M.Sc. BIOTECHNOLOGY

(Approved by UGC)

(I to IV SEMESTERS)

REGULATIONS AND SYLLABUS
UNDER
CHOICE BASED CREDIT SYSTEM (CBCS)

NATIONAL EDUCATION POLICY - 2020

REGULATIONS – 2024

(Effective from the Academic Year 2024-2025)

St. Peter's Institute of Higher Education and Research

M. Sc. BIOTECHNOLOGY
REGULATION 2024

CHOICE BASED CREDIT SYSTEM

VISION & MISSION OF THE INSTITUTION

VISION

To achieve, Academic Excellence in Engineering, Technology, and Science through Teaching, Research, and Extension to Society.

MISSION

By generating, preserving, and disseminating knowledge through rigorous academic study, inquisitiveness to understand and explore nature, entrepreneurship with creativity and innovation.

VISION & MISSION OF THE DEPARTMENT

VISION

To produce higher caliber Biotechnologists to attain new heights in the different areas of biotechnology as per industrial needs and to provide leaders in the field of Biotechnology.

MISSION

- To progress the department to attain center of excellence in Biotechnology.

- To provide quality education and training to the students with strong foundational concepts and techniques in Biotechnology to face future challenges.

- To provide skill development activities in the promising areas of Biotechnology

- To providing best Undergraduate, Postgraduate, Doctoral programs and Research and Development activities within a decade.

PROGRAM OUTCOMES (POs):

PO1:Critical Thinking: Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.

PO2:Effective Communication: Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology.

PO3: Social Interaction: Elicit views of others, mediate disagreements and help reach conclusions in group settings.

PO4: Effective Citizenship: Demonstrate empathetic social concern and equity centred national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.

PO5:Ethics: Recognize different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them.

PO6: Environment and Sustainability: Understand the issues of environmental contexts and sustainable development.

PO7: Self-directed and Life-long Learning: Acquire the ability to engage in independent and life- long learning in the broadest context socio-technological changes.

PO8: Modern tool usage: Create, select, and apply appropriate techniques, resources, and Modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

PEO 1: Ability to apply knowledge of Biology, Science and Technology

PEO 2: Ability to communicate effectively with biotechnologists, other professionals and community at large. The ability to explain the impact of engineering solutions in societal, cultural, global and environmental context.

PEO 3: Contribute towards technological development through academic Research and Industrial practices.

PEO 4: To produce research oriented Biotechnology graduates who will be employable in academic/Industry sponsored research and also who will be pursuing higher studies.

PEO 5: Ability to get employment in Biotechnology and related Industry and also to set up an Industry.

PROGRAM SPECIFIC OUTCOMES (PSOs)

PSO 1: To produce graduates as an outstanding researchers or eminent scientist in the field of biotechnology and to generate unique products for social need with concern ethical statute.

PSO 2: To sort the students to be an efficient entrepreneur to twitch biotechnology companies and industries.

PSO 3: To uplift the graduate's more specifically in to research-oriented Biotechnologist and will be employable in academic/Industry sponsored research and also who will be pursuing higher research studies.

FACULTY OF ARTS, SCIENCE, COMMERCE, MANAGEMENT AND HUMANITIES

POST GRADUATE DEGREE PROGRAMMES

REGULATION- 2024

CHOICE BASED CREDIT SYSTEM (CBCS)

Effective from the Academic Year 2024-2025

St. PETER'S INSTITUTE OF HIGHER EDUCATION AND RESEARCH

POSTGRADUATE REGULATIONS UNDER CHOICE-BASED CREDIT SYSTEM

(Effective from the Academic Year 2024-25 and onwards)
REGULATION (2024)

The following regulations are effective from the academic year 2024-2025 and are applicable to candidates admitted to Post Graduate (PG) degree programmes in the Faculty of Arts, Science, Commerce, Management and Humanities, St. Peter's Institute of Higher Education and Research (SPIHER).

1. PROGRAMMES OFFERED

1.1 The various PG programmes offered in the Faulty of Arts, Science, Commerce and Humanities, SPIHER are listed in the table below.

S. No.	Programme	Discipline
1.	MA	Economics
2.	MA	English
3.	MA	Political Science
4.	MA	Tamil
5.	MBA	Management
6.	MCA	Computer Applications
7.	M.Com.	Commerce
8.	M.Sc.	Biochemistry
9.	M.Sc.	Biotechnology
10.	M.Sc.	Chemistry
11.	M.Sc.	Computer Science
12.	M.Sc.	Information Security and Digital Forensics
13.	M.Sc.	Mathematics
14.	M.Sc.	Microbiology
15.	M.Sc.	Physics
16.	M.Sc.	Visual Communication

1.3 Duration of the Programme

1.3.1 The minimum and maximum period for the completion of the Post graduate degree are given below.

Programme	Minimum number of semesters	Maximum number of semesters
MA. / MBA / MCA / M.Com. / M.Sc.	4	8

Each semester normally consists of 90 working days or 450 hours instructional hours of study.
Examination shall be conducted at the end of every semester for the respective courses.

