GONDWANA UNIVERSITY, GADCHIROLI.

ORDINANCE NO. 14 of 2017

EXAMINATIONS LEADING TO THE DEGREE OF (विज्ञान पारंगत) (MASTER OF SCIENCE) (M.Sc.) (SEMESTER PATTERN WITH CREDIT GRADE SYSTEM) IN THE FACULTY OF SCIENCE, ORDINANCE, 2017.

WHEREAS, it is expedient to provide an ordinance regarding Examinations leading to the degree of Master of Science (M.Sc.) with semester pattern and credit Grade system in the faculty of science, for the purposes hereinafter appearing, the Management council hereby pleased to make the following ordinance:-

1. This Ordinance may be called "Examinations leading to the Degree of (विज्ञान पारंगत) **Master of Science (M.Sc)(** Semester Pattern) with credit, Grade system in the faculty of science, Ordinance,2017"
2. This Ordinance shall come into force from the date of its Making by the Management council.
3. The duration of the M.Sc. course shall be of two academic years consisting of four semester with University examination at the end of each semester namely:

(a) (विज्ञान पारंगत) [M.Sc. Semester I Exam]
(b) (विज्ञान पारंगत) [M.Sc. Semester II Exam]
(c) (विज्ञान पारंगत) [M.Sc. Semester III Exam]
(d) (विज्ञान पारंगत) [M.Sc. Semester IV Exam]

4. The examination shall be held at such places and on such dates as are notified by the University.
5. **ELIGIBILITY TO THE COURSE:**
   Subject to his compliance with the provisions of this Ordinance and of other ordinances in force from time to time, the following candidates shall be eligible for admissions to विज्ञान पारंगत Master of Science course and examinations thereof

(a) For (विज्ञान पारंगत) **[M.Sc. (Physics) Semester-I]**
For admission to the M.Sc. Semester I in Physics, a candidate shall have offered Physics as one of the subject at the qualifying B.Sc. Examination;

(b) For (विज्ञान पारंगत) **[M.Sc. (Chemistry) Semester-I]**
For admission to the M.Sc. Semester I in Chemistry, a candidate shall have offered Chemistry as one of the subjects at the qualifying B.Sc. Examination;

(c) For (विज्ञान पारंगत) **[M.Sc. (Mathematics) Semester-I]**

For admission to the M.Sc. Semester I in Mathematics, a candidate shall have offered Mathematics as one of the subjects at the qualifying B.Sc. examination;

(d) For (विज्ञान पारंगत) [M.Sc. (Computer Science) Semester-I]

For admission to the M.Sc. Semester I in Computer Science, a candidate shall have offered Computer Science as one of the optional subject for study and examination at B.Sc. degreeor B.Sc./B.E. examination with post B.Sc. diploma course in Computer Science and Application or B.Sc. with optional subjects as Computer Maintenance/ B.Sc. Information Technology / B.C.A.;

(e) For (विज्ञान पारंगत) [M.Sc. (Zoology) Semester-I]

For admission to the M.Sc. Semester I in Zoology, a candidate shall have offered Zoology as one of the subjects for the qualifying B.Sc. Examination;

(f) For (विज्ञान पारंगत) [M.Sc. (Microbiology) Semester-I]

For admission to the M.Sc. Semester I in Microbiology, a candidate shall have offered Biotechnology/Microbiology as a subject of study and examination at B.Sc. degree;

(g) For (विज्ञान पारंगत) [M.Sc. (Biotechnology) Semester-I]

Eligibility criteria for admission to the M.Sc. Semester I in Biotechnology, shall be all Life Science graduates or Agriculture or Veterinary or Fishery Science or Pharmacy/Engineering/Technology/Medicine (MBBS) or B.D.S. graduates with 55%. ;

(h) For (विज्ञान पारंगत) [M.Sc. (Environmental Science) Semester-I]

For admission to the M.Sc. Semester I to the Environmental Science, a candidate shall have offered Environmental Science as one of the subjects at the qualifying B.Sc. Examination and B.Sc.Agriculture Science but having Environmental Science as one of the subject.;

(i) For (विज्ञान पारंगत) [M.Sc. (Electronics) Semester-I]

For admission to the M.Sc. Semester I in Electronics, a candidate shall have offered Electronics as one of the subjects at the qualifying B.Sc. Examination.;

(j) **For (विज्ञान पारंगत) [M.Sc. (Botany) Semester]**

For admission to the M.Sc. Semester I in Botany, a candidate shall have offered Botany as one of the subjects at the qualifying B.Sc. Examination; and

(k) **For (विज्ञान पारंगत) [M.Sc (Biochemistry) Semester-I]**

For admission to the M.Sc Semester I in Biochemistry, a candidate shall have offered Chemistry and /or Biochemistry as subjects for study and examination at B.Sc degree.

6. (a) (विज्ञान पारंगत) M.Sc. Semester I Examination

Students who have fulfilled the eligibility criteria as mentioned in Para 5 and have been admitted to this course in semester I.

(b) (विज्ञान पारंगत) M.Sc. Semester II Examination

Students who have been admitted in this course in semester II

(c) (विज्ञान पारंगत) M.Sc. Semester III Examination
Students who have been admitted to this course in semester III

(e) (विज्ञान पारंगत) M.Sc. Semester IV Examination

(i) Students who have been admitted in this course in semester IV

(ii) Every student shall submit three copies of the project report (typed and properly bound) for the Fourth Semester to the University at least one month prior to the commencement of the final practical examination through the Head of the Department/ Centre/ the Principal of the college concerned along with the certificate signed by the supervisor and declaration by the candidate towards original work which is not submitted to any university or organization for award of the degree. The scheme/ guidelines for the students and supervisors regarding Project Work Report are given in Appendix 3.

7. The ATKT rules for the admission to (विज्ञान पारंगत) M.Sc. Course (Theory and Practical as separate passing head) shall be as given in the following table:

TABLE

Admission to Semester	Candidate should have passed in all the subjects of the following examination	Candidates should Have Satisfactorily Completed the term work & appeared For at least one paper Of the following exam.	Candidate should ha passedat least two third of the passing heads of the followi examination
Semester I	As provided in the para 6 of 5 of this Ordinance	----------	----------
Semester II	----------	Semester I	----------
Semester III	----------	----------	Semester I & II taken together
Semester IV	----------	Semester III	……

8. Without prejudice to other provisions of Ordinance No. 6 relating to the examinations in general, provisions of Para 5, 8, 9, 10, 26, 31 and 32 of the said ordinance shall apply to every student admitted to this course.

9. The fees for the examination, tuition, laboratory and other fees shall be as prescribed by the university from time to time.

10. a) The scope of the subjects shall be as prescribed in the syllabus.
    b) The medium of instruction and examination shall be English.

11. The number of papers and the maximum marks assigned to each paper and minimum marks/grade an examinee must obtain, in order to pass the examination shall be as prescribed in **appendix1** and **2,** appended with this ordinance.

12. The examinee at each of the examination shall have option of not been declared successful at the examination in case he/she does not secure a minimum of grade equivalent to 55% marks at the examinations. This option will have to be exercised every time the application is submitted to any of the examination. Once this option is exercised, the option shall be binding on the examinee and it shall not be evoked under any circumstances.

13. The classification of the examinee successful at the semester end examinations and at the end of final semester examination shall be as per the rules and regulations of credit grade system as prescribed in **Appendix 4,** appended this ordinance.

14. The provisions of ordinance no. 3 of 2007 for the award of grace marks for passing an examination, securing higher grade in subject(s) as updated from time to time shall apply to the examination under this ordinance.

15. The names of the successful examinee passing the examination as a whole in the minimum prescribed period and obtaining prescribed number of places securing the grades equivalent to first and second division shall be arranged in order of merits as provided in ordinance 6 relating to examination in general.

