits the transfer of credits earned through SWAYAM/NPTEL/MOOCs, or other online platforms recognized by the University, UGC, or the Government of Maharashtra, subject to a maximum of 40% of the total programme credits.

1. Definitions:

- 1.1. **Board of Studies, Academic Council and Board of Management**: The academic bodies of the university maintaining standards of instruction, education and examination within the PIMS-DU.
- 1.2. **Academic Year**: Academic year is a period of two semesters (one odd + one even) depending on the structure of the academic programmes offered by a university.
- 1.3. **Masters/Postgraduate Degree:** A 2-year postgraduate "Master's Degree programme" offered and awarded by PIMS-DU through its constituent units from the respective faculty.
- 1.4. **BoE:** Board of Examiners of the University or Board of Examiners in a particular/group of subjects.
- 1.5. **BoS:** Board of Studies in a particular subject, or group of subjects.
- 1.6. **BoAE:** Board of Appointment of Examiners is a statutory academic body constituted by the University to recommend and approve the panel of examiners for various examinations in accordance with the University's examination ordinances and quality assurance standards.
- 1.7. **CBT:** College of Biosciences and Technology, a constitute unit of PIMS-DU.
- 1.8. **Committee:** A committee is constituted by the statutory authorities of PIMS-DU, such as the Executive Council (EC), Academic Council (AC), or Board of Studies (BoS) for the purpose of executing specific academic, administrative, or advisory functions in accordance with the rules, regulations, and policies.
- 1.9. **Department**: The Department of the concerned subject in the constituent College.

- 1.10. **Course**: Course is a logical and defined part of the programme, offered in the form of theory paper, practical, project work, on job training or any other form specified from time to time usually of 2 to 6 credits.
- 1.11. Fee: The tuition fee and others (if any) prescribed by PIMS-DU.
- 1.12. **Continuous Internal Assessment (CIA):** The tests and assignments conducted for a particular course during the semester for a specified marking system.
- 1.13. **Semester**: One half of an academic year consisting of 15-18 weeks of academic work equivalent to 90 actual teaching days.
- 1.14. **Semester End Examination (SEE):** The examination conducted after the completion of 90 teaching days, offered course-wise for a specified duration by PIMS-DU.
- 1.15. **Student**: An individual who has enrolled in PIMS-DU to pursue two-year Master's Degree Programme.
- 1.16. **University**: Pravara Institute of Medical Sciences Deemed to be University (PIMS-DU).
- 1.17. **Major Discipline:** Major discipline is the discipline or subject of main focus and the degree will be awarded in that discipline. Students must earn the prescribed number of credits through core courses in the major discipline.
- 1.18. **Lecture Courses:** Lecture courses that involve lectures delivered by experts or qualified professionals in a specific field of study, vocation, or professional practice.
- 1.19. **Tutorial Courses:** Tutorial courses involve problem-solving and discussions relating to a field or discipline under the guidance of qualified personnel in a field of learning, work/vocation, or professional practice.
- 1.20. **Practicum or Laboratory Work:** A course requiring students to participate in a project or practical or lab activity that applies previously learned/studied principles/theory related to the chosen field of learning, work/vocation, or professional practice under the supervision of an expert or qualified individual in the field of learning, work/vocation or professional practice.
- 1.21. Seminar: A course requiring students to participate in structured discussion/conversation or debate focused on assigned tasks/readings, current or historical events, or shared experiences guided or led by an expert or qualified personnel in a field of learning, work/vocation, or professional practice.

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- 1.22. **Field Practice/Projects:** Courses requiring students to participate in field-based learning/projects generally under the supervision of an expert of the given external entity.
- 1.23. **On Job Training (OJT):** is a form of practical training provided at the workplace to acquiring new competencies and skills needed for a job in a real, or close to real, working environment.
- 1.24. **Internship:** A course requiring students to participate in a professional activity or work experience with an entity external to the education institution such as government or private organizations, normally under the supervision of an expert of the given external entity to provide opportunities for students to actively engage in on-site experiential learning.
- 1.25. **Apprenticeship:** Apprenticeship is a structured program that combines on-the-job training with classroom instruction, allowing individuals (typically young people) to learn a trade or skill while working under the guidance of experienced professionals.
- 1.26. **One Credit**: One credit is equivalent to 15 hours of teaching (lecture or tutorial) or 30 hours of practical and 40-45 hours of field work/on job training (internship/ apprenticeship) per semester.
- 1.27. **Credit point:** A Grade point (GP) x 100 divided by maximum marks for the said course x number of credits of Course (T/P/FW) = (GP for a course will be multiplied by number of credits for the course).
- 1.28. **Grade point (GP):** A Grade Point (GP) is the numerical weight assigned to each letter grade on a 10-point scale. It is calculated as 10% of the marks obtained in a Theory/Practical (T/P) course, where the maximum marks are 100. The GP is not determined by normalization within a given range but is directly based on the actual marks obtained.
- 1.29. **Semester Grade Point Average (SGPA):** Total of all credit points of all the courses of a semester divided by total credits of the semester.
- 1.30. **Cumulative Grade Point Average (CGPA):** It is the aggregation of all the SGPA of a given programme. It can be calculated by adding the CPs of all courses and all the semesters of programme divided by total number of credits of the entire programme. It is equivalent to the addition of all the SGPA of IV semester and divided by marks of semester.

2. Title and Commencement:

- 2.1. These regulations shall be called "PIMS-DU regulations governing the two-year M.Sc Medical Biotechnology".
- 2.2. These regulations shall come into effect from the date of its assent by the Board of Studies, Academic Council and Executive Council with university vide Notification.
- 2.3. A student who has completed a 2-year (4-semester) master's degree Medical Biotechnology programme at the College of Biosciences and Technology of PIMS-DU by securing a minimum of 55% marks (50% marks in case of SC/ST) in aggregate or an equivalent grade on a point scale (wherever the grading system is followed) based on the category may seek admission to the Ph.D. Medical Biotechnology, in accordance with the UGC Minimum Standards and Procedures for Award of Ph.D. Degree Regulations 2022; Dated: 7th November 2022.

3. Eligibility and Admission Procedure:

3.1 Call for Applications:

- 1) The university shall issue a notification for admission to PG Programme through All India Common Entrance Test (AICET) conducted by Pravara Institute of Medical Sciences- DU, Loni or in accordance with the directions issued by the University Grants Commission (UGC) or resolutions passed by the Executive Council of PIMS (DU).
- 2) The academic year normally commences in the month of August every year.

3.2 Eligibility Conditions for Admission:

Level	Eligibility
Level 6.0	The students who have successfully completed three-year B. Sc degree/ Level 5.5 as per
	NEP-2020 in Biological/Life Sciences or relevant disciplines of this university or any
	other HEIs registered on Academic Bank of Credits Portal shall be eligible for admission.
	Additional details are provided in Section 9.
Level 6.5	Students who have successfully completed a four-year B.Sc. degree or a Level 6.0
	postgraduate or one year PG Diploma programme from this university or any other HEI
	registered on the Academic Bank of Credits (ABC) portal shall be eligible for admission.
	Additional details are provided in Section 9.

Pravara Institute of Medical Sciences- DU, Loni.

3.3 Admission Eligibility for Second and Subsequent Semesters:

3.3.1 Eligibility for Admission to Master's Degree:

- 1) A minimum attendance of 75% is mandatory for each semester and for each individual course in order to be eligible to appear for the Semester-End Examination (SEE). However, up to 20% attendance may be waived for students actively participating in co-curricular or extra-curricular activities such as NCC, NSS, sports, cultural events, study tours, seminars, etc., subject to prior written approval from the Director/Principal of the institution and the Vice-chancellor, obtained through the prescribed official channel.
- 2) Submission of an application by a candidate to appear for the examination without meeting the minimum 75% attendance requirement shall not confer eligibility for registration in subsequent semesters.
- 3) A candidate who has attained a minimum of 75% attendance and successfully completed the Continuous Internal Assessment (CIA), but fails to appear for the SEE, shall still be eligible to seek admission to the immediate higher semester.
- 4) A candidate who fails to meet the minimum 75% attendance requirement in even one course (subject/paper) shall be ineligible to appear for the University examination of that semester and must seek re-admission to the same semester in a subsequent academic year, in accordance with the university's regulations.
- 5) A carryover system shall be applicable to all Postgraduate (PG) programmes, allowing students to progress through the semesters irrespective of their examination outcomes, up to and including the fourth semester, provided that the requirement of 75% attendance is fulfilled in each semester.
- 6) For example, if a candidate appears for the SEE of the second semester but discontinues the third semester failing to meet both attendance and examination requirements and subsequently wishes to seek admission to the fourth semester, such a candidate shall not be permitted to enrol directly into the fourth semester. The candidate must re-register for the third semester in accordance with the university schedule.