2. MODE OF STUDY

All programmes are offered under Full-time regular mode. Candidates admitted under Full-time should be present in the SPIHER during the complete working hours for curricular, co-curricular and extra-curricular activities assigned to them.

3. ELIGIBILITY FOR ADMISSION

A candidate for admission to the first semester PG degree programme shall be required to have passed an appropriate UG degree examination of the St. Peter's Institute of Higher Education and Research or any other university accepted by the SPIHER as equivalent thereto. Institution accepts the scores obtained in

the Common University Entrance Test (CUET) conducted by the Ministry of Education, Government of India. Admission shall be offered only to the candidates who possess the qualification prescribed **(Annexure – 1).**

4. CHOICE BASED CREDIT SYSTEM

All the programmes are offered under Choice Based Credit System (CBCS) with a total credit of 80 for PG programmes.

4.1 Credit
Credit means the weightage given to each course by the experts of the Board of Studies concerned.

5. STRUCTURE OF PROGRAMME

Every programme will have a curriculum and syllabus consisting of core, elective courses, open electives, Value added courses, Internship and project work

5.1 CORE COURSES

The core course consists of theory and practical of department domains for which examinations shall be conducted at the end of each semester.

5.2 ELECTIVE COURSES

Elective courses are to be chosen with the approval of the Head of the Department concerned from the list of electives courses prescribed in the curriculum.

5.3 INTERNSHIP

The student shall undergo 15 days internship in the end of the second semester. Internship report will be evaluated and marks will be awarded in the third semester. Students have to earn two credits for the internship. Hundred marks is awarded for internship through CIA.

5.4 OPEN ELECTIVE

Student may select one of the open elective courses from the list given below offered by other departments in the third semester. Students must earn two credits for this course. (The students cannot select the course offered by the parent department).

5.5 PROJECT WORK

The candidates shall undertake the research project or dissertation in the fourth semester either in the department concerned or in industries/research institute or any other organization (National / International) and the project report has to be submitted at the end of the final semester.

In case, the student undertakes the project work outside the department the faculty concerned within the department shall be the Supervisor and the teacher/ scientist under whom the work is carried out will be the Co-Supervisor. The candidate shall bring the attendance certificate from the place where the project work carried out.

Permission for project work in general will be given to innovative and industry related work. Such projects will be evaluated periodically. If the Project evaluation committee is satisfied with the progress of the project work, continuation for the project work will be given until the final assessment is made in the fourth semester. In case, there is no tangible progress in a session, such project work will be terminated and the students have to do their project in their respective departments.

HOD shall assign a project supervisor who shall monitor the student project works. A project assessing committee (PAC) shall be constituted with the HOD and two senior faculty members of the department. The PAC shall announce the dates for the reviews and demonstration. The student shall make a presentation on the progress and demonstration of their project before the PAC in the presence of their supervisor on the scheduled dates.

The candidate has to submit in consultation with his / her supervisor the title, objective and action plan to the PAC on the first review for approval of the project. The student can initiate the project work only after obtaining the approval of PAC.

For project work, assessment is done on a continuous basis by 3 reviews for 40 marks and final *viva voce* carries 100 Marks in each phase at the end of the semester.

There shall be three project reviews (conducted during the pre-final semester and final semester) to be conducted by a review committee. The student shall make presentation on the progress made, before the committee. The head of the department shall constitute the review committee for each branch in consultation with Dean. The members of the review committee will evaluate the progress of the project and award marks as given below.

Project reviews (CIA) Marks			Final Project Report (ESE) and *Viva Voce* Examination (Marks)	Total Marks
Review 1	Review 2	Review 3		
5	15	20	60	100

The total marks obtained in the three reviews, rounded to the nearest integer are the continuous internal assessment marks out of 40. There shall be a final *viva-voce* examination at the end of semester conducted by one internal examiner, one external examiner and the supervisor concerned.

A student is expected to attend all the project reviews conducted by the institution on the scheduled dates. It is mandatory for every student to attend the reviews, even if they are working on a project in an industry based outside Chennai city. It is their duty to inform the organization about the project reviews and its importance, and get permission to attend the same. If a student does not attend any of the project reviews, he / she shall not be allowed for the successive reviews and thereby not allowed to appear for the final *viva voce* Examination.

The candidate is expected to submit the project report as per the guidelines of the institution on or before the last day of submission. If he/she fails to submit the project report, even beyond the extended time, then he/she is deemed to have failed in the project work and shall register for the same in the subsequent semester and re-do the project after obtaining permission from the HoD and Dean.