16. No candidate shall be admitted to an examination under this ordinance, if he/she has already passed the same examination of this university or of any other university.

17. Examinee successful at the final examination shall on payment of the prescribed fees, will be entitled for the award of the degree in the prescribed form signed by the Vice Chancellor.

18. This course is based on credit grade semester pattern and therefore, it will be regulated by guidelines given in **Appendices (1 to 4)** which are part of the ordinance.

(Statement of object and reasons)

To regulate the admission course structure and examination leading to the Degree of Master of science in the faculty of science with semester pattern and credit grade system, The Vice-Chancellor of the University has issued Direction No.112 of 2012 under provision of sub section (8) of section 14 of the Maharashtra University Act,1994.

It is necessary to convert the Direction No.112 of 2012 into an Ordinance as provided under the provision of the above mentioned Act, hence this Draft Ordinance is prepared for consideration of the Academic council and the Management council 185 of the University.

Appendix-1

Schemes of teaching and examination under credit grade semester in the faculty of science for M.Sc. Programme in All subjects, except Mathematics

Sr.No.	Semester	Theory Paper/ Practical	Teaching Scheme (Hrs/week)			Credits	Examination Scheme					
			Th.	Pr.	Total		Duration (Hrs)	Max. Marks		Total Marks	Min. Passing Marks	
								External Marks	Internal Marks		Th.	Pr.
1	I	I	4	--	4	4	3	100	--	100	40	--
2	I	II	4	--	4	4	3	100	--	100	40	--
3	I	III	4	--	4	4	3	100	--	100	40	--
4	I	IV	4	--	4	4	3	100	--	100	40	--
5	I	Practical I	--	8	8	4	3-8*	80	20	100	--	40
6	I	Practical II	--	8	8	4	3-8*	80	20	100	--	40
7	I	Seminar	2	--	2	1	--	--	25	25	10	
		Total	18	16	34	25	--	--	--	625	170	80

Sr.No.	Semester	Theory Paper/ Practical	Teaching Scheme (Hrs/week)			Credits	Examination Scheme					
			Th.	Pr.	Total		Duration (Hrs)	Max. Marks		Total Marks	Min. Passing Marks	
								External Marks	Internal Marks		Th.	Pr.
1	II	I	4	--	4	4	3	100	--	100	40	--
2	II	II	4	--	4	4	3	100	--	100	40	--
3	II	III	4	--	4	4	3	100	--	100	40	--
4	II	IV	4	--	4	4	3	100	--	100	40	--
5	II	Practical I	--	8	8	4	3-8*	80	-20	100	--	40
6	II	Practical II	--	8	8	4	3-8*	80	-20	100	--	40
7	II	Seminar	2	--	2	1	--	--	25	25	10	
		Total	18	16	34	25	--	--	--	625	170	80

Sr.No.	Semester	Theory Paper/ Practical	Teaching Scheme (Hrs/week)			Credits	Examination Scheme					
			Th.	Pr.	Total		Duration (Hrs)	Max. Marks		Total Marks	Min. Passing Marks	
								External Marks	Internal Marks		Th.	Pr.
1	III	I	4	--	4	4	3	100	--	100	40	--
2	III	II	4	--	4	4	3	100	--	100	40	--
3	III	III	4	--	4	4	3	100	--	100	40	--
4	III	IV	4	--	4	4	3	100	--	100	40	--
5	III	Practical I	--	8	8	4	3-8*	80	20	100	--	40
6	III	Practical II	--	8	8	4	3-8*	80	20	100	--	40
7	III	Seminar	2	--	2	1	--	---	25	25	10	
		Total	18	16	34	25	--	--	--	625	170	80

Sr.No.	Semester	Theory Paper/ Practical	Teaching Scheme (Hrs/week)			Credits	Examination Scheme					
			Th.	Pr.	Total		Duration (Hrs)	Max. Marks		Total Marks	Min. Passing Marks	
								External Marks	Internal Marks		Th.	Pr.
1	IV	I	4	--	4	4	3	100	--	100	40	--
2	IV	II	4	--	4	4	3	100	--	100	40	--
3	IV	III	4	--	4	4	3	100	--	100	40	--
4	IV	IV	4	--	4	4	3	100	--	100	40	--
5	IV	Practical I	--	8	8	4	3-8*	80	20	100	--	40
6	IV	Project	--	8	8	4	3-8*	80	20	100	--	40
7	IV	Seminar	2		2	1	--	--	25	25	10	--
		Total	18	16	34	25	--	--		625	170	80

Note: Th=Theory; Pr=Practical; *=If required, for two days

Minimum marks for passing will be 40%. Candidates has to pass separately, in theory/seminar (Internal Assessment) /Practical

1) In each semester student will have to give seminar on any topic relevant to the syllabus encompassing the recent trends and development in that field. The topic of the seminar will be decided at the beginning of each semester in consultation with the supervising teachers. The student has to deliver the seminar for one hour duration which will be followed by discussion. The seminar will be open to all the teachers of the department,

invitees, and students and will be assessed by the teacher in-charge and two teachers deputed by the Head of the Department.

2) The student will have to carry out the research based project work in lieu of practical in the fourth semester in the department or depending on the availability of placement; he/she will be attached to any of the national/regional/private research institute/organization for the duration of the fourth semester. The student will be randomly allotted the priority number for the selection of the supervisor at the end of third semester. The student in consultation with supervisor will finalize the topic of the project work at the end of the third semester.
3) Each theory paper is supposed to cover minimum 60 clock hours (15 clock hours per unit) of teaching and 240 clock hours per semester for all the four papers.
4) One credit course of theory will be of one clock hour per week of 25 marks running for 15 weeks and four credit course of theory will be four clock hours per week of 100 marks running for 15 weeks.
5) One credit course of practical will consist of two clock hours of laboratory exercise of 25 marks running for 15 weeks and four credit course of practical will consist of eight hours of laboratory exercise of 100 marks running for 15 weeks.

Appendix-2

Schemes of teaching and examinations under credit Grade semester pattern for M.Sc. Programme in Mathematics in the faculty of science.

Sr.No.	Semester	Theory Paper/ Practical	Teaching Scheme (Hrs/week)		Credits			Examination Scheme					
			Theory	Total	Th	Int.* Ass	Total	Duration (Hrs)	Max. Marks		Total Marks	Min. Passing Marks	
									External Marks	Internal Ass.		Th.	Int. Ass.
1	I	I	5	5	4	1	5	3	100	25	125	40	10
2	I	II	5	5	4	1	5	3	100	25	125	40	10
3	I	III	5	5	4	1	5	3	100	25	125	40	10
4	I	IV	5	5	4	1	5	3	100	25	125	40	10
5	I	V	5	5	4	1	5	3	100	25	125	40	10
		Total	25	25	20	05	25		500	125	625	200	50

Sr.No.	Semester	Theory Paper/ Practical	Teaching Scheme (Hrs/week)		Credits			Examination Scheme					
			Theory	Total	Th	Int. * Ass	Total	Duration (Hrs)	Max. Marks		Total Marks	Min. Passing Marks	
									External Marks	Internal Ass.		Th.	Int. Ass.
1	II	I	5	5	4	1	5	3	100	25	125	40	10
2	II	II	5	5	4	1	5	3	100	25	125	40	10
3	II	III	5	5	4	1	5	3	100	25	125	40	10
4	II	IV	5	5	4	1	5	3	100	25	125	40	10
5	II	V	5	5	4	1	5	3	100	25	125	40	10
		Total	25	25	20	05	25		500	125	625	200	50