3.3.2 Eligibility for Admission to Ph. D. Degree:

A candidate seeking admission to a Ph. D. degree in a specified field of learning shall have passed the relevant one/two-year Master's degree with minimum CGPA of 5.5 (5.0 in case of SC/ST) is eligible based on the category.

4. Programme Offered:

The PIMS-DU offers a two-year Master of Science (M.Sc.) programme in Medical Biotechnology. The programme incorporates a provision for entry and exit options. Candidates who choose to exit after successful completion of the first year and have secured a minimum of 44 credits shall be eligible for the award of a Postgraduate Diploma in Medical Biotechnology, subject to fulfillment of all academic and administrative requirements (if any).

5. Programme Structure and Credits:

A programme shall have the following components,

No	Courses	Catagory	Credit		
110		Category	1 st year	2 nd year	
1.	Discipline Specific Core (DSC)		16	16	
2.	Discipline Specific Elective (DSE)		8	8	
3.	Discipline Specific Practical (DSP)		12	10	
4.	Training/Apprenticeship)		4	-	
5.			4	-	
6.	Research Project (RP)		-	10	
	Total Credits	44	44		

6. Certification and Duration of the Programme:

- 6.1 The duration of the M.Sc. Medical Biotechnology programme shall be two academic years, comprising four semesters. Each semester shall consist of a minimum of 90 instructional days, typically spread over 15 to 18 weeks of academic engagement.
- 6.2 Students who choose to exit the programme shall be awarded a Postgraduate Diploma upon successful completion of the first year, provided they meet the prescribed credit and academic requirements.

7. Medium and Mode of Instruction, Programme Structure and Transactions:

- 7.1. The medium of instruction for all the courses shall be English.
- 7.2. A student must opt to write the answers in examination in English.
- 7.3. Answers written in illegible handwriting shall not be assessed.

- 7.4. The structure of the programme indicating the course code, title of the course, credits, total marks, minimum marks for passing and other details are given in the **Annexure 1-4**
- 7.5. The teaching-learning activities may include various components as specified by the Board of Studies (BoS) in accordance with the Regulations. These components may consist of lectures, tutorials (if any), practicals, demonstrations, online lectures delivered via platforms such as SWAYAM, NPTEL, and MOOCs, on-the-job training, study tours or fieldwork, projects, seminars, assignments, and any other activities as prescribed.

8. Preparation of Syllabi by the Board of Studies (BoS):

The Board of Studies (BoS) in Biotechnology at PIMS-DU shall formulate the syllabi for two-year M.Sc. Medical Biotechnology programmes in accordance with the structural format of these Regulations, which includes Course Code, Title of the Course, Credits, Content, Delivery Mode, Evaluation, and Award of GP/CP/SGPA/CGPA.

Any addition or deletion of units or topics within a course, without altering the course title or credit value, is considered a **minor revision** (less than 20%). Such minor revisions may be made once per year. A **major revision** of the syllabus may be proposed to the Board of Studies (BoS) only after two years of its implementation.

General Instruction for Board of Studies (BoS):

- 8.1. The Board of Studies (BoS) shall consider various aspects such as the course matrix, number of instructional hours, mode of instruction, allocation of marks, overall hours of study per course, and the need for continuity. They shall frame the syllabi for each course, comprising at least five units.
- 8.2. The BoS shall clearly specify the teaching-learning activities and the expected outcomes for each course.
- 8.3. The BoS shall prepare model question papers (**Annexure 6 and 7**), based on the accepted model for the programme, aligned with the course structure and matrix.
- 8.4. The BoS shall review the delivery of the syllabi in relation to the teaching-learning strategies and student performance. They shall analyze the results and submit evaluative reports to the University for necessary action periodically.
- 8.5. The University shall constitute regular Boards of Studies for the relevant subjects.

9. Entry and Exit Options:

Programme	Credits	Additional	Awarded	Entry/Exit	Re-entry to the
Exit	Required	Requirement	Qualification	Options	Programme
After 1st Year	44 Credits	-	PG Diploma	Entry/Exit	Within six years of exit
After 2 nd Year	88 Credits	-	PG Degree	Exit	-

Students who have completed their Postgraduate Diploma or the first year of an M.Sc. programme from other Higher Education Institutions (HEIs) are eligible for lateral entry, provided they have completed the prescribed number of credits. Such students must submit transcripts or grade cards, syllabus copies, educational certificates, and other relevant documents at the time of application. The submitted documents shall be subject to evaluation by the College for the purpose of admitting a student directly into the second year of the programme. If deemed necessary, a committee constituted by the Vice-Chancellor shall assess the equivalency of the courses based on the marks or credits earned at the previous institution. The committee may recommend additional courses to be undertaken by the candidate, which must be completed during the third semester. This lateral entry option shall be considered only if vacant seats are available and the programme pursued during the first year is equivalent to the one offered.

The entry and exit options available to students enrolled in the M.Sc programme shall be as follows:

1ST YEAR

Entry: The entry requirement for 1st year (Level 6) programme is three-year B. Sc degree/ Level 5.5 as per NEP-2020 in Biological/Life Sciences or relevant disciplines through PIMS-AICET-PG conducted by PIMS (DU) or in accordance with the directions issued by the University Grants Commission (UGC) or resolutions passed by the Executive Council of PIMS (DU).

Exit: A Postgraduate Diploma shall be awarded to a student who opts to exit the programme upon successful completion of the first year (Level 6). To be eligible for the Postgraduate Diploma, the student must have completed all prescribed courses, earning a minimum of 44 credits at Level 6.

2ND YEAR

Notification No: 86/2024;

Entry: An individual seeking admission into the second year of a postgraduate degree programme (Level 6.5) must have normally completed all academic requirements of Level 6 in a relevant discipline such as

Biotechnology, Medical Biotechnology, Molecular Biology, Genetics, Medical Microbiology, Biochemistry, Medical Biochemistry, Microbiology, Forensic Science, Biophysics, or any other closely related field within the broader domain of Medical Biotechnology. Admission into the second year shall be subject to the availability of vacant seats and the approved intake capacity of the college where admission is being sought.

Exit: Upon successful completion of the second year (Level 6.5), the student shall be awarded the degree of Master of Science (M.Sc.) in Medical Biotechnology.

10. Awarding PG Diploma, and PG Degree:

PG Diploma: Students who opt to exit after completion of the first year and have secured 44 credits shall be awarded a PG Diploma in Medical Biotechnology. These students are allowed to re-enter the degree programme within four years of exit to complete the degree programme.

PG Degree: A PG degree in the major discipline (Medical Biotechnology) shall be awarded to those who complete a two-year degree programme and have satisfied the credit requirements as given in table below.

		Minimum Credit Requirement					
No	Broad Category of Course	1-Y PG Di	ear ploma	2-Year PG Degree			
		I	II	III	IV		
1	Discipline Specific Core (DSC)	8	8	8	8		
2	Discipline Specific Practicals (DSP)	6	6	6	4		
3	Discipline Specific Elective (DSE)		4	4	4		
4	Research Methodology		-	-	-		
5	OJT (IN/Apprenticeship)/ Field Project	ı	4	ı	-		
6	Research Project	-	-	4	6		
		22	22	22	22		
	Total	44 44					
	Grand Total		8	38			

11. Attendance Required to Appear for Semester End Examinations (SEE):

- 11.1. A student must have a minimum attendance of 75% in the classes conducted for each prescribed course during the semester in order to be eligible to appear for the SEE.
- 11.2. Classes (theory, practicals, tutorial, field work, on job training etc.) conducted during a semester for all the prescribed courses of a given semester of a programme constitute the basis for calculating the minimum of 75% of attendance requirement.
- 11.3. A shortage of attendance up to a maximum of 20% may be condoned by the Vice-Chancellor, subject to valid reasons and appropriate justification. Grounds for condonation may include participation in National or State-level camps or events organized by the NCC or NSS, representation in National or State-level sports competitions, participation in other government-sponsored activities, or medical reasons certified by a District Surgeon or District Medical Officer. However, the student shall be required to attend special classes organized by the Department to compensate for the shortfall (20%) in attendance.
- 11.4. A student who fails to meet the minimum attendance requirement for a semester shall be required to repeat the entire semester as a regular student when it is next offered by the University in subsequent batches.
- 11.5. The University shall publish the academic and administrative calendar detailing the admission process, fee structure, teaching-learning activities, evaluation procedures, and other relevant aspects pertaining to the programme.