5.6 ONLINE COURSES

The department shall approve the list of online courses offered by approved external agencies such as SWAYAM / NPTEL / MOOC. While listing the courses, the department shall consider the following points:

    a.   The course evaluation is carried out by the same external agency

    b.   Equivalent grading mechanism to be arrived at by the department

A student can register up to a maximum of 18 credits (total) as online courses during the entire programme of study. These shall be treated as Elective courses (programme elective or open elective). Students may be allowed to register for one course per semester. The student shall produce a Pass Certificate from the respective agencies. The credits(s) earned by the students will be transferred to the concerned course in the Grade Sheet.

6. **MEDIUM OF INSTRUCTION**

The medium of instruction, examinations and project report will be in English Language throughout the programme except MA Tamil.

7. **MAXIMUM MARKS**

All the theory, practical and project courses shall carry a maximum of 100 marks, out of which 40 marks are awarded for Continuous Internal Assessment (CIA) and 60 marks for End Semester Examination (ESE).

8. **REQUIREMENTS FOR COMPLETION OF A SEMESTER**

A candidate who has fulfilled the following conditions shall be deemed to have satisfied the requirement for completion of a semester.

He / She secures not less than 75% of overall attendance in that semester.

Candidates who do not have the requisite attendance for the semester will not be permitted to write the semester Examinations.

9. **VARIOUS POSITIONS IN A DEPARTMENT**

9.1 DEAN

All Arts, Science, Commerce, Management and Humanities Departments are headed by a Dean. The dean is responsible for all activities taking place in coordination with all department heads and all faculty members belonging to them. The Dean makes a review of all the academic activities of faculty members, students and research on a regular time interval and takes steps to improve the morale of all Faculty and Students.

9.2 HEAD OF THE DEPARTMENT

Each department offering various UG and PG programmes is headed by a Head of the Department (HoD). The HoD is responsible for allotting courses to each faculty member uniformly in consultation with other HoD's and Deans. The HoD is responsible for streamlined teaching of courses to students, improvement and assessment of teaching quality within the department on a continuous basis, assessment of faculty members, transparent conduct of continuous internal assessment tests, interacting with parents, ensuring that all academic and non-academic activities of Faculty and students are monitored and steps taken for their improvement.

9.3 FACULTY ADVISOR

To help the students in planning their courses of study and to render general advice regarding either the academic programme or any other activity, the Head of the Department concerned, will assign every year, a certain number of students from the first year to a faculty member who will be called as Faculty Advisor. The set of students thus assigned will continue to be under the guidance of this Faculty Advisor till they complete the programme or replaced by the HoD. The Faculty Advisor gets information about the syllabus coverage by the faculty members, requirements of the students academically and otherwise, attendance and progress of the students from the respective class counselors. The Faculty Advisor also informs the students about the academic schedule including the dates of assessments and syllabus coverage for each assessment, weightage for each assessment, their continuous internal assessment marks and attendance percentage details before the commencement of end semester examinations.

9.4 FACULTY MENTOR

To help students in planning their courses of study and for general advice on the academic programme and personal counselling, the HoD shall allot 20 students to a faculty who will function as a faculty mentor throughout their period of study. Faculty mentor shall advise the students and monitor their

behaviour and academic performance. Problems if any shall be counselled by them periodically. The faculty mentor is also responsible to inform the parents of their mentee's progress. The faculty mentor shall display the cumulative attendance particulars of his/her mentees periodically (once in four weeks) on the notice board to know their attendance status and satisfies the requirements to appear for the End Semester Examination.

9.5 COURSE COORDINATOR FOR COMMON COURSE

Each common theory course offered to more than one class or branch or group of branches, shall have a "course coordinator". The course coordinator will be nominated by the dean in consultation with respective head of the department. The course coordinator will be normally a senior faculty member who is one among the teachers teaching the course.

The "Course Coordinator" shall meet the teachers handling the course, as often as possible and ensure

- A common teaching methodology is followed for the course.

- The study materials are prepared by the staff members and communicated to the students periodically.

- The involvement of students in course based projects and assignments.

- To prepare common question paper for continuous internal assessment tests.

- For uniform evaluation of continuous internal assessments answer sheets by arriving at a common scheme of evaluation.

The course coordinator is responsible for evaluating the performance of the students in the continuous internal assessments and end semester examinations and analyse them to find suitable methodologies for improvement in the performance. The analysis should be submitted to the HoD and Dean for suitable action.

10. CLASS COMMITTEE

a) Constitution of the Class Committee

For every class, a class committee shall be constituted by the Heads of Department, as given below:

Chairman	A faculty member not teaching that particular class
Members	• Faculty of all the courses of study • Four student members from the class to be nominated by the HoD

b) Functions of the Class Committee

(i) The class committee shall meet thrice during the semester. The first meeting will be held within two weeks from the date of commencement of the semester in which the nature of the broad assessment procedure for the different courses will be discussed. The second and third meetings will be held six weeks and ten weeks respectively from the commencement of a semester to meaningfully interact and express opinions and suggestions to improve the effectiveness of teaching - learning process and analyze the performance of the students in the assessments. The chairperson of the class committee should send the minutes of the class committee meetings to the Dean through the Head of the Department, immediately after the meetings is over.