Sr.No.	Semester	Theory Paper/ Practical	Teaching Scheme (Hrs/week)		Credits			Examination Scheme					
			Theory	Total	Th	Int. * Ass	Total	Duration (Hrs)	Max. Marks		Total Marks	Min. Passing Marks	
									External Marks	Internal Ass.		Th.	Int. Ass.
1	III	I	5	5	4	1	5	3	100	25	125	40	10
2	III	II	5	5	4	1	5	3	100	25	125	40	10
3	III	III	5	5	4	1	5	3	100	25	125	40	10
4	III	IV	5	5	4	1	5	3	100	25	125	40	10
5	III	V	5	5	4	1	5	3	100	25	125	40	10
		Total	25	25	20	05	25		500	125	625	200	50

Sr.No.	Semester	Theory Paper/ Practical	Teaching Scheme (Hrs/week)		Credit			Examination Scheme					
			Theory	Total	Th	Int. * Ass	Total	Duration (Hrs)	Max. Marks		Total Marks	Min. Passing Marks	
									External Marks	Internal Ass.		Th.	Int. Ass.
1	IV	I	5	5	4	1	5	3	100	25	125	40	10
2	IV	II	5	5	4	1	5	3	100	25	125	40	10
3	IV	III	5	5	4	1	5	3	100	25	125	40	10
4	IV	IV	5	5	4	1	5	3	100	25	125	40	10
5	IV	V	5	5	4	1	5	3	100	25	125	40	10
		Total	25	25	20	05	25		500	125	625	125	50

***Internal Assessment:** For the purpose of internal assessment the department will conduct three tests (with equal weightage of marks). Best two scores of a student in these tests will be considered to obtain the internal assessment score of that student.

Appendix-3

DISSERTATION/PROJECT WORK

SCHEME/GUIDELINES FOR THE STUDENTS, SUPERVISORS AND EXAMINERS:

Every student is required to carry out Experimental/Field Based Project Work (this is in lieu of practical II of semester IV) on a related research topic of the subject/ course. It must be an original work and must indicate some degree of experimental work. On the basis of this work, student must submit the project Report9typed and properly bound) in two copies at least one month prior to commencement of the final Practical/lab examination of Semester IV. The project report shall comprise of Introduction, Material and Methods, Result, Discussion, Summary, conclusion and, Reference along with declaration by candidate that the work is original and not submitted to any other University or Organization for award of degree and certificate by the supervisor and forwarded through head/Course-coordinator/Director of the Department/Centre or the principle of the college.

The supervisor for the Experimental Project Work shall be from the following.

A person selected by the duly constituted Selection Committee in the relevant subject and approved by the University, exclusively for P.G. course.

OR

A person selected by the duly constituted Selection Committee of the University approved by the University and appointed as a full time regular teacher at U.G. level in the relevant subject and having at least 15 years teaching experience.

OR

A person selected by duly constituted Selection Committee of Gondwana University Gadchiroli, approved by the University and appointed as full time regular teacher at UG level having M. Phil degree with 10 years teaching experience at UG level, or a person who has Ph.D. Degree, with 5 years teaching experience in relevant subject.

OR

Scientists of National Laboratories/ Regional Research Laboratories who are approved by dint of their appointment in such facilities by the Union Government/the State Government/Gondwana University/Other Universities recognized by UGC with at least in the Grade Pay of Rs.8000/-

The topic for project work will be assigned to the student by supervisor at the beginning of third semester. The topic will be forwarded to the controller of examination by the head of the department. The project Work will carry total 90 marks and will be evaluated by both external and internal examiner in the respective

Department/Center/Affiliated College. The examiners will evaluate the Experimental Project Work taking into account the 1) coverage of subject matter, 2) Arrangement and presentation, 3) References and 4) Application and original experimental contribution of candidate.

For Project work : 80 Marks
For Viva-Voce : 20 Marks

Total : 100 Marks

Appendix-4

A. Pattern of Question Paper

1. There will be four units in each paper.
2. Question Paper will be consists of five questions.
3. Four questions will be on four units with internal choice (One question on each unit).
4. Fifth question will be compulsory with questions from each of the four units having equal weightage.
5. Maximum marks of each paper will be 100.Each paper will be of 3 hours duration.
6. Projects shall be evaluated by both internal and external examiner.
7. Practical/laboratory examination shall be of 100 marks.Distribution of marks shall be 20 internal and 80 external.
8. Minimum passing marks in each head (i.e. Theory, Practical and Internal assessment) will be 40%.

B. Absorption scheme:

1. While switching over to semester system, the failure students of annual pattern will be given three chances to clear the examination.

2. The candidates who have cleared first year annual pattern examination in the subject shall get admission to third semester directly by matchable scheme. However, candidates who are allowed to keep term will not eligible for admission to third semester unless they clear all the papers and practicals of first year annual pattern examination.

3. The unsuccessful students of old course shall be permitted to appear for higher class as per the new course examination of the post graduate programme (semester, credit and grade system) provided that they submit a certificate from the Head of Department/ Principal of the college stating that they have satisfactorily undergone a course of study in all the subjects of the new course as per the absorption scheme of a particular post graduate programme.
4. The absorption scheme of the post graduate programme will be effective till the introduction of new syllabus with the new absorption scheme.

CREDIT-GRADE SYSTEM FOR P.G. (M.Sc.)

Course credit:

It is the unit of measurement of course works. Each course shall have an integer number of credits which reflects its weightage. **One Credit means one period of one hour duration.**

The number of Credits of a course in a given semester shall ordinarily calculated as under
Number of Credits = L + T + P/2
Where L, T and P represent the number of Lecture, Tutorial and Practical hours per week. The fraction is to be rounded off to next integer value. One Practical / Lab without theory of one hour equal to one credit.

Grade:

It is the measure of performance quality. At the end of each semester, a student is awarded a letter grade in each of his/her course taking into account his/her performance based on the various component of evaluation i.e. on the basis of total marks in each theory course and in each laboratory course.

Performance Grading Scale

Marks Obtained (out of 100)	Grade	Grade Point
75 & above	O	6
74 to 65	A	5
64 to 55	B	4
54 to 50	C	3
49 to 45	D	2
44 to 40	E	1
Below 40	F	0

Grade Proposed Norms

O: Outstanding
A: Very Good
B: Good
C: Average
D: Satisfactory
E: Pass
F: Fail

Conversion of Marks to Grades and Calculations of GPA (Grade Point Average)

In the Credit and Grade Point System, the assessment of individual Courses in the concerned examinations will be on the basis of marks only, but the marks shall later be converted into Grades by some mechanism wherein the overall performance of the Learners can be reflected after considering the Credit Points for any given course. However, the overall evaluation shall be designated in terms of Grade. There are some abbreviations used here that need understanding of each and every parameter involved in grade computation and the evaluation mechanism. The abbreviations and formulae used are as follows:-

Abbreviations and Formula's Used:-

G: Grade

GP: Grade Points

C: Credits

CP: Credit Points

CG: Credits X Grades (Product of credits & Grades)

∑CG: Sum of Product of Credits & Grades points

∑C: Sum of Credits points

$$SGPA = \frac{\sum CG}{\sum C}$$

Semester Grade point average (SGPA)

It is indicative of performance of a student in the given semester. The Grade Point average for a semester is obtained by adding the products of Actual Grade points and relative weightage for different courses as shown in the scheme for respective semester and dividing the total credit hours for that semester as illustrated below.

$$\mathbf{SGPA = [C_iG_i + C_{ii}G_{ii} + \ldots\ldots + C_nG_n] / (C_i + C_{ii} + \ldots + C_n)}$$

SGPA: Semester Grade Point Average shall be calculated for individual semesters. (It is also designed as GPA)

Cumulative Grade Point Average (CGPA)

The cumulative Grade Point Average (CGPA) is indicative of the overall academic performance of a student in all the courses registered up to and including the latest completed semester. It is the cumulative

total of the products of actual grade point and its weightage upto last semester divided by total credits of all the semesters.

$$CGPA = \sum_{i=0}^{n} c_i \, g_i \sum_{i=0}^{n} c_i$$

CGPA: Cumulative Grade Point Average shall be calculated for the entire Program by considering all the semesters taken together.