12. Curriculum:

- 12.1. The curriculum and the syllabus for the **full-time/regular** four semesters of study programme shall be as approved by the Academic Council of the University on the recommendations of Board of Studies and as may be modified from time to time.
- 12.2. The minimum credit requirement for the two-year M.Sc. Medical Biotechnology programme is 88 credits. Both the teaching-learning activities and assessments shall be designed to foster and motivate effective learning among students.

13. Credits:

- 13.1. The term 'credit' denotes the quantum of syllabus in various programmes expressed in terms of hours of study. It reflects the relative weightage assigned to courses based on their content and duration within the curriculum design.
- 13.2. The minimum credit requirement for the two-year M.Sc. Medical Biotechnology programme is 88 credits.
- 13.3. Credits shall be assigned on the basis of the Lectures (L), Practicals (P), Research Project (RP), Field Project (FP), On Job Training (OJT) and other form of learning in a 15-18-week schedule in a semester.

	Lecture (L)	Practical (P)	On Job Training/Internship /Field Work	Research Project (RP)
1 Credit	1 Hour	2 Hours	3 Hours	2 Hours
1 Credit	15 Hours	30 Hours	40-45 Hours	30 Hours

14. Credit, Units per Course and Structure of Syllabus:

For the postgraduate programme, each course shall be provided with a structured syllabus structured as follows:

Category	Credits	Syllabus Units
Discipline Specific Core (DSC)	4	Minimum 5
Discipline Specific Practical (DSP)	2-4	Minimum 15 Experiments
Discipline Specific Elective (DSE)	2-4	Minimum 5
Research Methodology (RM)	4	Minimum 5
Research Project (RP)	4 - 6	Individual Projects; Structured monitoring and assessment of CIA and SEE.
On Job Training (OJT)	4	Allowed to undertake the On Job Training outside the CBT for minimum 1 month/23 working days or as per regulation.

15. Course Code and Numbering Pattern:

The course code indicates the level, the department offering the course, the year of implementation, the course number, and course category. Each course shall be numbered according to the following format:

	M.Sc. Medical Biotechnology											
				C	Credits/Week				Hours / Semester			
No	Course Code	Category	Course Title	Lecture (L)	Tutorial (T)	Practicals/ Research Project	Credits (C)	Lecture / Tutorial	Practical	Total Hours		
1.	MBT 25101DSC	DSC	Cellular and Molecular Biology	4	ì	-	4	60	-	60		
2.	MBT 25102DSC	DSC	Physiology and Biomolecular Sciences	4	-	-	4	60	-	60		
3.	MBT 25101DSE-A		Fundamentals of Biotechnology									
	MBT 25101DSE-B		Industrial Biotechnology									
4.	MBT 25101DSE-C	DSE	Bioinstrumentation and Analytical Techniques	4		4	-	-	4	60	-	60
	MBT 25101DSE-D		Fundamentals of Computational Biology									
5.	MBT 25101RM	RM	Research Methodology	4	ı	-	4	60	-	60		
6.	MBT 25101DSP	DSP	Cellular and Molecular Biology	-	ı	2	2	•	60	60		
7.	MBT 25102DSP	DSP	Physiology and Biomolecular Sciences	-	1	4	4	-	120	120		
			Semester- I Total	16	-	6	22	240	180	420		

The above-mentioned ten-digit course code specifies the following details:

No	Code	Details
1.	MBT Denotes	Unique Three Digit Code program specific –Master's in Medical Biotechnology. M: Master's and BT: Biotechnology
2.	25	Year of Implementation
3.	1 and 2 Denotes	The first digit 1 – for the First Year and 2 – for the Second Year
4.	01, 02, 03, 04 & so on	The last two digits indicate the course number.
5.	Course No. 01 to 10	The last two digits, i.e., 01 to 10, indicate the course number for odd semesters
6.	Course No. 11 to 20	The last two digits, i.e., 11 to 20, indicate the course number for even semesters
7.	DSC, DSP, DSE, RM, OJT (IN/APP) and RP	Discipline Specific Core (DSC), Discipline Specific Practical (DSP), Discipline Specific Elective (DSE), Research Methodology (RM), On Job Training (OJT), Internship Training (IN)/ Apprenticeship (APP) and Research Project (RP).
8.	DSE- A to Z	Discipline Specific Elective (DSE) - A to Z are the number of elective courses offered in the respective semester.
9.	Cellular and Molecular Biology	Course Title
10.	L-T-P-C Denotes	Lecture (L), Tutorial (T), Practical (P) and Total Credits (C)

16. Examination for the Course:

The performance of the student of a semester for each course shall be evaluated as under.

- 16.1. Continuous Internal Assessment (CIA) for theory courses shall carry a maximum weightage of 30% of the total marks. It shall comprise two internal examinations, seminars, assignments, and optionally, attendance. The average of the two examinations—CIA-1 (Mid-Term) and CIA-2 (Preliminary) shall be considered for calculating the final CIA score.
- 16.2. Internal Assessment for practical courses shall carry a maximum of 30% of the total marks and shall be evaluated through practical examinations conducted during the semester.
- 16.3. The College shall conduct an Internal Assessment examination for project work/dissertation/OJT (IN/APP) carrying a maximum of 30% of the total marks allotted.
- 16.4. There shall be no provision for improvement of Continuous Internal Assessment (CIA) marks or for absences without valid reasons. However, a CIA may be conducted once, subject to prior approval from the competent authority through the proper channel, for students who were absent due to medical emergencies or participation in co-curricular/extra-curricular activities organized by recognized institutions or organizations.
- 16.5. The Semester End Examination (SEE) for both theory and practical courses shall be conducted for a maximum of 70% of the total marks.
- 16.6. The duration of the theory examination shall be three hours, while the practical examinations shall have a duration of six hours.
- 16.7. The statement of marks for the CIA shall be submitted to the Office of the Controller of Examinations (COE) prior to the commencement of the SEE, in accordance with existing University regulations.

17. Conduction of Semester End Examination and Evaluation:

- 17.1. The Controller of Examinations shall announce the examination calendar, detailing procedures for candidate registration, publication of the list of eligible candidates, prescribed fee payment requirements, and the tentative examination schedule.
- 17.2. The Office of the Controller of Examinations shall arrange to conduct the SEE for Discipline Specific Core (DSC), Discipline Specific Practical (DSP), Discipline Specific Elective (DSE),

- Research Methodology (RM), On Job Training (OJT) (Internship Training (IN)/ Apprenticeship (APP)) and Research Project (RP) courses.
- 17.3. The Controller of Examinations shall announce the detailed 'Timetable' and arrange to conduct the examination as per the prescribed rules and procedures specified in PIMS (DU) Examination Manual.
- 17.4. The Controller of Examinations shall arrange to assign the seat numbers and issue 'Hall Tickets' through the college to the certified eligible students by the HoI.
- 17.5. The Board of Studies in Biotechnology shall submit the approved list of examiners to the concerned office well in time based on seniority, specialization and other details.
- 17.6. The Board of Appointment of Examiners (BoAE) would constitute Board of Examiners (BoE) for each course.
- 17.7. The Board of Examiners shall prepare 2 sets of question paper each by both internal and external examiner for DSC, DSE and RM Courses. The moderator shall prepare 3 sets of question papers from the question papers set received for each of the assigned courses based on the syllabi, which shall cover the entire syllabi of a particular course in each set. A separate set of question papers for repeaters shall be prepared in case of change in the syllabi.
- 17.8. The question paper pattern (**Annexure 6 and 7**) approved by the Board of Studies shall be considered as a model for the SEE question paper by both the internal and external examiners.
- 17.9. Theory answer scripts for various courses shall undergo central evaluation by the University. A system of mixing and coding of answer scripts shall be adopted to ensure impartiality.
- 17.10. **Double evaluation**, comprising both internal and external examiners, shall be conducted, and the **average of the two evaluations** shall be considered as the **final score**.
- 17.11. The Semester End Practical Examination for DSP, RP, and OJT (IN/APP) shall be conducted jointly by an internal examiner and an external examiner, who shall serve as the Chairman.
- 17.12. The Office of the Controller of Examinations shall arrange for tabulation of marks awarded and determine the results. The final result shall be declared upon approval by the Vice Chancellor, Controller of Examinations and Dean of Faculty.