(ii) During the first meeting of the class committee, all the faculty members shall give their course plan to the class committee chairperson/chairman for approval and uploading into the ERP.

(iii) Any innovation in any course plan not agreed by the class committee or the HoD will be referred to the Chairman/Chairperson for approval.

11. COURSE PLAN AND DELIVERY

a) The course plan will have details of the overview of the course, course objectives, course outcome, course teaching and learning activities and course assessment methods and policy on compensation assessment.

b) Each course will have tailor-made assessment models viz. group tasks, assignments, report on field visit, quizzes, open book tests, laboratory exercises, mini-project and end of session summative assessment etc. The course plan will also have details of information on study materials.

c) The number of assessments for a course shall range from 3 to 5.

d) Every course should have a final assessment (End Semester) on the entire syllabus with 60% weightage.

e) The course plan shall be approved by the Class Committee (CC) chairperson/chairman and the HoD of the Department offering the course.

f) The Course plans for all courses offered by the Institute will be available in the website for reference.

g) ATTENDANCE

All courses should have a common attendance policy:

   a) At least 75% attendance in each course is mandatory.

   b) A maximum of 10% shall be allowed under On Duty (OD) category.

   c) Students with less than 65% of attendance shall be prevented from writing the End Semester Examination..

12. ASSESSMENT PROCEDURE

Each **COURSE** shall have assessments done according to the Course Plan drawn by the faculty who handles the course. The assessments of a course will depend on the needed course learning outcomes.

There will be a Continuous Internal Assessment Tests and End Semester Examination for both theory and practical courses of all programmes.

(i) Theory / practical / projects courses

Continuous Internal Assessment (CIA) : 40 % Marks

End Semester Examination (ESE) : 60 % Marks

12.1 CONTINUOUS INTERNAL ASSESSMENT (CIA)

(a) Theory Courses

- There will be a minimum of Three continuous internal assessment tests (Assessment Test 1,2 and a Model test, for each theory course.

Distribution of Continuous Internal Assessment (CIA) marks for a theory course			
Evaluation Component	Syllabus coverage	Duration of the Exam	Maximum marks
CIA-1	First 1.5 Units of the syllabus	2 Hours	7.5
CIA-2	Second 1.5 Units of the syllabus	2 Hours	7.5
Model Test	All Units	3 Hours	10
Assignment / Seminar / Mini Project (or) Group Presentation	Two written assignments for each course / Written quiz (or) Presentation of a written Report (or) Case study / Multiple Choice Objective Type Test Or Technical Project involving not more than 3 students (or) any other Group Presentation related to the course.		10
Attendance	75% and above		5
Total			40

- The continuous assessment marks obtained by the candidate in the first appearance shall be

retained, considered and valid for all subsequent attempts, till the candidate secures a pass.

(b)   Practical Courses

S. No.	Category	Maximum Marks
01	Attendance (75% and above)	**05**
02	Observation work	**20**
03	Model Test	**15**
Total		**40**

- For practical courses, the student will be evaluated on a continuous basis for 20 Marks (which will include performing all experiments, submitting observation and record note book in scheduled format and time), 15 marks for model test at the end of the semester and 5 marks for attendance in the course.

- For practical courses, if a student has been absent for some practical classes or has performed poorly, then the student will have to get permission from the lab in-charge and year coordinator to do the experiments, so that he/she meets all the requirements for the course and thereby allowed to appear for model and end semester practical exams.

- If a student has not done all the experiments assigned for that lab, before the scheduled date will not be allowed to appear for the model and end semester practical exam. Such students will have to register the course again by doing all the experiments in the next semester when the course is offered.

Pattern of Question Paper (Theory) for CIA 1 and 2

Particulars	Remarks
Maximum Marks	50 Marks
Duration	2 Hours
Part – A (Q.No. 1 to 10)	MCQ (10 x 1 =10)
Part – B (Q.No. 11 to 15)	Short Answers (5 x 4 = 20)
Part – C (Q.No. 16 to 17)	Long Answers (2 x 10 = 20)

12.2 END SEMESTER EXAMINATION (ESE)

- The end semester examinations shall be conducted at the end of the odd and even semester of the Academic year.

- End-semester examinations will be conducted for a maximum of 100 marks. The marks secured in end-semester exams will be converted to 60 marks.

- The training evaluation will be made by a three-member committee constituted by the Head of the Department in consultation with the Faculty Advisor and respective Training Coordinator. A presentation should be made by the student before the Committee, based on the Industrial Training or Professional Enrichment undergone.