A student will be allotted a cumulative Grade Point Average (**CGPA**) after clearing all the four semesters. Again as there is no differential weight system for semesters, the CGPA of a student will be Average of the four SGPA's of that student.

Note: If a student is permitted to repeat any semester/course, the new letter grade will replace the old letter grade in the computation of the CGPA.

After calculating the SGPA for an individual semester and the CGPA for entire program, the value can be matched with the grade in the Grade Point table as per the Seven (07) Points Grading System and expressed as a single designated GRADE such as O, A, B, etc.

Final Grade Points

Grade Points	Final grade
5.0 to 6.0	O
4.50 to 4.99	A
3.50 to 4.49	B
2.50 to 3.49	C
1.50 to 2.49	D
0.50 to 1.49	E
0.00 to 0.49	F

The formula for GPA will be based on Weighted Average. The final GPA will not be printed unless a student passes courses equivalent to minimum 100 Credits.

If the GPA is higher than the indicated upper limit in the three decimal digit, then the student be awarded higher final grade (e.g. a student getting GPA of 4.492 may be awarded 'A').

While declaring the result, the existing relevant ordinances are applicable. For verification and revaluation existing rules will be applicable.

The description for each of the grades will be as follows:

Grade Proposed Norms

O: Outstanding: Excellent analysis of the topic, (75% and above)

Accurate knowledge of the primary material, wide range of reading, logical development of ideas, Originality in approaching the subject, Neat and systematic organization of content, elegant and lucid style;

A: Very Good: Excellent analysis of the topic, (65 to 74%)

Accurate knowledge of the primary material, acquaintance with seminal publications, logical development of ideas, Neat and systematic organization of content, effective and clear expression;

B: Good: Good analysis and treatment of the topic (55 to 64%)
Basic knowledge of the primary material, logical development of ideas, Neat and systematic organization of content, effective and clear expression;

C: Average: Some important points covered (50 to 54%)
Basic knowledge of the primary material, logical development of ideas, Neat and systematic organization of content, good language or expression;

D: Satisfactory: Some points discussed (45 to 49%)
Basic knowledge of the primary material, some organization, acceptable language or expression;

E: Pass: Any two of the above (40 to 44%)

F: Fail: None of the above (below 40)

Reporting of Learners Performance (Grade Card)

The grade cards can be issued to the Learners on the basis of the above calculations in a uniform format given by the University. The grade cards of the Examinations conducted by the University shall be signed by the Controller of Examinations only as per the provision in the University Act.

The grade card will reflect the marks obtained by the Learner, Credit points of the individual Course as well as Semester, conversion of marks into grades, calculation of SGPA for each individual semester and the CGPA for the complete Program at the end of the final semester.

The grade card shall be issued with SGPA & Grade in case of middle semesters or CGPA & Grade in case of final semester only to those learners who have completed all the semesters of that program successfully. However, the learners those who are unsuccessful or carry the courses under ATKT rule will not get the SGPA & Grade in case of middle semesters or CGPA & Grade in case of the final semester unless and until they successfully complete their pending courses or semesters under the concerned program.

I, further direct that the aforesaid Direction shall come into force from the date of issuance and shall remain in force till the relevant Ordinance comes into being in accordance with the provisions of the Maharashtra Universities Act, 1994 or is repealed by an issuance of another Direction.

Paper Pattern and Evaluation Scheme

Theory- 1) Five theory papers for every Semester each of 80Marks with credits 4 each and time duration of each Question paper is of 3 clock hours.

2) Four units on each paper.

3) One question on each unit.

Internal Assessment- TOTALMarks 100 Per Semester and 20 on each paper with credits 1each.
Considering Students Attendance, Class Performance,

Unit test, Home Assignments, Class seminar, Research Projects

Question Paper Pattern:

Time 3 Hours All questions are compulsory Total Marks: 80

Question I (20 Marks)

Unit I A) 10Marks
B) 10 Marks
OR
Unit I C) 10 Marks
D) 10 Marks

Question II (20 Marks)

Unit II A) 10 Marks
B) 10 Marks
OR
Unit II C) 10 Marks
D) 10 Marks

Question III : (20 Marks)

Unit III A) 10 Marks
B) 10 Marks
OR
Unit III C) 10 Marks
D) 10 Marks

Question IV: (20 Marks)

Unit IV A) 10 Marks }
B) 10 Marks }
OR
Unit IV C) 10 Marks }
D) 10 Marks }

Evaluation Scheme

1. Theory and Internal Assessment will be separate heads of passing.
2. To pass the internal assessment, student must secure at least 8 marks out of 20 in each paper. In case a student fail in Internal assessment he/she will have to submit the same before the commencement of next examination.
1. In case a student fails in theory but passes in IA, the marks of these carried over in each paper.
2. Total marks must be 35 percent in each theory paper for a student to be declared pass.

Semester pattern scheme of examination for M. Sc. In Mathematics

Semester	Papers	University Exam	Internal Assessment	Total	Grand Total

		Marks - Credits	Marks - Credits	Marks - Credits	Marks – Credits 2000 - 100
1	4 Compulsory 1 Elective	5x80 - 5x4	5x20 - 5x1	500 - 25	
2	4 Compulsory 1 Elective	5x80 - 5x4	5x20 - 5x1	500 - 25	
3	2 Compulsory 3 Elective	5x80 - 5x4	5x20 - 5x1	500 - 25	
4	2 Compulsory 3 Elective	5x80 - 5x4	5x20 - 5x1	500 - 25	

Minimum Passing marks for each paper will be 40 (minimum 32 in university examination of the paper and minimum of 8 in the internal examination for that paper.)

A) Pattern of Question Paper

1. Four units in each paper
2. One question on each unit
3. Maximum marks for each paper 80
4. Duration of question paper is of 3 hours

Board of Studies in Physics
FACULTY OF SCIENCE
GONDWANA UNIVERSITY, GADCHIROLI
Proposed Syllabus of

M.Sc. First Year (Semester Pattern)

SUBJECT - PHYSICS

Semester I &Semester II

GONDWANA UNIVERSITY GADCHIROLI

Syllabus of M.Sc. in Physics to be implemented from 2012-2013 SEMESTER PATTERN

Semester pattern scheme of examination for M.Sc. in Physics

Semester	Papers	University Exam Marks -Credits	Internal Assessment Marks - Credits	Practicals Marks - Credits	Total Marks - Credits	Grand Total Marks- Credits
1	4 Compulsory	4X75- 16	2X10 - 1	2X90 - 8	500 - 25	**2000 - 100**

2	4 Compulsory	4X75- 16	2X10 - 1	2X90 - 8	500 - 25	
3	2 Compulsory 1 Optional 1 Elective	4X75- 16	2X10 - 1	2X90 - 8	500 - 25	
4	2 Compulsory 1 Optional 1 Elective	4X75- 16	2X10 - 1	1X90 - 4 Project 1x90-4	500 - 25	

Minimum Passing marks for each paper will be 40 % (minimum 30 in theory papers, 36 in each practical, 4 in each internal assessment).

A) Pattern of Question Paper

1. Four units in each paper
2. One question on each unit
3. Q. 5 will be short answer covering all four units.
4. Duration of question paper is of 3 hours
5. Project and Practicals will be evaluated by internal and external examiners. They will have equal share in awarding the marks.

B) Internal assessment

For the purpose of internal assessment the department will conduct three tests (with equal weight of marks). Best two scores of a student in these three tests will be considered to obtain the internal assessment score of that student.

C)Absorption Scheme

1. While switching over to semester system, failure students should get three chances to clear yearly pattern.

2. Students passing First year annual pattern shall get admission to third semester directly.

3. To get admission to the third semester, students should clear first semester including theory as well as practical. While appearing for fourth semester exam, a student must have cleared second semester.