Pravara Institute of Medical Sciences- DU, Loni.

18. The Detailed Schematic of the Formative and Summative Assessments for CIA:

18.1 Theory Question Paper Pattern for both CIA-1 and CIA-2 under CBCS - Weightage (30%)

Theory Question Paper Pattern for CIA under CBCS for All Theory Courses							
Section A: (10 marks)							
Pattern and Choices	Marks	Total Marks	Time (min)				
Open Book Exam/Assignment	5 marks	05	15				
Seminar	5 marks	05	30				
Section B	3: (50 marks)						
MCQs	10 x 1 marks	10	120				
Long Answer questions (4 out of 5)	4 x 10 marks	40	120				
	60	165					

18.2 Practical Question Paper Pattern for CIA under CBCS - Weightage (30%)

Practical Question Paper Pattern for CIA under CBCS									
Continuous Internal Assessment (CIA) for All Practical (DSP) Courses									
Pattern and Choices	Marks	Total Marks	Time						
Spotters/Write up/ Portfolio/Case Study	2 x 2.5 marks	05	30 min						
Experiments –Performance	1 x 15 marks	15	20 min -Principle and Requirements 60 min -Performance						
Viva-voce	1 x 5 marks	05	-						
The practical examination shall carry a maximum of 25 marks. In addition, the following components shall be included in the overall assessment along with the marks obtained in the practical examination.									
Record Book	5 marks	05	-						
	Total Marks	30	-						

Pravara Institute of Medical Sciences- DU, Loni.

19. The Detailed Schematic of the Formative and Summative Assessments for SEE:

19.1 Theory Question Paper Pattern for SEE under CBCS -Weightage (70%)

Theory Question Paper Pattern for University Examinations under CBCS							
Semester End Examination (SEE) for Theory Courses							
Section A: (10 marks)							
Pattern and Choices Marks Total Marks							
MCQs	10 x 1 marks	10					
Secti	on B: (60 marks)						
Long Answer Questions (5 out of 6)	05 x 12 marks	60					
	Total	70					

Note: Out of the six questions, two shall be divided into parts "a" and "b", with each part carrying 6 marks. One short note question consisting of five sub-questions shall be given, out of which any four must be answered, with each carrying 3 marks.

19.2 Practical Question Paper Pattern for SEE under CBCS -Weightage (70%)

Practical Question Paper Pattern for University Examinations under CBCS							
Semester End Examination (SEE) for all Practical (DSP) Courses							
Pattern and Choices	Total Marks						
Spotters/Write up	3 x 5 marks	15					
Experiments -Performance	2 x 25 marks	50					
Viva-voce	05 marks	05					
Tota	70						

20. Allotment of Marks for Attendance of Theory and Practical Courses (Optional)

Ma	Marks for Attendance of Theory, Practical and Research Project - Internal Assessment (Optional)									
C No		ndance Percentage								
S. No.	Theory	Marks	Practical/ Research Project	Marks						
1	<75	0	<80	0						
2	>75-80	1	>80-83	2						
3	>81-85	2	>84-87	4						
4	>86-90	3	>88-91	6						
5	>91-95	4	>92-95	8						
6	>96-100	5	>96-100	10						

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21. Research Project, Assessment Pattern and Viva-Voce:

- 1. All candidates registered for the M.Sc. Medical Biotechnology degree shall undertake an individual research project during the third and fourth semesters, with each candidate being assigned a recognized PG guide at the end of the second and third semesters, respectively.
 - (a) The research project shall be undertaken either in-house or at an external organization during the third and fourth semesters. However, students are encouraged to undertake the project externally during the fourth semester to gain broader exposure and practical experience.
 - (b) The assessment of the project shall comprise the CIA and SEE. The final evaluation for each course shall be based on a total of 100 marks, with 30% from the CIA and 70% from the SEE.
 - (c) The performance in the CIA (30%) of the student is evaluated by the Research Coordination Committee of the Department/College. This includes presentations, monthly progress reports, attendance, software demonstrations and others such as logbook based on the type of project undertaken by the student.
 - (d) During the SEE, which constitutes 70% of the total marks, the average of the marks awarded independently by the external and internal examiners shall be submitted as the final evaluation.

No	Criteria	Sub-Criteria	% Marks
a. C	for Research Project (30%)		
1	Synopsis	Synopsis Preparation and Presentation	20
2	Attendance	Regularity and Participation	10
b. S	emester End Exam for Research	Project (70%)	
3	Research Work Quality (15)	1. Originality and Creativity	10
		2. Objectives/Hypothesis/Research Question	5
4	Methodology (25)	1. Use of Instruments/Techniques	10
		2. Execution and Clarity of Methodology	5
		3. Data Collection, Analysis and Interpretation	10
5	Presentation Skills (10)	Structure and Organization of PPT	5
		2. Presentation Skills	5
6	Viva-voce (10)	1. Understanding of the Research Topic	7
		2. Application of Knowledge, Critical Thinking and Problem-Solving	3

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7	Thesis (10)	1. Preparation and Submission	10
		Grand Total (a + b) (%)	100

22. Evaluation Scheme for OJT (IN/APP) Course:

- 22.1. The On-Job Training (OJT) (Internship/Apprenticeship) courses, carrying 4 credits, shall be undertaken externally.
- 22.2. Students must earn 4 credits to fulfill the mandatory On-Job Training (OJT) requirement.

S. No.	Activity	Marks Assigned (%)									
Contin	Continuous Internal Assessment (30%)										
1.	Attendance and Activity Logbook	15									
2.	Feedback/Evaluation Report of Internship/	15									
2.	Apprenticeship/ OJT Supervisor	13									
Semest	er End Examination Scheme for Evaluation (70%)										
3.	Preparation and Submission of Detailed Reports	30									
4.	Presentation	30									
5.	Viva-voce	10									
	Total	100									

22.3. The statement of marks for CIA shall be submitted to the Office of the COEs before the commencement of the SEE, in accordance with existing university regulations.

23. Standard of Passing:

- 23.1. A candidate who secures a minimum of 40% marks in both the Continuous Internal Assessment (CIA) and the Semester End Examination (SEE) for each course in a semester shall be declared to have passed in that course.
- 23.2. A candidate who fails to obtain the minimum required marks in the CIA of any course shall not be permitted to appear for the Semester End Examination (SEE) in any course of that semester.
- 23.3. A minimum of 40% marks must be obtained in the CIA for each course to be considered as passed. A candidate who remains absent for the CIA shall be marked as absent and will not be permitted to appear for the SEE. The marks secured in CIA once are final.
- 23.4. Candidates who have failed in any component, whether theory, practical, or both or in project/dissertation work of a particular semester shall be eligible to appear for the supplementary examination.

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23.5. If a candidate has passed all the previous semesters (I–III) but has failed to clear only the final semester (IV), a supplementary examination shall be conducted within one month from the date of declaration of the results of the said semester.

24. Computation of SGPA and CGPA:

The UGC recommends the following procedure to compute the Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA):

i. The SGPA is a measure of performance of work done in a semester. It is ratio of total credit points secured by a student in various courses registered in a semester and the total course credits taken during that semester. It shall be expressed up to two decimal places.

$$SGPA (Si) = \frac{\sum (Ci \times Gi)}{\sum Ci}$$

 $SGPA (Si) = \frac{\sum (Ci \ x \ Gi)}{\sum Ci}$ Where Ci is the number of credits of the ith course and Gi is the grade point scored by student in ith course.