Pattern of Question Paper (Theory) for Model and ESE

Particulars	Remarks
Maximum Marks	100 Marks
Duration	3 Hours
Part – A (Q.No. 1 to 10)	MCQ (10x1=10)
Part – B (Q.No. 11 to 15)	Short Answers (Either or Type) (5x5=25)
Part – C (Q.No. 15 to 20)	Long Answers (Either or type) (5x10=50)
Part – D (Q.No. 21)	Essay Answers - Compulsory (1x15=15)

13. PURSUING COURSES IN OTHER INDIAN INSTITUTIONS AND ABROAD

- A student can be selected, to get Professional Exposure in his/her area of Expertise in any Reputed Research Organization or Educational Institution of repute or any University in India and abroad.

- This is possible only with the List of Research Organizations and educational Institutions in India and abroad approved by the Academic Council.

- The student can have the option of spending not more than three to Six months in the Final year or Pre-final year of his/her Degree. During this period, the student can do his/her Project work or register for courses which will be approved by the Class Committee and Dean, under the guidance of a Project Supervisor who is employed in the Organization and Co-guided by a staff member from our Institution.

- Credit Transfer can be done by the CoE on submission of the certificate through the HoD and Dean within 15 days of completion of the training.

- The students who undergo training outside the Institution (either in India or Abroad) is expected to abide by all Rules and Regulations to be followed as per Indian and the respective Country Laws, and also should take care of Financial, Travel and Accommodation expenses.

14. PASSING REQUIREMENTS

- A candidate should secure not less than 50% of total marks (Minimum 50% of the grand total of CIAE arks and ESE marks put together) prescribed for the courses, subject to securing a minimum of 50% marks out of maximum mark in End Semester Exams (ESE). Then he/she shall be declared to have passed in the examination.

- If a candidate fails to secure a pass in a particular course, it is mandatory that he/she shall register and reappear for the examination in that course during the next semester when examination is conducted in that course. It is mandatory that he/she should continue to register and reappear for the examination till he/she secures a pass.

15. REVALUATION OF ANSWER SCRIPTS

A candidate can apply for revaluation of his/her End semester examination answer Scripts in a theory course, immediately after the declaration of results, on payment of a prescribed fee along with application to the Controller of Examinations through the Head of the Department. The Controller of Examination will arrange for the revaluation and the result will be intimated to the candidate concerned through the Head of the Department. Revaluation is not permitted for practical courses and for project work.

16. WITHDRAWAL FROM EXAMINATIONS

- A candidate may, for valid reasons, (medically unfit / unexpected family situations) be granted permission to withdraw from appearing for the examination in any course or courses in any one of the semester examination during the entire duration of the degree programme.

- Withdrawal application shall be valid only if the candidate is otherwise normally eligible (if he/she satisfies Attendance requirements and should not be involved in Disciplinary issues or Malpractice in Exams) to write the examination and if it is made within FIVE days before the commencement of the examination in that course or courses and also recommended by the Dean through HoD.

- Notwithstanding the requirement of mandatory FIVE days notice, applications for withdrawal for special cases under extraordinary conditions will be considered based on the merit of the case.

- Withdrawal shall not be considered as an appearance for deciding the eligibility of a candidate for the purpose of Classification of Degree.

- Withdrawal is NOT permitted for arrears examinations of the previous semesters.

17. AUTHORIZED BREAK OF STUDY

- This shall be granted by the Institution, only once during the full duration of study, for valid reasons for a maximum of one year during the entire period of study of the degree programme.
- A candidate is normally not permitted to temporarily break the period of study. However, if a candidate would like to discontinue the programme temporarily in the middle of duration of study for valid reasons (such as accident or hospitalization due to prolonged ill health), he / she shall apply through the Dean in advance (Not later than the Reopening day of that semester) through the Head of the Department stating the reasons. He /She should also mention clearly, the Joining date and Semester for Continuation of Studies after completion of break of Study. In such cases, he/she will attend classes along with the Junior Batches. A student who availed break of study has to rejoin only in the same semester from where he/she left.

- The total period for completion of the programme shall not exceed more than 8 consecutive semesters from the time of commencement of the course irrespective of the period of break of study in order that he / she may be eligible for the award of the degree.

- If any student is not allowed to appear for End Semester Examinations for not satisfying Academic requirements and Disciplinary reasons, (Except due to Lack of Attendance), the period spent in that semester shall NOT be considered a permitted 'Break of Study' and is NOT applicable for Authorized Break of Study.

- In extraordinary situations, a candidate may apply for an additional break of study not exceeding another one Semester by paying a prescribed fee for a break of study. Such extended break of study shall be counted for the purpose of classification of First Class Degree.

- If the candidate has not reported back to the department, even after the extended Break of Study, the name of the candidate shall be deleted permanently from the institution enrolment. Such candidates are not entitled to seek readmission under any circumstances.