D)Grade Point Average (GPA) and Course Grade Point Average (CGPA)

On clearing a paper, based on the cumulative score (out of 100) in that paper, a student will be given **Grade Point Average (GPA)** (Maximum of 10, and minimum of 4) for that paper on the following basis.

Score (out of 100)	**Grade Point Average** (out of 10)
90 to 100	10
80 to 89	09
70 to 79	08
60 to 69	07
55 to 59	06
50 to 54	05
40 to 49	04
Below 40	00 or fail

On clearing all the five papers in a semester, a student will be allotted a **Semester Grade Point Average (SGPA**) for that particular semester. As the pattern given above does not have differential weights for papers, the SGPA of a student for a particular semester will be the simple average of the GPA's for all the five papers.

A student will be allotted a **Course Grade Point Average (CGPA)** after clearing all the four semesters. Again as there is no differential weight system for semesters, the CGPA of a student will simply be the average of the four SGPA's of that student.

The CGPA can be converted to the usual/ conventional divisions in the following way.

CGPA	**Equivalent class/division**

9.00- 10.00	First Class (Outstanding)
8.00 to 8.99	First Class (Excellent)
7.00 to 7.99	First Class with distinction
6.0 to 6.99	First Class
5.50 to 5.99	Higher Second Class
5.00 to 5.49	Second Class
4 to 4.99	Pass class

M.Sc. GEOLOGY

Semester I

Theory Paper / Practical	Title	Teaching Scheme (Hrs/ week)			Credits	Examination Scheme					
		Th	Pr.	Total		Duration (Hrs)	Max. Marks		Total Marks	Min. Passing Marks	
							External	Internal		Th	Pr.

Paper -I	Mineralogy and Crystallography (3+1)	4		4	4	3	100		100	40	
Paper -II	Igneous Petrology (4)	4		4	4	3	100		100	40	
Paper -III	Metamorphic Petrology and Precambrian Geology (3+1)	4		4	4	3	100		100	40	
Paper -IV	Stratigraphy and Indian Geology (2+2)	4		4	4	3	100		100	40	
Practical I	Mineralogy, Crystallography, Igneous Petrology (Marks: 75 Pract. Exam. + 05 Viva-voce + 20 Internal Assessment and Class Record)		8	8	4	3	80	20	100		40
Practical II	Metamorphic Petrology and Stratigraphy (Marks: 75 Pract. Exam. + 05 viva-voce + 20 Internal Assessment and Class Record)		8	8	4	3	80	20	100		40
	Seminar	2		2	1	---		25	25	10	
	Total	**18**	**16**	**34**	**25**				**625**	**170**	**80**

M.Sc. GEOLOGY

Semester II

Theory Paper/ Practical	Title	Teaching Scheme (Hrs/ week)			Credits	Examination Scheme					
		Th	Pr.	Total		Duration (Hrs)	Max. Marks		Total Marks	Min. Passing Marks	
							External	Internal		Th	Pr.
Paper-I	Sedimentology, Geostatistics and Computer Application in Geology (3+1)	4		4	4	3	100		100	40	
Paper-II	Paleontology and Applied Paleobiology (3+1)	4		4	4	3	100		100	40	
Paper-III	Geochemistry &Instrumentation Techniques (3+1)	4		4	4	3	100		100	40	
Paper-IV	Structural Geology, Geodynamics & Tectonics (3+1)	4		4	4	3	100		100	40	
Practical I	Sedimentology, Geostatistics, Computer Application in Geology, Paleontology and Applied Paleobiology (SGCPAP) (Marks: 75 Pract. Exam. + 05 viva-voce + 20 Internal Assessment and Class Record)		8	8	4	3	80	20	100		40
Practical II	Geochemistry, Structural Geology and Geological Field Work and Mapping (Marks: 55 Pract. Exam + 05 Viva-voce + 20 Field Work & Mapping + 20 Internal Assessment and Class Records)		8	8	4	3	80	20	100		40
	Seminar	2		2	1	---		25	25	10	
	Total	**18**	**16**	**34**	**25**				**625**	**170**	**80**

FIELD WORK:

Each candidate must carry out field work of two to three weeks duration in igneous / sedimentary / metamorphic (including structurally deformed) terrain. The field report should be based on the mapping as well as laboratory work on the rock samples collected during the field work. The field work should be treated as a part of practical II examination of semester II and the field report shall be assessed by field excursion In-charge.

APPENDIX – 1

Scheme of teaching under credit based semester system for M. Sc. Program in BOTANY.

M.Sc. I

Sr. No.	Semester	Course code / Paper	Course / paper	Title of course/ paper	Teaching Scheme		
					Theory (Hrs.)	Practical (Hrs.)	No. of Credits
1	One	BOT T I	I	Microbiology Algae & Fungi	5	4	4
2	One	BOT T II	II	Bryophytes &Pteridophytes	5	4	4
3	One	BOT T III	III	Gymnosperms and Paleobotany	5	4	4
4	One	BOT T IV	IV	Cytology& Genetics	5	4	4
6	One	BOT P I	PRACT.I	Algae, Fungi, Bryophytes	--	-	4
7	One	BOT P II	PRACT.II	Pterido, Gymno-Paleo, Cytology, Genetics	--	-	4
8	One	**Seminar –I**					
8	Two	BOT T V	I	Plant Physiology and Biochemistry	5	4	4
9	Two	BOT T VI	II	Plant Development and Reproduction	5	4	4
10	Two	BOT T VII	IIII	Cell & Molecular Biology- I	5	4	4
11	Two	BOT T VIII	IV	Angiosperms - I	5	4	4
13	Two	BOT P III	PRACT. III	Plant Physiology , Biochemistry, and Growth & Dev.	--	-	4
14	Two	BOT	PRACT.	Cell & Mol. Bio. I	--	-	4

		P IV	IV	and Angio- I			
	Two	**Seminar –II**					

Scheme of teaching under credit based semester system for M. Sc. Program in BOTANY.

M.Sc. II

Sr. No.	Semester	Course code / Paper	Course / paper	Title of course/ paper	Teaching Scheme		
					Theory (Hrs.)	Practical (Hrs.)	No. of Credits
15	Three	BOT T IX	I	Plant Ecology	5	4	4
16	Three	BOT T X	II	Cell and Molecular Biology - II	5	4	4
17	Three	BOT T XI	III	Plant Biotechnology	5	4	4
18	Three	BOT T XII	IV	Angiosperms - II	5	4	4
20	Three	BOT P V	PRACT. V	Ecology, Cell & Mol. Biology-II	--	-	4
21	Three	BOT P VI	PRACT. VI	Plant biotechnology & Taxonomy - II	--	-	4
	Three	**Seminar - III**					1
22	Four	BOT T XIII	I	Plant Conservation, IPR&Ethnobotany	5	4	4
23	Four	BOT T XIV	II	PRU, Biosafety, Bioethics, Biostat. & Pl. Breed.	5	4	4
24	Four	BOT T XV	III	Special paper-I	5	4	4
25	Four	BOT T XVI	IV	Special paper-II	5	4	4
27	Four	BOT P VII	PRACT. VII	Special I & II	--	--	4
28	Four	BOT P VIII	Project		--	-	4
		Seminar IV					1

1. In each semester student will have to give seminar on any topic relevant to the syllabus encompassing the recent trends and development in that field. The topic of the seminar will be decided at the beginning of each semester in consultation with supervising

teachers. The students have to deliver the seminar on the hour duration which will be followed by discussion. The seminar will be open to all the teachers of the department invitees and students.