Example for Computation of SGPA

Semester	Course	Credit	Grade	Grade point	Credit Point (Credit x Grade)
I	Course 1	3	A	8	3 X 08 = 24
I	Course 2	4	\mathbf{B}^{+}	7	4 X 07 = 28
I	Course 3	3	В	6	3 X 06 = 18
I	Course 4	3	О	10	3 X 10 = 30
I	Course 5	3	C	5	3 X 05 = 15
I	Course 6	4	В	6	4 X 06 = 24
		20			139
		SGPA			139/20=6.95

ii. The Cumulative Grade Point Average (CGPA) is also calculated in the same manner taking into account all the courses undertaken by a student over all the semesters of a programme, i.e.

$$\mathbf{CGPA} = \frac{\sum (\mathbf{Ci} \times \mathbf{Si})}{\sum \mathbf{Ci}}$$

Where Si is the SGPA of the ith semester and Ci is the total number of credits in that semester.

Example for Computation of CGPA

Semester 1	Semester 2	Semester 3	Semester 4						
Credit: 22 SGPA: 6.9 Credit: 22 SGPA: 7.8		Credit: 22 SGPA: 5.6	Credit: 22 SGPA: 6.0						
CGPA= 6.57 (22 x 6.9 + 22 x 7.8 + 22 x 5.6 + 22 x 6.0)/88									

The SGPA and CGPA shall be rounded off to 2 decimal points and reported in the marks statement. Based on the letter grades, grade points, SGPA, and CGPA as per the above regulations, a marks statement shall be issued for each semester.

25. Study Break from a Programme:

The University's regulations for readmission shall apply to any candidate seeking re-entry into a programme.

- a) Students admitted to a programme who remain absent for a period of three months or more must obtain permission for readmission from designated university authorities through proper channel.
- b) Candidates who have a break in study of six months or more, but less than one year, must apply for readmission through the prescribed application form to the Head of the Institution (HoI). Readmission shall be subject to approval by the designated university authorities and payment of the applicable readmission fee at the beginning of the academic year.
- c) Students rejoining a programme after a break in study due to lack of attendance shall be required to follow the curriculum and regulations in effect at the time of their rejoining.

26. Migration/ Transfer of Candidates:

An application for migration or transfer of a candidate from any recognized institution to the University shall be considered subject to the following conditions:

- a) A vacant seat must be available within the approved intake capacity for the corresponding year of study.
- b) The transfer shall be permitted only at the beginning of an academic year.
- c) The transfer shall be permitted only at the beginning of an academic year, subject to the approval of the Registrar and the Vice-Chancellor through the proper channel.
- d) Students shall be permitted to transfer credits earned from other recognized institutions, and vice versa, under the CBCS/SGPA/CGPA system, in accordance with UGC norms.

27. Declaration of Results and Award of Degree:

- 27.1. Upon completion of the tabulation of marks for each course, the Grade Points, Credit Points, and Letter Grades shall be computed only for candidates who have successfully passed the course.
- 27.2. The Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA) shall then be calculated. The procedures for the calculation of Credit Points (CP), Grade Points (GP), SGPA, and CGPA are provided in **Annexures 5**.
- 27.3. Specimen formats of the statement of marks are enclosed in **Annexures 9 to 11**.

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- 27.4. Letter grades and grade points shall be awarded to successful candidates based on the total marks secured in the courses from Semester I to Semester IV.
- 27.5. The classification of successful candidates for the award of classes and CGPA, letter grade for the Programme is as follows:

% of Marks	CGPA	Grade Point	Description of the Class to be Awarded	Letter Grade Result
90.0 - 100.00	9.00 - < 10.00	10	Outstanding	О
80.0 - <89.99	8.00 - < 8.99	9	Excellent	A+
70.0 - < 79.99	7.00 - < 7.99	8	Very Good	A
60.0 - < 69.99	6.00 - < 6.99	7	Good	B +
55.0 - < 59.99	5.50 - < 5.99	6	Above Average	В
50.0 - < 54.99	5.00 - < 5.49	5	Average	С
40.0 - < 49.99	4.00 - < 4.99	4	Pass	P
Below 40	Below 4.00	0	Fail (Re-appear)	F
-	Absent	0	Absent	Ab

- 27.6. The COE shall arrange for the issuance of the statement of marks for each semester, as well as a consolidated statement for overall performance across all semesters. These statements shall indicate both the marks and class obtained, along with the CGPA and corresponding letter grades. For the purpose of declaring final or overall results, only the grades and class shall be used. For individual semester examinations, results shall be indicated as either 'Pass' or 'Fail'.
- 27.7. The criteria for declaration of results and award of degree are as follows:
 - 1. Students who choose to exit the programme after the first year shall be awarded a Post Graduate Diploma in Medical Biotechnology, provided they have secured a minimum of 44 credits with at least 40% marks in each course.
 - 2. Students who secure a minimum of 88 credits with at least 40% marks in each course shall be awarded the M.Sc. in Medical Biotechnology.
- 27.8. The University shall declare the top three scorers as rank holders subject to the approval of the Executive Council, provided they have secured first class, passed all semester examinations in the first attempt, and have not received any grace marks at any stage.

Pravara Institute of Medical Sciences- DU, Loni.

28. Improvement of Results:

- 28.1. A student shall be entitled to improve academic performance by rejecting the results of the entire Semester End Examination (SEE) of a preceding semester (First, Second, Third, or Fourth). Rejection of results on a course-wise basis shall not be permitted. This provision for rejection may be exercised only once per semester during the two-year programme.
- 28.2. A student who has successfully completed all four semesters of the programme and wishes to improve their overall performance and percentage of marks may do so by rejecting the results of the entire SEE of any one semester. Course-wise rejection or selective improvement of results shall not be permitted. This option may be exercised only once.
- 28.3. A candidate who wishes to improve their results shall submit a duly completed application form along with the prescribed fee, in accordance with the Calendar of Examinations announced by the University. The candidate must also surrender the original marks card of the semester for which improvement is being sought.
- 28.4. In the event of no improvement in performance after reappearing for the examination, the candidate shall be entitled to retain the original results.

29. Examinations Grievance Redress and Reforms:

- 29.1. A student is entitled to request retotaling of marks and obtain a photocopy of the answer script, subject to the submission of an application and payment of the prescribed fee within the time frame announced by the University.
- 29.2. The University shall appoint a committee to address and resolve grievances related to examination matters.
- 29.3. There shall be a committee appointed by the University to deal with malpractice cases and award of penalties as per adopted standard procedures and scale of penalties.
- 29.4. The University Board of Studies (BoS) and Board of Examiners (BoE) shall review student performance upon the completion of each semester and submit appropriate recommendations to the University.
- 29.5. The University shall maintain an approved Examination Manual governing all examination-related procedures and regulations.
- 29.6. The Vice-Chancellor and other competent authorities may take any action they deem necessary to implement the provisions of these regulations and uphold academic standards.

30. Removal of Difficulties:

If any difficulty arises in the implementation of these regulations, the Vice-Chancellor may, by order, take appropriate decisions and make provisions not inconsistent with the Act, Statutes, Ordinances, or other Regulations, as deemed necessary or expedient to resolve the issue. Such actions shall be reported to the University authorities at the subsequent meeting of the Academic Council and shall be subject to ratification by the appropriate University authorities.

31. Repeal and Savings Clause:

- 31.1. All existing regulations governing the Master's degree programme in Medical Biotechnology under the semester scheme, along with any ordinances, regulations, or guidelines previously issued or adopted by the University in this regard, shall stand repealed from the date of implementation of these new regulations.
- 31.2. Notwithstanding anything contained in these regulations, any existing orders or instructions shall remain in force to the extent that they are consistent with the provisions of these regulations.
- 31.3. Provided that such repeal shall not affect the prior operation of the repealed regulations or ordinances, nor anything duly done or suffered thereunder, nor shall it affect any right, liability, or obligation acquired, accrued, or incurred under the said regulations.
- 31.4. The University may issue such orders, instructions, procedures, formats, circulars, or office memoranda as it deems necessary for the effective implementation of the provisions of these regulations.
- 31.5. Any modifications made from time to time by the UGC, MHRD, State Government, or other Regulatory Authorities in their respective regulations shall be deemed applicable to these regulations.