18. AWARD OF DEGREE

All assessments of a course will be done on absolute marks basis. However, for the purpose of reporting the performance of a candidate, letter grades, each carrying certain number of points, will be awarded as per the range of total marks (out of 100) obtained by the candidate in each course as detailed below:

RANGE OF MARKS FOR GRADES

Range of Marks	Letter Grade	Grade Point
90 -100	O	10
80 – 89	A+	9
70 – 79	A	8
60 – 69	B+	7
50 – 59	B	6
00-49 (Reappear)	F	0
ABSENT	AAA	0
Withdrawal	W	0
Authorised Break of Study	ABS	0

18.1 CUMULATIVE GRADE POINT AVERAGE CALCULATION

The CGPA calculation on a 10 Point scale is used to describe the overall performance of a student in all courses from first semester to the last semester. RA, AAA and W grades will be excluded for calculating

GPA and CGPA.

$$GPA = \frac{\sum_{i=1}^{N} C_i\, GP_i}{\sum_i C_i} \qquad\qquad CGPA = \frac{\sum_{i=1}^{n} C_i\, GP_i}{\sum_i C_i}$$

Where

C_i – Credits for the course

GP_i – Grade Point for the course

i   – Sum of all courses successfully cleared during all the semesters

n   - Number of all courses successfully cleared during the particular semester in the case of GPA and during all the semesters in the case of CGPA

18.2 GRADE SHEET

After revaluation results are declared in each semester, Grade Sheets will be issued to each student. At the end of programme a consolidated grade sheet also will be issued to each student. The grade sheet and consolidated grade sheet will contain the following details:

- The programme and degree in which the candidate has studied

- The list of courses enrolled during the semester and the grade secured

- The Grade Point Average (GPA) for the semester.

18.3 CLASSIFICATION OF DEGREE AWARDED
Final Degree is awarded based on the following

Range of CGPA	Classification of Degree
≥ 7.50	First Class with Distinction
≥ 6.00 <7.50	First Class
≥ 5.00 < 6.0	Second Class

Minimum requirements for award of Degree: A student should have obtained a minimum of 5.0 CGPA.

1. A candidate who qualifies for the award of the Degree having passed the examination in all the courses of all the 4 semesters in his/her first appearance within a maximum of 10 consecutive securing a overall CGPA of not less than 7.5 (Calculated from 1st semester) shall be declared to have passed the examination in **First Class with Distinction**. Authorized Break of Study vide Clause 17, will be considered as an Appearance for Examinations, for award of First Class with Distinction. Withdrawal shall not be considered as an appearance for deciding the eligibility of a candidate for First Class with Distinction

2. A candidate who qualifies for the award of the Degree having passed the examination in all the courses of all the 4 semesters within a maximum period of 6 consecutive semesters after his/her commencement of study securing an overall CGPA of not less than 6.0 (Calculated from 1st semester), shall be declared to have passed the examination in **First Class.** Authorized break of study vide Clause 17 (if availed of) or prevention from writing End semester examination due to lack of attendance will not be considered as Appearance in Examinations.

3. All other candidates who qualify for the award of the Degree having passed the examination in all the courses of all the 4 semesters within a maximum period of 6 consecutive after his/her commencement of study securing a overall CGPA of not less than 5.0, (Calculated from 1st semester) shall be declared to have passed the examination in **Second Class**.

4. A candidate who is absent in semester examination in a course/project work after having registered for the same, shall be considered to have appeared in that examination for the purpose of classification.

18.4 ELIGIBILITY FOR THE AWARD OF DEGREE

A student shall be declared to be eligible for the award of Post graduate degree, provided the student has successfully completed all the requirements of the programme, and has passed all the prescribed examinations within the maximum period specified in clause 1.3.

i) Successfully gained the required number of total credits as specified in the curriculum corresponding to his/her programme within the stipulated time.

ii) Successfully completed the programme requirements and has passed all the courses prescribed in all the semesters within a maximum period of 5 years reckoned from the commencement of the first semester to which the candidate was admitted.

iii) Successfully completed any additional courses prescribed by the Institution.

iv) has earned a CGPA of not less than 5

v) has no dues to the Institution, Library, Hostels, etc.,

vi) has no disciplinary action pending against him / her.

19. SUPPLEMENTARY EXAMINATION

Supplementary examination will be conducted only for the final semester students within 10 days from the date of publication of results for students who have failed up to two theory courses. Only such students shall apply with the prescribed fee to the Controller of Examinations within the stipulated time period.

20. RANKING

A candidate who qualifies for the PG degree programme passing all the examinations in the first attempt, within the minimum period prescribed for the programme of study from semester I through semester IV to the programme shall be eligible for ranking. Such ranking will be confirmed to 10 percent of the total number of candidates qualified in that particular programme of study subject to a maximum of 10 ranks.

21. DISCIPLINE

Every student is required to observe disciplined and decorous behaviour both inside and outside the Institution and not to indulge in any activity which will tend to bring down the prestige of the Institution. If a student indulges in malpractice in any of the end semester theory / practical examination, continuous assessment examinations he/she shall will be liable for disciplinary action as prescribed by the SPIHER from time to time.