2. The students will have to carry out the research based project work in lieu of practical in the fourth semester in the department or depending on the avaibility of placement; he/she will be attached to any of the national/ regional/ private research institute / organization for the duration of the fourth semester. The student will be randomly allotted the priority number for the selection of the supervisor at the end of the third semester. The student in consultation with supervisor will finalize the topic of the project work at the third semester.
3. These course can be taught by person having post graduate qualification in relevant / equivalent subjects/ or having teaching / research experience in that particular area.

APPENDIX – 2

Scheme of the examination under credit based semester system for M. Sc. Program in BOTANY.

M.Sc. I

SN	Semester	Course / Paper	Title of paper	Duration of paper / hrs.		Maxi-mum marks	Total grade
				T	P		
1	One	I	Microbiology, Algae and Fungi	3		75	4
2	One	II	Bryophytes and Pteridophytes	3		75	4
3	One	III	Gymnosperms and Paleobotany	3		75	4
4	One	IV	Cytology and Genetics	3		75	4
5	One	Pract. I	Microbiology, Algae and Fungi and Bryophytes		6	90	4
6	One	Pract. II	Pteridophytes, Gymnosperms, Paleobotany, Cytology and Genetics		6	90	4
7	One		Seminar		1	20	1
8	Two	V	Plant physiology and Biochemistry	3		75	4
9	Two	VI	Plant Development and Reproduction	3		75	4

10	Two	VII	Cell and Molecular Biology- I	3		75	4
11	Two	VIII	Angiosperms- I	3		75	4
12	Two	Prac. III	Plant physiology, Biochemistry, Plant Development and Reproduction		6	90	4
13	Two	Prac. IV	Cell and Molecular Biology- I and Angiosperms- I		6	90	4
14	Two		Seminar		1	20	1

Scheme of the examination under credit based semester system for M. Sc. Program in BOTANY.

M.Sc. II

Sr. No.	Semester	Course / Paper	Title of paper	Duration of paper / hrs.		Maxi-mum marks	Total grade
15	Three	IX	Plant Ecology	3		75	4
16	Three	X	Cell and Molecular Biology- II	3		75	4
17	Three	XI	Plant Biotechnology	3		75	4
18	Three	XII	Angiosperms- II	3		75	4
19	Three	Pract. V	Plant ecology, Cell and Molecular Biology- II		6	90	4
20	Three	Pract. VI	Plant Biotechnology and Angiosperms- II		6	90	4
21	Three		Seminar		1	20	1
22	Four	XIII	Plant conservation, IPR and Ethnobotany	3		75	4
23	Four	XIV	Pl. Res. Uti., Bioethics, Biosafety, Pl. Breed. &Biostat.	3		75	4

24	Four	XVIII	Special Paper I	3		75	4
25	Four	XIX	Special Paper II	3		75	4
26	Four	Pract. VII	Special I & II		6	90	4
27	Four		Project		1	90	4
28	Four		Seminar		1	20	1

1. In each semester student will have to give seminar on any topic relevant to the syllabus encompassing the recent trends and development in that field. The topic of the seminar will be decided at the beginning of each semester in consultation with supervising teachers. The students have to deliver the seminar on the hour duration which will be followed by discussion. The seminar will be open to all the teachers of the department invitees and students.
2. The students will have to carry out the research based project work in lieu of practical in the fourth semester in the department or depending on the avaibility of placement; he/she will be attached to any of the national/ regional/ private research institute / organization for the duration of the fourth semester. The student will be randomly allotted the priority number for the selection of the supervisor at the end of the third semester. The student in consultation with supervisor will finalize the topic of the project work at the third semester.
3. The regular full time teacher of the department / contributory teacher approved by university / scientist of government / private research laboratory appointed by university as a contributory teacher and having M.Phil. or Ph. D. degree can supervise the project work of the student .

APPENDIX – 3

Rules and Regulations for the Credit and Semester system in Post Graduate Teaching Department Botany of University.

I .GENERAL ADMINISTRATION OF THE CREDIT AND SEMESTER SYSTEM.

1. There shall be a Coordinator committee for Credit and Semester system, with Head of the Department as its chairperson, consisting of not less than three teachers of the department .the committee will be nominated by Vice Chancellor. This committee will , from time to time take appropriate decisions. This committee will forward these recommendation to appropriate authority, I case such approvals are essential.
2. Any issue not covered by this set of Rules and Regulations , but covered by the Rules previously existing shall be governed by the rules existing before the commencement of these Rules .
3. Any issue arising out of the implementation of the Credit and Semester system which are of the specific nature , which dose not need the approval of any authority and Vice Chancellor shall be resolved by the departmental coordination committee.

4. The coordination committee shall from time to time consider suggestion received from Faculty , Student and Examination Section and wherever the matter pertains to the overall functioning of the Credit and Semester system, shall recommended new rules , modification in existing rules or clarification there of .

II. ADMISSION AND CONDUCTION OF THE CREDIT SYSTEM .

1. The M. Sc. Degree of Botany will be awarded who complete the total of 100 credits (sciences) in the minimum of two years .
2. Each credit will be equivalent to (i.e. 15 hrs.).
3. The department can announce the seminar course s to introduce student to research done by the faculty. Seminar credits are to be conducted through discussion and presentation by the students and the personal guidance of the teacher . Seminar shall not exceed a maximum 2 credits. These credits will be evaluated as internal assessment .
4. The Departmental Coordination Committee-
    a. Will nominate the faculty of each course to be taught in the department .
    b. Will approve a plan for evaluation prepared by the faculty for the credits concern as a internal continuous assessment of 50 % from among the 12 given in the III below. Ordinarily the teacher may opt for an internal assessment procedure other than the written exams;
    c. Will evolve the norms of evaluating oral examination whenever necessary in relation to term paper assignment ;
    d. Will take appropriate decisions in the cases of readmissions of student during the transition from old to revised syllabus by deciding which credit from the revised syllabus was equivalent to credit from the old syllabus;
    e. Will revise the syllabus at least five years.
5. There will be no mid-way change to over to credit system to noncredit or external examoination or vice versa.

III.EXAMINATION RULES

1. Each course will have
    a. 50 % of marks as a semester end examination of three hours.
    b. 50 % marks for internal (i.e. in- semester) assessment .

2 .the student has to obtain forty percent marks in the combined examination of in-Semester
assessment and semester – End assessment with a minimum passing of 30 % in both these separately .

3. To pass, a student shall have to get minimum aggregate 40% marks (E and above on grade point scale) in each course.
4. If a student misses an internal assessment examination he/ she will have a second chance with the permission of the teacher concerned. Such a second chance with the permission of the teacher concerned .such a second chance shall not be the right of the student ; it will be the discretion of the teacher concerned to give or not give second chance to a student to appear for internal assessment .

5. Students who have failed semester –End exam may reappear for the semester end exam only twice in subsequent period . the student will be finally declared as failed if he/she does not pass in all credits with in a total period of four years . After that such students will have to seek fresh admission as per admission rules prevailing at that time .
6. A student cant not register for the third semester, if he/ she fails to complete all credits of the total credits expected to be ordinarily completed with in two semesters.
7. Internal marks will not change. A student can not repeat internal assessment .
8. There shall be revaluation of the answer script of semester end theory examination only as per the excixting ordinance in force. There shall not be revaluation of the internal assessment papers and practical examination.
9. While marks will be given for all examination, they will be converted into grades. The semester end and final grade sheets and transcripts will have only grades and grade point average.
10. The project will consist of not more than ten percent of the total credits for the Degree course .
11. Each credit will have an internal (continuous) assessment of 50% of marks and a teacher must select a variety of procedures for examination such as:
    i. Written test and / or Mid term test (not more than one for each course);
    ii. Term paper ;
    iii. Journal / lecture / library notes ;
    iv. Seminar presentation ;
    v. Short quizzes ;
    vi. Assignments ;
    vii. Extension work;
    viii. Research projects by individual student or group of students;
    ix. An open book test (with the concern teacher deciding what books are to be allowed for this purpose).
12. The system for evaluation will be as follows: Each assignment will be evaluated in terms of grades. The grades for separate assignments and the final semester end examination will be added together and then converted into grade and later a grade point average. Results will be declared for each semester and final examination will give grade and grade point average.