PRAVARA INSTITUTE OF MEDICAL SCIENCES

Annexure - 1

(DEEMED TO BE UNIVERSITY)

College of Biosciences and Technology

Loni 413736, Ahilyanagar District, Maharashtra State, India

Two Year Postgraduate Programme in M. Sc. Medical Biotechnology, Semester: I Structure of the Programme

Month and Year:	_ Name of the Student: _		PRN:
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٠				C	redits	s/ Wee	k			emester 5 weeks)	ıce	Continuous Internal Assessment		Semester En Assessment					ı	t
Number	Course Code	Category	Course Title	Lecture (L)	Tutorial (T)	Practical (P)	Credits (C)	Lect./Tut.	Practical	Total Hours	Min. Attendance (%)	CIA - Theory/ Practical (a)	Min. Passing Marks - CIA Min. 12	Theory (b)	Practical/ Viva Voce	Min. Passing Marks SEE Min. 28	Theory: a+b =100 Practical: a+c=100	Grade Point	Grade Letter	Credit Point
1	MBT 25101DSC	DSC	Cellular and Molecular Biology	4	-	-	4	60	-	60	75	30	-	70	-	-	100			
2	MBT 25102DSC	DSC	Physiology and Biomolecular Sciences	4	-	-	4	60	-	60	75	30	-	70	-	-	100			
	MBT 25101DSE-A	DSE	Fundamentals of Biotechnology																	
3	MBT 25101DSE-B	DSE	Industrial Biotechnology	4			4	60		60	75	30		70			100			
3	MBT 25101DSE-C	DSE	Bioinstrumentation and Analytical Techniques	4	-	-	4	60	-	60	/3	30	-	70	-	-	100			
	MBT 25101DSE-D	DSE	Fundamentals of Computational Biology																	
4	MBT 25101RM	RM	Research Methodology	4	-	-	4	60	-	60	75	30	-	70	-	-	100			
5	MBT 25101DSP	DSP	Cellular and Molecular Biology	-	•	2	2	-	60	60	80	30	-	-	70	-	100			
6	MBT 25102DSP	DSP	Physiology and Biomolecular Sciences	-	-	4	4	-	120	120	80	30	-	-	70	-	100			
			Total (I Year-Semester I)	16	-	6	22	240	180	420	-	180	-	280	140	-	600		 	

Pravara Institute of Medical Sciences- DU, Loni.

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PRAVARA INSTITUTE OF MEDICAL SCIENCES

Annexure - 2

(DEEMED TO BE UNIVERSITY)

College of Biosciences and Technology

Loni 413736, Ahilyanagar District, Maharashtra State, India

Two Year Postgraduate Programme in M. Sc. Medical Biotechnology, Semester: II Structure of the Programme

Month and Year:	_ Name of the Student:	PRN:
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Number	Code	ory		С	Credits	/ Wee	k		rs / Seme ts x 15 w		ance (%)	Continuous Internal Assessment		Continuous Internal Semester End Assessment Assessment				~		Grand Total	Grade Point	Grade Letter	Credit Point
	Course Code	Category	Course Title	Lecture (L)	Tutorial (T)	Practical (P)	Credits (C)	Lect./Tut.	Practical/ Exp. learning	Total Hours	Min. Attendance	CIA -Theory /Practical (a)	Min. Passing Marks - CIA Min. 12	Theory (b)	Practical/ Viva Voce (C)	Min. Passing Marks SEE Min. 28	Theory: a+b=100 Practical: a+c=100						
1	MBT 25111DSC	DSC	Introduction to Nanoscience and Nanotechnology	4	-	-	4	60	-	60	75	30	-	70	-	-	100						
2	MBT 25112DSC	DSC	Diagnostic Microbiology and Clinical Biochemistry	4	-	-	4	60	-	60	75	30	-	70	-	-	100						
	MBT 25111DSE-A	DSE	Genetic Engineering and Its Recent Advancements																				
3	MBT 25111DSE-B	DSE	Clinical Immunology and Vaccinology	4	_	_	4	60	-	60	75	30	-	70	-	-	100						
	MBT 25111DSE-C	DSE	Molecular Enzymology and Enzyme Technology																				
	MBT 25111DSE-D	DSE	Artificial Intelligence (AI)															i '		1			
4	MBT 25111OJT	OJT	On Job Training/Internship	-	-	4	4	-	180	180	80	30	-	-	70	-	100						
5	MBT 25111DSP	DSP	Introduction to Nanoscience and Nanotechnology	-	-	2	2	-	60	60	80	30	-	-	70		100						
6	MBT 25112DSP	DSP	Diagnostic Microbiology and Clinical Biochemistry	-	-	4	4	-	120	120	80	30	-	1	70	-	100						
			Total (I Year-Semester II)	12	-	10	22	180	360	540	-	180	-	210	210	-	600						

Pravara Institute of Medical Sciences- DU, Loni.



PRAVARA INSTITUTE OF MEDICAL SCIENCES

Annexure - 3

(DEEMED TO BE UNIVERSITY)

College of Biosciences and Technology

Loni 413736, Ahilyanagar District, Maharashtra State, India

Two Year Postgraduate Programme in M. Sc. Medical Biotechnology, Semester: III Structure of the Programme

Month and Year:	Name of the Student:	PRN:	

ber	Code	gory		Credits/ Week			rs / Ser its x 15	nester weeks)	dance (%)	Continuous Internal Assessment		(%) Internal Assessment		Semester End Assessment		Grand Total	Grade Point	Grade Letter	Credit Point	
Number	Course Code	Category	Course Title	Lecture (L)	Tutorial (T)	Practical (P)	Credits C)	Lect./Tut.	Practical	Total Hours	Min. Atten	CIA - Theory/ Practical (a)	Min. Passing Marks -CIA Min. 12	Theory (b)	Practical/ Viva Voce (C)	Min. Passing Marks SEE	Theory: a+b =100 Practical: a+c=100			
1	MBT 25201DSC	DSC	Cell Culture Techniques	4	-	-	4	60	-	60	75	30	-	70	-	-	100			
2	MBT 25202DSC	DSC	Advanced Molecular Diagnostic Techniques	4	-	-	4	60	-	60	75	30	-	70	-	-	100			
3	MBT 25201DSE-A	DSE	Cancer Biotechnology and Oncogenomics																	
4	MBT 25201DSE-B	DSE	Cyber Security	4	_	_	4	60	_	60	75	30	-	70	_	_	100	1		
5	MBT 25201DSE-C	DSE	Cytogenetics															1		
6	MBT 25201DSE-D	DSE	Marine Biotechnology															1		
7	MBT 25201RP	RP	Research Project	-	-	4	4	-	120	120	80	30	-	-	70	-	100			
8	MBT 25201DSP	DSP	Cell Culture, Animal Biotechnology and Stem Cell Biology	-	-	4	4	-	120	120	80	30	-	ı	70	-	100			
9	MBT 25202DSP	DSP	Advanced Molecular Diagnostic Techniques	-	-	2	2	-	60	60	80	30	-	-	70	-	100			
			Total (II Year-Sem III)	12	-	10	22	180	300	480	-	180	-	210	210	-	600	1		

Pravara Institute of Medical Sciences- DU, Loni.