22. REVISION OF REGULATION AND CURRICULUM

St. Peter's Institute of Higher Education and Research may from time-to-time revise, amend or change the Regulations, Scheme of Examinations and Syllabi if found necessary.

23. ACADEMIC BANK OF CREDITS (ABC)

All the students who admitted in any one of the above programmes are mandatory to register in the Academic Bank of Credits (ABC) portal provided by the Ministry of Education (MoE), Government of India.

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Annexure – 1

Eligibility requirement for admission to PG Programme in Arts, Science, Commerce and Humanities for the Academic year 2024-2025 and onwards

S. No.	Name of the Programme	Eligibility for admission
01	M.A. Economics	Candidates who passed the Under graduation in any stream of study (B.A/ B.B.A. / B.COM / BCA / B.Sc.) or its equivalent in the relevant subjects as recognized by the Institute or any other equivalent Examination thereto are eligible for admission to M.A. in Economics Programme.
02	M.A. English	Candidates who passed the B.A. English Programme or its equivalent in the relevant subjects as recognized by the Institute or any other equivalent Examination thereto wherever prescribed are eligible for admission to M.A English Programme.
03	M.A. Political Science	B. A. Degree with Political Science / For admissions in M.A Political Science, candidates must have completed a Bachelor's Degree in any discipline under 10+2+3 education pattern with at least 50 % marks in aggregate of Social Sciences subjects and at least 55 per cent marks aggregate of Science and Technology subjects.
04	M.A. Tamil	Candidates need to have a Bachelor's degree in any stream with Tamil as one of the subjects of study with minimum 50% aggregate marks
05	MBA	Candidates who passed the under graduation any stream of study (B.B.A. / B.Com. / BCA / B.Sc.) or its equivalent in the relevant subjects as recognised by the institute or any other equivalent examination thereto are eligible for admission to MBA programme.
06	MCA	a) Recognized Bachelor's Degree of Minimum three year duration in B.Sc. Computer Science / B.Sc. (Information Technology)/ BCA with 50 % in qualifying examination with Mathematics as one of the subjects at graduate level / 10+2 level. b) Other equivalent degrees B.Com. / B.B.M. /B.B.A./ B.L.M. / B.A. Corporate Secretaryship / B.A. Economics / any other degree with Business Mathematics and Statistics or Mathematics / Statistics in Main / Allied level or c) B.Sc. Chemistry with Mathematics and Physics and Physics as allied subject. d) B.E./ B.Tech. / M.B.A. **e) Bachelor's degree in any discipline with Mathematics as one of the subjects at the Higher Secondary level.**
07	M.Com	Candidates who passed the B.Com Programme or its equivalent in the relevant subjects as recognized by the Institute or any other equivalent or Any Bachelor degree with Accounts and Commerce as Major course. (B.Com any stream, BBA and BBM).Examination thereto wherever prescribed are eligible for admission to M.Com Programme.
S. No.	Name of the Programme	Eligibility for admission
08	M.Sc. Biochemistry	A Bachelor's degree with Biochemistry / Molecular Biology / Biotechnology / Botany / Zoology / Chemistry / Microbiology / Nutrition / Animal Science or Medicine / Veterinary Sciences including Indian forms of Medicine (the main subject of this

		University or from any other University accepted as equivalent, is eligible for admission to M.Sc. (Biochemistry) degree programme.
09	M.Sc. Biotechnology	Candidate must have a Bachelor's degree in Biotechnology / Botany / Plant Biology & Biotechnology / Zoology / Biochemistry / Microbiology / Agriculture Sciences / Life Sciences are eligible for admission to M.Sc. Biotechnology
10	M.Sc. Chemistry	Candidates who have passed with minimum of 50% Marks in their Bachelor degree from a recognized university like B.Sc. (Hons.) in Chemistry / B.Sc.(Pass) / B.Sc.(Life Sciences) with Chemistry as the main subject.
11	M.Sc. Computer Science	**a)** Recognized Bachelor's Degree of Minimum three year duration in Computer Science/ Information Technology/ Mathematics / Physics / Statistics / BCA b) Any other equivalent degree in Information Technology and Computer Science with an 50% of marks (Inclusive of all subjects)
12	M.Sc. Information Security and Digital Forensics	**a)** Recognized Bachelor's Degree of Minimum three year duration in Computer Science/ Information Technology/ Information Science/ Mathematics / Physics / Statistics / BCA / Forensic Sciences / Criminology / Cyber Security / Information Security / Digital Forensics or any other related degrees b) B.Com / B.B.M. /B.B.A./ B.L.M. / B.A. Corporate Secretaryship / B.A. Economics with Computer Science / Computer Applications/Information Technology / Information Science or similar options as one of the subjects c) B.E./B.Tech with an 50% of marks (Inclusive of all subjects). d) Bachelor's degree in any discipline with Mathematics or Computer Science as one of the subjects at the Higher Secondary level.
13	M.Sc. Mathematics	Candidates who have passed with minimum of 40% Marks or equivalent GPA bachelor degree in Mathematics / Applied Mathematics / B.E./ B.Tech from any reputable University or Institution. Honours degree or equivalent in a mathematics, science or engineering degree.
14	M.Sc. Microbiology	B.Sc. Microbiology / Applied Microbiology / Industrial Microbiology / Medical Microbiology / Botany / Zoology / Biology / Biotechnology / Molecular Biology / Genetic Engineering / Biochemistry / Agriculture / Forestry / Medical Lab Technology / Life Sciences with minimum 40% aggregate marks or equivalent GPA.