Marks (out of 100)	**Grade**	**Grade point**
100 to 75	O: Out standing	06
74 to 65	A: Very Good	05
64 to 55	B: Good	04
54 to 50	C: Average	03

49 to 45	D: Satisfactory	02
44 to 40	E: Pass	01
39 to 00	F: Fail	00

13. Final Grade Points

Grade Points	**Final Grades**
5.0 TO 6.0	O
4.50 TO 4.99	A
3.50 TO 4.49	B
2.50 TO 3.49	C
1.50 TO 2. 49	D
0.50 TO 1.49	E
0.00 TO 0.49	F

14. Calculation of average grade points and cumulative grade points average (CGPA) :

Grade Point Average = Total Grade Point Earned X Credits hrs. for each course

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Total Credit Hours

Cumulative Grade Point Average

APPENDIX A

M.Sc. Biochemistry Syllabus (Semester Pattern): Consolidated Scheme

Class	**Semester**	**Course Code**	**Name of Paper**	**Clock hour /wk**	**Credits**	**Max. Marks**	**Min. Passing Marks**
M.Sc. I Biochemistry	**Semester 1**	**BCH1T001**	**Biophysical Techniques**	**4 L/wk**	**4**	**75**	**30**
		BCH1T002	**Protein Biochemistry**	**4 L/wk**	**4**	**75**	**30**
		BCH1T003	**Advanced Enzymology**	**4 L/wk**	**4**	**75**	**30**

		BCH1T004	Plant Biochemistry	4 L/wk	4	75	30
		BCH1LAB1	Analytical Biochemistry and Enzymology	8 L/wk	4	90	36
		BCH1LAB2	Plant Biochemistry	8 L/wk	4	90	36
		BCH1INT1	Internal Assessment (Seminar)	2 L/wk	1	20	08
			Total	34	25	500	200
M.Sc. I Biochemistry	Semester2	BCH2T005	Cellular and Molecular Immunology	4 L/wk	4	75	30
		BCH2T006	Cell and Molecular Biology Techniques	4 L/wk	4	75	30
		BCH2T007	Clinical Biochemistry	4 L/wk	4	75	30
		BCH2T008	Molecular Biology	4 L/wk	4	75	30
		BCH2LAB3	Cell and Molecular Biology	8 L/wk	4	90	36
		BCH2LAB4	Clinical Biochemistry	8 L/wk	4	90	36
		BCH2INT2	Internal Assessment (Journal Club)	2 L/wk	1	20	08
			Total	34	25	500	200
M.Sc. II Biochemistry	Semester3	BCH3T009	Advanced Molecular Biology	4 L/wk	4	75	30

		BCH3T010	**Biotechnology**	**4 L/wk**	**4**	**75**	**30**
		BCH3T011	**Immunobiology**	**4 L/wk**	**4**	**75**	**30**
		BCH3T012	**Biochemical & Environmental Toxicology**	**4 L/wk**	**4**	**75**	**30**
		BCH3LAB5	**Biotechnology and Immunological Techniques**	**8 L/wk**	**4**	**90**	**36**
		BCH3LAB6	**Biochemical & Environmental Toxicology**	**8 L/wk**	**4**	**90**	**36**
		BCH3INT3	**Internal Assessment (Pre Project Presentation for approval)**	**2 L/wk**	**1**	**20**	**08**
		Total		**34**	**25**	**500**	**200**
M.Sc. II Biochemistry	**Semester4**	**BCH4T013**	**Advanced Clinical Biochemistry**	**4 L/wk**	**4**	**75**	**30**
		BCH4T014	**Cell Biology and Cellular Biochemistry**	**4 L/wk**	**4**	**75**	**30**
		BCH4T015	**Nutrition and Biochemistry of Movement**	**4 L/wk**	**4**	**75**	**30**
		BCH4T016	**Biostatistics, Research Methodology, Technical Writing, Computers and Bioinformatics**	**4 L/wk**	**4**	**75**	**30**
		BCH4LA	**Biostatistics, Bioinformatics**	**8 L/wk**	**4**	**90**	**36**

		B7	**and Cell Biology**				
		BCH4PROJ	**Project Work**	**8 L/wk**	**4**	**90**	**36**
		BCH4INT4	**Internal Assessment (Final Project Presentation)**	**2 L/wk**	**1**	**20**	**08**
			Total	**34**	**25**	**500**	**200**
			Grand Total	**136**	**100**	**2000**	**800**

APPENDIX B

MASTER OF SCIENCE (BIOCHEMISTRY)

TWO YEAR (FOUR SEMESTERS) DEGREE COURSE

A) ELIGIBILITY CRITERIA FOR ADMISSION TO M. SC BIOCHEMISTRY SEMESTER PATTERN

1. For admission to first semester of M. Sc. Course in Biochemistry, the candidate must have passed B. Sc examination with Chemistry and Biochemistry as the subjects.
2. Only in case, the seats are vacant, the admission can be given to students who have passed B. Sc. Examination with Chemistry and Microbiology / Biotechnology / Zoology / Botany / Environmental Science as the subjects.
3. Reservation will be strictly as per the existing government norms.

B) ABSORPTION SCHEME TO M. SC BIOCHEMISTRY SEMESTER PATTERN

1. The candidates who have cleared first year annual pattern examination in the subject shall get admission to third semester directly. However, candidates who are allowed to keep term will not be eligible for admission to third semester unless they clear all the papers and practicals of first year annual pattern examination.
2. While switching over to semester system, the failure students of annual pattern will be given not more than three chances to clear the examination.
3. To get admission in the third semester, the student must clear the first semester examination, both in theory and practicals.

C) PATTERN OF QUESTION PAPER

1. Question paper will consist of five questions.
2. Four questions will be on four units with internal choice.
3. Fifth question will be compulsory with question from each of the four units having equal weightage and there will be no internal choice.
4. Maximum marks of each paper will be 75.
5. Each paper will be 03 hours duration.
6. Projects shall be evaluated by both internal and external examiners. 50% marks of project shall be given by internal and external examiner each.
7. Practlical/laboratory examination of 90 marks. Distribution of marks shall be 45 marks internal and 45 marks external.
8. Minimum passing marks in each head (i.e. Theory, Practical and Internal Assessment) will be 40%.

D) GRADE POINT AVERAGE (GPA) AND COURSE GRADE POINT AVERAGE (CGPA)

On clearing a paper, based on the cumulative score (out of 100) in that paper, a student will be given Grade Point Average (GPA) (Maximum of 10, and minimum of 4) for that paper on the following basis.

SCORE (out of 100)	GRADE POINT AVERAGE (out of 100)
90 to 100	**10**
80 to 89	**09**
70 to 79	**08**
60 to 69	**07**
55 to 59	**06**
50 to 54	**05**
40 to 49	**04**
Below 40	**00 or fail**

On clearing all the papers in a semester, a student will be allotted a Semester Grade Point Average (SGPA) for that particular semester. As the pattern given above does not have differential weights for papers, the SGPA of a student for a particular semester will be the average of the GPA's for all the papers.

A student will be allotted a Course Grade Point Average (CGPA) after clearing all the four semesters. Again as there is no differential weight system for semesters; the CGPA of a student will be the average of the four SGPA's of that student.