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PRAVARA INSTITUTE OF MEDICAL SCIENCES

(DEEMED TO BE UNIVERSITY)

College of Biosciences and Technology

Loni 413736, Ahilyanagar District, Maharashtra State, India

Two Year Postgraduate Programme in M. Sc. Medical Biotechnology, Semester: IV Structure of the Programme

Month and Year:N	Name of the Student:	PRN:
------------------	----------------------	------

_	ode	y		Cr	edits	/ Weel	k		urs / Seme dits x 15 v		Continuous Internal Assessment		Internal		Semester End Assessment		Grand Total	Grade Point	Grade Letter	Credit Point
Number	Course Code	Category	Course Title	Lecture (L)	Tutorial (T)	Practical (P)	Credits (C)	Lect./Tut.	Practical	Total Hours	Min. Attendance	CIA - Theory/ Practical (a)	Min. Passing Marks - CIA	Theory (b)	Practical/ Viva- voce (C)	Min. Passing SEE Min. 28	Theory: a+b =100 Practical: a+c=100			
1	MBT 25211DSC	DSC	Bioinformatics: Tools and Techniques	4	-	-	4	60	-	60	75	30	-	70	-	-	100			
2	MBT 25212DSC	DSC	Animal Biotechnology and Stem Cell Biology	4	-	,	4	60	-	60	75	30	-	70	-	-	100			
3	MBT 25211DSE-A	DSE	Gene Therapy and RNA- Based Therapeutics																	
4	MBT 25211DSE-B	DSE	Innovation Driven Entrepreneurship	2	-	-	2	30	-	30	75	30	-	70	-	-	100			
5	MBT 25211DSE-C	DSE	3D Bioprinting																	
6	MBT 25212DSE-A	DSE	Clinical Research																	
7	MBT 25212DSE-B	DSE	Omics Technologies	2			2	30		30	75	30		70			100			
8	MBT 25212DSE-C	DSE	Pharmacognosy and Metabolic Engineering		-	•	2	30	-	30	13	30	-	70	-	-	100			
9	MBT 25211DSP	DSP	Bioinformatics: Tools and Techniques	-	-	4	4	-	120	120	80	30	-	-	70	-	100			
10	MBT 25211RP	RP	Research Project	-	-	6	6	-	180	180	80	30	-	-	70	-	100			
			Total (II Year-Sem IV)	12	-	10	22	180	300	480	-	180	-	280	140	-	600			
			Grand Total (I-IV Sem)	52		36	88	780	1140	1920	-	720	-	980	700	-	2400	-	-	-

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Annexure - 4

Calculation of SGPA and CGPA

SGPA for I Semester =
$$\frac{\text{CP (I Sem)}}{\text{Total Credits (I Sem)}}$$

SGPA for II Semester
$$=\frac{CP (II Sem)}{Total Credits (II Sem)}$$

CGPA for I and II Sem =
$$\frac{\text{CP (I Sem)} + \text{CP (II Sem)}}{\text{Total Credits (I Sem)} + \text{Total Credits (II Sem)}}$$

SGPA for III Semester
$$=\frac{\text{CP (III Sem)}}{\text{Total Credits (III Sem)}}$$

CGPA for I, II and III Sem =
$$\frac{\text{CP (I Sem)} + \text{CP (II Sem)} + \text{CP (III Sem)}}{\text{Total Credits (I Sem)} + \text{Total Credits (II Sem)} + \text{Total Credits (III Sem)}}$$

SGPA for IV Semester
$$=\frac{CP (IV Sem)}{Credits (IV Sem)}$$

Class Awarded =____

PRAVARA INSTITUTE OF MEDICAL SCIENCES

(Deemed to be University) Loni -413736, Tal – Rahata, Dist – Ahilyanagar

I/II/III/IV Semester M. Sc. Medical Biotechnology Examination Month, Year

Paper Title	e:			Pape	er Code:		
Answer Bo	ook No.:			Code	e No.:		
Center: Exam Seat				Sun		(For Office use)	
Paper Title	:	Pa	per Code:	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~		Code No.:	r Office use)
Center:		Da	te:	•••		•	,
NI	B: (Candidate	e must fill up all entries)					
Instructio	ons to the	candidate:					
3. U 4. T	Jse of Mob This answer Jse of Whi	eet or supplement will wile and Calculator is not r sheet will be collected te ink, erasing and rew	ot allowed in the d after 20 minut	e exam t <u>es</u> . wed.		all.	Marks 10
	т —			2			
2.	a) b) c) d) a) b) c) d)			4.	a) b) c) d) a) b) c) d)		

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5.	a) b) c) d)	8.	a) b) c) d)
6.	a) b) c) d)	9.	a) b) c) d)
7.	a) b) c) d)	10.	a) b) c) d)

INSTRUCTIONS:		WRONG	CORRECT	WRONG	WRONG
1. Fill the blocks using BLACK BALL PEN only	a)	✓		Χ	1.
2. Fill only one block for each question as shown by Right	b)				
3. Fill only in blocks provided Do Not make any stray	c)				
marks on the answer sheet	d)				

Q.N.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
b)										
c)										
d)										

	Version:
Marks Obtained:	
Signature of Examiners	

PRAVARA INSTITUTE OF MEDICAL SCIENCES

(Deemed to be University)

I/II/III/IV Semester M.Sc. Medical Biotechnology Examination Month, Year

Paper Title: Date:

Paper Code: Time:

Marks: 60

Instructions to the candidate:

All questions are compulsory.

Neat diagrams must be drawn wherever necessary.

Write answer on both sides of answer book.

Answers written in illegible handwriting will not be assessed.

A separate answer sheet is provided for MCQ which will be collected after 20 minutes.

Section - B

Que 2. Write Long notes (Any Five)

A		Marks 12
В	1) 2)	Marks 12 (6+6)
C		Marks 12
D	1) 2)	Marks 12 (6+6)
E		Marks 12
F	Write short notes on (Any four) 1) 2) 3) 4) 5)	Marks 12 (4X3)

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PRAVARA INSTITUTE OF MEDICAL SCIENCES

(DEEMED TO BE UNIVERSITY)

(University Established under Section (3) of UGC Act 1956)

Loni 413736, Ahilyanagar District, Maharashtra State, India

STATEMENT OF MARKS

NAME OF THE STUDENT has appeared for the M.Sc. Medical Biotechnology Sem I	Photo of the			
Examination held in MONTH, YEAR with Seat No and PRN	Student			
of the College of Biosciences and Technology and Secured Marks as given below.				

	Course Title		Theory			Point	etter	int
Course Code		UNI	INT	Total	Credit	Po	Γ	Credit Point
	Max.	70	30	100	Ç	Grade	Frade	edi
	Min.	28	12	40		ı5	Gr	Cr
MBT 25101DSC	Cellular and Molecular Biology				4			
MBT 25102DSC	Physiology and Biomolecular Sciences				4			
MBT 25101DSE-A	Fundamentals of Biotechnology							
MBT 25101DSE-B	Industrial Biotechnology				4			
MBT 25101DSE-C	Bioinstrumentation and Analytical Techniques				4			
MBT 25101DSE-D	Fundamentals of Computational Biology							
MBT 25101RM	Research Methodology				4			
MBT 25101DSP	Cellular and Molecular Biology				2			
MBT 25102DSP	Physiology and Biomolecular Sciences				4			

T D A G D D	0 15 1	0 . 0.000	D 1.
SGPA Sem-I·	Grand Total:	Out of 600	Result

Date: Controller of Examinations

DSC	Discipline Specific Core	Letter Grade	Grade Point	% of Marks
DSP	Discipline Specific Practical	O (Outstanding)	10	90.0 - 100.0
DSE	Discipline Specific Elective	A+ (Excellent)	9	80.0 - 89.99
RM	Research Methodology	A (Very Good)	8	70.0 - 79.99
OJT	On Job Training	B + (Good)	7	60.0 - 69.99
RP	Research Project	B (Above Average)	6	55.0 - 59.99
Ab	Absent	C (Average)	5	50.0 - 54.99
NA	Not Allowed	P (Pass)	4	40.0 - 49.99
*	Previous Earned	F (Fail)	0	Below 40
#	College Exam	Ab (Absent)	0	0
Max	Maximum Marks			
Min	Minimum Marks			
UNI	University Exam			
INT	Internal Assessment			

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(DEEMED TO BE UNIVERSITY)

(University Established under Section (3) of UGC Act 1956)

Loni 413736, Ahilyanagar District, Maharashtra State, India

STATEMENT OF MARKS

NAME OF THE STUDENT has appeared for the M.Sc. Medical Biotechnology Sem II	Photo of the			
Examination held in MONTH, YEAR with Seat No and PRN	Student			
of the College of Biosciences and Technology and Secured Marks as given below.				