S. No.	Name of the Programme	Eligibility for admission
15	M.Sc. Physics	Candidates who passed the B.Sc. (Physics) Programme or its equivalent in the relevant subjects as recognized by the Institute or any other equivalent Examination thereto wherever prescribed are eligible for admission to M.Sc. in Physics Programme. Or B.Sc. Physics with Mathematics as an ancillary subject (or) B.Sc. Triple major with Physics, Chemistry, and Mathematics (or) B.Sc. (Applied Science/Applied Physics) with Mathematics as an ancillary subject and Physics as a major.
16	M.Sc. Visual Communication	Candidates who have passed any UG degree are eligible to join the M.Sc. Visual Communication.

SEMESTER - I

SUB CODE	Course Title	L	T	P	Credit	Marks		
						CIA	ESE	Total
24BOP101	Advanced Biochemistry	5	0	0	4	40	60	100
24BOP102	Genetics and Molecular biology	4	0	0	4	40	60	100
24BOP103	Bioinformatics	4	0	0	4	40	60	100
24BOP104	**Program Elective – I**	4	0	0	4	40	60	100
24BOP111	Advanced Biochemistry Lab	0	0	4	2	40	60	100
24BOP112	Genetics and Molecular biology Lab	0	0	4	2	40	60	100
	Total	**17**	**0**	**8**	**20**	**240**	**360**	**600**

SEMESTER -- II

SUB CODE	Course Title	L	T	P	Credit	Marks		
						CIA	ESE	Total
24BOP201	Plant Biotechnology	5	0	0	4	40	60	100
24BOP202	Microbiology	4	0	0	4	40	60	100
24BOP203	Recombinant DNA technology	4	0	0	4	40	60	100
24BOP204	**Program Elective-II**	4	0	0	4	40	60	100
24BOP211	Plant Biotechnology Lab	0	0	4	2	40	60	100
24BOP212	Microbiology Lab	0	0	4	2	40	60	100
	Total	**17**	**0**	**8**	**20**	**240**	**360**	**600**

SEMESTER -- III

SUB CODE	Course Title	L	T	P	Credit	Marks		
						CIA	ESE	Total
24BOP301	Genetic Engineering	5	0	0	4	40	60	100
24BOP302	Immunology and immunotechnology	5	0	0	4	40	60	100
24BOP303	**Program Elective – III**	4	0	0	4	40	60	100
24----------	**Open Elective-I**	3	0	0	2	40	60	100
24BOP311	Genetic Engineering Lab	0	0	4	2	40	60	100
24BOP312	Immunology and immunotechnology Lab	0	0	4	2	40	60	100
24BOP321	Internship - I	0	0	0	2	-	100	100
	Total	17	0	8	20	240	460	700

SEMESTER - - IV

Code No.	Course Title	L	T	P	Credit	Marks		
						CIA	ESE	Total
24BOP401	Research Methodology	5	0	0	5	40	60	100
24BOP402	**Program Elective -IV** Bioprocess technology	5	0	0	4	40	60	100
24BOP491	Project work	0	0	15	11	40	60	100
	Total	10	0	15	20	120	180	300

Program Elective –I (Semester I)

CourseCode	Course Title	L	T	P	Credit	Marks		
						CIA	ESE	Total
24BOP104-A	Environmental biotechnology	4	0	0	4	40	60	100
24BOP104-B	Biodiversity and bio prospecting	4	0	0	4	40	60	100
24BOP104-C	Molecular genetics	4	0	0	4	40	60	100

Program Elective –II (Semester II)

CourseCode	Course Title	L	T	P	Credit	Marks		
						CIA	ESE	Total
24BOP204-A	Herbal technology	4	0	0	4	40	60	100
24BOP204-B	Bio Entrepreneurship	4	0	0	4	40	60	100
24BOP204-C	Cell and Developmental Biology	4	0	0	4	40	60	100

Program Elective –III (Semester III)

CourseCode	Course Title	L	T	P	Credit	Marks		
						CIA	ESE	Total
24BOP303-A	Pharmaceutical biotechnology	4	0	0	4	40	60	100
24BOP303-B	Nano biotechnology	4	0	0	4	40	60	100
24BOP303-C	Applied Biotechnology	4	0	0	4	40	60	100

TOTAL CREDITS OF PG CURRICULUM: 80