The CGPA can be converted to the usual/conventional divisions in the following way:

CGPA	Equivalent class/division
9.00 to 10.00	**First class (outstanding)**
8.00 to 8.99	**First class (excellent)**
7.00 to 7.99	**First class with distinction**

6.00 to 6.99	**First class**
5.50 to 5.99	**Higher second class**
5.00 to 5.49	**Second class**
4.00 to 4. 99	**Pass class**
Below 4.00	**Fail**

APPENDIX C

MASTER OF SCIENCE (BIOCHEMISTRY)
TWO YEAR (FOUR SEMESTERS) DEGREE COURSE

EXPERIMENTAL PROJECT WORK
SCHEME/GUIDELINES FOR THE STUDENTS, SUPERVISORS AND EXAMINERS

Candidates are required to submit an Experimental Project Work on Biochemistry or a related topic of Life Sciences.

The Experimental Project Work will be evaluated by both the internal and external examiner. The Project work will carry a total of 90 marks. Every candidate shall submit two copies of the Experimental Project Work (typed and properly bound) at least one month prior to commencement of the final Practical/ Laboratory Examination of M. Sc II (i.e. IVth Semester) through Head of the Department along with the certificate signed by the supervisor/guide and declaration by the candidate that the work is not submitted to any University or Organization for the award of the degree.

The supervisors for the Experimental Project Work shall be from the following:

A person selected by the duly constituted Selection Committee in the relevant subject and approved by the University, exclusively for PG Course.

OR

A person selected by the duly constituted Selection Committee of the University, and approved by the University, and appointed as a full time regular teacher at UG level in the relevant subject and having atleast 15 years teaching experience.

OR

A person selected by the duly constituted Selection Committee of the University, and approved by the University, and appointed as a full time regular teacher at UG level having M. Phil degree in the relevant subject with 10 years teaching experience at UG level, or a person who has a Ph.d degree with 05 years teaching experience in the relevant subject.

OR

Scientists of National Laboratories/ Regional Research Laboratories with a minimum Grade Pay of Rs. 8000/- and above and who are approved by the Union Government/ the State Government/ Gondwana University/ Other Universities recognized by UGC.

Students will be assigned the topic for the Experimental Project Work by their supervisors. Topics of Experimental Project Work shall be forwarded to Controller of Examination for the appointment of External Examiners. Experimental Project Work shall be evaluated by both external and internal examiner in the respective Department.

The examiners will evaluate the Experimental Project Work taking into account the following considerations:

1. Relevance of the topic
2. Innovations
3. Presentation of work
4. Reference work

Scheme of Examination
&
Syllabus

For Semester Pattern with Credit Based System
in
M. Sc. Electronics
(Under the Faculty of Science)

Approved by the Board of Studies in Electronics

Effective from the session2012-2013 and subsequently

Scheme of Examination
Semester with credit based system in
M. Sc. Electronics, in the Faculty of Science,
Gondwana University,Gadchiroli

Semester	**Papers Marks Theory Practical**	**Credits**	**Seminar Credit**	**Total Marks**	**Total Credits**
I	Theory 75x4 =300 Pract 90x2=180	(Theory) 4x4=16 (Pract) 2x4=8	1 (20 marks)	500	25
II	Theory 75x4 =300 Pract 90x2=180	(Theory) 4x4=16 (Pract) 2x4=8	1 (20 marks)	500	25
III	Theory 75x4 =300 Pract 90x2=180	(Theory) 4x4=16 (Pract) 2x4=8	1 (20 marks)	500	25
IV	Theory 75x4 =300 Pract 90x2=180	(Theory) 4x4=16 (Pract) 2x4=8	1 (20 marks)	500	25

Total Marks: 2000 **Credits: 100**

Note:

1. Minimum marks for passing 30 out of 75 in each theory paper
2. Minimum marks for passing 36 out of 90 in each practical

A)Pattern of Question Paper:

1. Four units in each paper.
2. One question on each unit.
3. Fifth question on all units.
4. Maximum marks of each paper 75
5. Project and practical shall be evaluated by internal and external examiners. 50% marks of project and practical shall be given by internal and external examiners.
6. Duration of question paper is of 3 hours

B)Absorption scheme:

1. While switch over to the semester system, failure students should get three chances to clear yearly pattern.
2. To get admission in the third semester students should clear first semester including theory as well as practical
3. First year annual pattern students shall get admission to third semester directly.

C) Grade Point Average (GPA) and Course Grade Point Average (CGPA)

On clearing a paper, based on the cumulative score (out of 100) in that paper, a student will be given Grade Point Average (GPA) (Maximum of 10 and minimum of 4) for that paper on the following basis:

Score (out of 100)	**Grade point average (Out of 10)**
90 to 100	10
80 to 89	09
70 to 79	08
60 to 69	07
55 to 59	06
50 to 54	05
40 to 49	04
Below 40	00 or fail

On clearing all the papers in a semester, a student will be allotted a Semester Grade Point Average (SGPA) for that particular semester. As the pattern given above does not have differential weights for papers, the SGPA of a student for a particular semester will be the average of the GPA' s for all the papers.

A student will be allotted a Course Grade Point Average (CGPA) after clearing all the four semesters. Again as there is no differential weight system for semesters, the CGPA of a student will be the average of the four SGPA's of that student.

The CGPA can be converted to the usual/conventional divisions in the following way:

CGPA	**Equivalent class/division**
9.00 to 10.00	First class (outstanding)
8.00 to 8.99	First class (excellent)
7.00 to 7.99	First class with distinction
6.00 to 6.99	First class
5.50 to 5 .99	Higher second class
5.00 to 5.49	Second class
4 .00 to 4.99	Pass class
Below 4.00	Fail

M. Sc. I Environmental Science(Semester I and II)

Year	Semester	PAPER NO.	PAPER TITLE	MARKS		TOTAL Marks	TOTAL	**Grand total**
				Th.	Int.			
M.Sc. 1 st Year	**I**	P-I	Environmental Chemistry	75	--	75	500	1000
		P-II	Fundamentals of Atmospheric Science	75	--	75		
		P-III	Ecology and Environment	75	--	75		
		P-IV	Environmental Pollution	75	--	75		
		Practical	Practical –IWater Sampling Techniques and Analysis	90	10*	100		
		Practical	Practical -IIWater and Soil Analysis	90	10*	100		
	II	P-V	Environmental Sampling and Analysis	75	--	75	500	
		P-VI	Natural Resources: Conservation and Management	75	--	75		
		P-VII	Environmental Disaster, Environmental Microbiology and Biotechnology	75	--	75		

		P-VIII	Analytical Techniques for Environmental Monitoring	75	--	75		
		Practical	Practical-I Environmental Ecology and Microbiology	90	10*	100		
		Practical	Practical-II Air and Noise Analysis	90	10*	100		

Note: The syllabus is based on 4 theory periods per week per paper of one hour duration and 8 practical periods per week per batch.

*****Internal assessment will be based on actual field work related to environment in any one of the following: Forest Management, Case study, Community Services, Work with NGO's, Study of environmental practices in industry, Rural development, Local environmental problems.

Distribution of marks for Practical's:

Practical-I

1. Major Experiment---------- 30 Marks
2. Minor Experiment---------- 15 Marks
3. Minor Experiment---------- 15 Marks
4. Record Book----------10 Marks
5. Viva Voce----------10 Marks
6. Field Visit----------10 Marks

Total Marks ----------90 Marks

Practical-II

1. Major Experiment---------- 30 Marks
2. Minor Experiment ----------15 Marks
3. Minor Experiment----------15 Marks
4. Record Book----------10 Marks
5. Viva Voce----------10 Marks
6. Tour Report----------10 Marks
7. Total Marks ----------90 Marks

The examination shall comprise of four papers in each semester and two practicals. In fourth semester instead of two practicals, one dissertation and one practical will be there. Admission to M.Sc. Environmental Science will be given to those students only who had Environmental Science as a subject in their graduation. Each practical examination will be of twelve hours duration and will be extended over two days.Each theory paper will be of three hours duration and shall carry 75 marks. The examinee shall be required to pass in theory and practicals, separately.