Course Title		The	eory	Marks	it	Point	etter	Point
Course Code		UNI	INT	Total	Credit	e P	Ι	it P
	Max.	70	30	100	Cı	Grade	Grade	Credit
	Min.	28	12	40		5	Gr	C
MBT 25111DSC	Introduction to Nanoscience and Nanotechnology				4			
MBT 25112DSC	Diagnostic Microbiology and Clinical Biochemistry				4			
MBT 25111DSE-A	Genetic Engineering and Its Recent Advancements							
MBT 25111DSE-B	Clinical Immunology and Vaccinology				4			
MBT 25111DSE-C	Molecular Enzymology and Enzyme Technology				4			
MBT 25111DSE-D	Artificial Intelligence (AI)							
MBT 25111OJT	On Job Training/Internship				4			
MBT 25111DSP	Introduction to Nanoscience and Nanotechnology				2			
MBT 25112DSP	Diagnostic Microbiology and Clinical Biochemistry				4			

SGPA Sem-I: SGPA Sem-II: Grand Total: _____ Out of 600 Result:

Date: Controller of Examinations

DSC	Discipline Specific Core	Letter Grade	Grade Point	% of Marks
DSP	Discipline Specific Practical	O (Outstanding)	10	90.0 - 100.0
DSE	Discipline Specific Elective	A+ (Excellent)	9	80.0 - 89.99
RM	Research Methodology	A (Very Good)	8	70.0 - 79.99
OJT	On Job Training	B + (Good)	7	60.0 - 69.99
RP	Research Project	B (Above Average)	6	55.0 - 59.99
Ab	Absent	C (Average)	5	50.0 - 54.99
NA	Not Allowed	P (Pass)	4	40.0 - 49.99
*	Previous Earned	F (Fail)	0	Below 40
#	College Exam	Ab (Absent)	0	0
Max	Maximum Marks			
Min	Minimum Marks			
UNI	University Exam			

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(University Established under Section (3) of UGC Act 1956)

Loni 413736, Ahilyanagar District, Maharashtra State, India

STATEMENT OF MARKS

NAME OF THE STUDENT has appeared for the M.Sc. Medical Biotechnology Sem III Examination held in MONTH, YEAR with Seat No. ____ and PRN ____ of the College of Biosciences and Technology and Secured Marks as given below.

Photo of the Student

	Course Title		Theory		Theory Marks		t	Point	etter	Point
Course Code		UNI	INT	Total	Credit	P.	Ĺ	t Pe		
	Max.	70	30	100	\mathbf{Cr}	Grade	rade	Credit		
	Min.	28	12	40		Gr	Z.	$C_{\mathbf{r}}$		
MBT 25201DSC	Cell Culture Techniques				4					
MBT 25202DSC	Advanced Molecular Diagnostic Techniques				4					
MBT 25201DSE-A	Cancer Biotechnology and Oncogenomics									
MBT 25201DSE-B	Cyber Security				4					
MBT 25201DSE-C	Cytogenetics				4					
MBT 25201DSE-D	Marine Biotechnology									
MBT 25201RP	Research Project				4					
MBT 25201DSP	Cell Culture, Animal Biotechnology and				4					
WID1 23201DSI	Stem Cell Biology				+					
MBT 25202DSP	Advanced Molecular Diagnostic Techniques				2					

SGPA Sem-II: SGPA Sem-III: Grand Total: ____ Out of 600 Result:

Date:

Controller of Examinations

DSC	Discipline Specific Core	Letter Grade	Grade Point	% of Marks
DSP	Discipline Specific Practical	O (Outstanding)	10	90.0 - 100.0
DSE	Discipline Specific Elective	A+ (Excellent)	9	80.0 - 89.99
RM	Research Methodology	A (Very Good)	8	70.0 - 79.99
OJT	On Job Training	B + (Good)	7	60.0 - 69.99
RP	Research Project	B (Above Average)	6	55.0 - 59.99
Ab	Absent	C (Average)	5	50.0 - 54.99
NA	Not Allowed	P (Pass)	4	40.0 - 49.99
*	Previous Earned	F (Fail)	0	Below 40
#	College Exam	Ab (Absent)	0	0
Max	Maximum Marks			
Min	Minimum Marks			
UNI	University Exam			
INT	Internal Assessment			

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Loni 413736, Ahilyanagar District, Maharashtra State, India

STATEMENT OF MARKS

NAME OF THE STUDENT has appeared for the M.Sc. Medical Biotechnology Sem IV	the Student				
Examination held in MONTH, YEAR with Seat No and PRN					
of the College of Biosciences and Technology and Secured Marks as given below.					
of the conege of biosciences and reciniology and secured warks as given below.					

	Course Title		Theory			Point	etter	Point
Course Code		UNI	INT	Total	Credit	e P		t Pe
	Max	70	30	100	Cr	Grade	rade	Credit
	Min	28	12	40		Gr	Z,	\mathbf{Cr}
MBT 25211DSC	Bioinformatics: Tools and Techniques				4			
MBT 25212DSC	Animal Biotechnology and Stem Cell Biology				4			
MBT 25211DSE-A	Gene Therapy and RNA-Based Therapeutics							
MBT 25211DSE-B	Innovation Driven Entrepreneurship				2			
MBT 25211DSE-C	3D Bioprinting							
MBT 25212DSE-A	Clinical Research							
MBT 25212DSE-B	Omics Technologies				2			
MBT 25212DSE-C	Pharmacognosy and Metabolic Engineering							
MBT 25211DSP	Bioinformatics: Tools and Techniques				4			
MBT 25211RP	Research Project				6			

Grand Total: _____ Out of 600 Result:

SGPA Sem-I: SGPA Sem-II: SGPA Sem-III: SGPA Sem-IV: CGPA:

Date: Controller of Examinations

DSC	Discipline Specific Core	Letter Grade	Grade Point	% of Marks
DSP	Discipline Specific Practical	O (Outstanding)	10	90.0 - 100.0
DSE	Discipline Specific Elective	A+ (Excellent)	9	80.0 - 89.99
RM	Research Methodology	A (Very Good)	8	70.0 - 79.99
OJT	On Job Training	B + (Good)	7	60.0 - 69.99
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Ab	Absent	C (Average)	5	50.0 - 54.99
NA	Not Allowed	P (Pass)	4	40.0 - 49.99
*	Previous Earned	F (Fail)	0	Below 40
#	College Exam	Ab (Absent)	0	0
Max	Maximum Marks			
Min	Minimum Marks			
UNI	University Exam			

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SUMMARY SCHEME FOR CHOICE BASED CREDIT SYSTEM Category of Courses

M. Sc. Medical Biotechnology

Semester	Discipline Specific Core (DSC)	Discipline Specific Practical's (DSP)	Discipline Specific Elective (DSE)	Research Methodology	OJT (IN/APP) and RP	Credits
I	DSC 1 DSC 2	DSP 1 DSP 2	DSE 1	RM1	_	22
П	DSC 3	DSP 3	DSE 2		OJT 1	22
	DSC 4	DSP 4				
Ш	DSC 5	DSP 5	DSE 3		RP 1	22
	DSC 6	DSP 6				
IV	DSC 7	DSP 7	DSE 4		RP 2	22
	DSC 8		DSE 5	Nf Z	22	

References

- 1. https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf
- 2. https://www.ugc.gov.in/pdfnews/9028476_Report-of-National-Credit-Framework.pdf
- **3.** https://www.ugc.gov.in/e-book/FYUGP/mobile/index.html
- **4.** https://htedu.maharashtra.gov.in/Main/DocMasters/Website/Media/1/NEP%20Task%20Force%20report.pdf
- **5.** https://htedu.maharashtra.gov.in/Main/DocMasters/Website/Media/1/NEP-2020-Task-Force-Detailed-Annexures-30-June-2021_0.pdf
- **7.** https://htedu.maharashtra.gov.in/Main/DocMasters/Website/Media/1/NEP%20Committee-1%20Revised%20Report.pdf
- 9. https://www.ugc.gov.in/pdfnews/2727945_SWAYAM-Regulations-2021.pdf
- **10.** https://www.ugc.gov.in/pdfnews/4040078_FRAMEWORK-FOR-UNIVERSITIES-TO-CONDUCT-EXAMINATIONS-FOR-SWAYAM-COURSES-1_0001.pdf
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