Gondwana University, Gadchiroli DIRECTION NO 33 of 2023

ADMISSIONS AND EXAMINATION LEADING TO THE DEGREE OF MASTER OF SCIENCE (AS PER NEP 2020) EXAMINATION UNDER FACULTY OF SCIENCE AND TECHNOLOGY, DIRECTION, 2023.

Whereas, The Maharashtra Public Universities Act, 2016 (VI of 2017) has come into force from 1st March 2017;

AND

Whereas, Gondwana University (hereinafter "the University") is now being governed by The Maharashtra Public Universities Act, 2016 (VI of 2017) (hereinafter the Act);

AND

Whereas, in the meetings of all Boards of Studies under the Faculty of Science and Technology it is resolved to restructure all the post graduate programmes of the faculty in tune with National Education Policy 2020, and decided to adopt curriculum as per State Government Higher and Technical Education Department Government resolution No.एनईपी-२०२२/प्र क्र.०९/विशि-३ शिकाना मंत्रालय, मुंबई ४०००३२, दिनांक १६ मे, २०२३ including the change in the nomenclature of the programmes. All the Boards of Studies have submitted the draft scheme of examinations, syllabus and other details of these programmes including On Job Training (OJT)/ Field Project (FP), Research Methodology (RM) and Research Projects (RP) to be introduced in the various Semester of the restructured programmes;

AND

Whereas, the draft scheme of examinations, syllabus and other details of these programmes prepared and approved by the respective Board of Studies of the Faculty of Science and Technology in its meeting dated 3 May, 2023 on behalf of the Faculty and Academic Council, The Vice Chancellor has accepted the draft submitted by the Board of Studies of the Faculty of Science and Technology.

AND

Whereas, the different post graduate programs in the Faculty of Science and Technology (Master of Science) are till date governed through different Ordinances and Directions, in order to bring uniformity in the process of admission, ATKT, Scheme of examination, all the board of studies in these subjects have agreed to have a uniform direction/ordinance governing all the master of science programs in the University

AND

Whereas, as per the National Education Policy 2020 and the gazette of the nomenclature of programmes published by the University Grants Commission in 2014, the

nomenclature and scheme of examination and other details of the erstwhile degrees of Master of Science in Physics, Master of Science in Chemistry, Master of Science in Mathematics, Master of Science in Botany, Master of Science in Zoology, Master of Science in Environment Science, Master of Science in Electronics, Master of Science in Bio-Chemistry with the approval of competent authorities of Gondwana University, Gadchiroli.

AND

Whereas, Ordinance is required to be framed for the governance of Admissions and Examinations in any program but it takes time to frame an Ordinance and there is an urgency to bring into effect the changes in the Master of Science Programs;

Now, therefore being satisfied with the nature of emergency, I, Dr. Prashant S. Bokare, Vice-Chancellor, Gondwana University, Gadchiroli in exercise of the powers vested in me under Section 12(8) of the Maharashtra Public Universities Act, 2016 do hereby issue the following direction:

- This direction shall be called "DIRECTION GOVERNING THE EXAMINATION LEADING TO THE DEGREE OF MASTER OF SCIENCE (AS PER NEP 2020) EXAMINATION UNDER THE FACULTY OF SCIENCE AND TECHNOLOGY, GONDWANA UNIVERSITY, GADCHIROLI".
- 2. This Direction shall come into force from the academic session 2023-24.
- 3. Interpretation Clause: In this direction, unless the context requires otherwise the words, phrases and abbreviations used shall have the following meaning:
 - a. "Academic Council" means Academic Council of Gondwana University. Gadchiroli
 - b. "ATKT" means allowed to keep term in higher semester.
 - c. **"Board of Studies"** means Board of Studies for various subjects of Science in the faculty of Science and Technology in the University.
 - d. "CC" means Core Course
 - e. "CA" means College Assessment which refers to the Internal Assessment done at college/institute level.
 - f. "Competent Authority" (for admission purpose) means an "Authority" established or assigned the duty to regulate admissions in the course by the Government of Maharashtra or an authority constituted by the University, for this purpose.
 - g. "Credit Point"(G)It is the product of grade point and number of credits for a course.
 - h. "Credit" (C) A unit by which the course work is measured. It determines the number of hours of instructions required per week. One credit is equivalent to one hour of teaching (lecture or tutorial) or two hours of practical work/field work per week.
 - i. **"Course"** means a paper/subject (theory or practical) prescribed for any semester of the programme.

- j. "Cumulative Grade Point Average (CGPA)" It is a measure of overall cumulative performance of a student over all semesters (four semesters). The CGPA is the ratio of total credit points secured by a student in various courses in all semesters and the sum of the total credits of all courses in all the semesters. It is expressed up to two decimal places.
- k. "DSE" means Discipline Specific Elective Course
- 1. **"Degree"** means the Post Graduate Degree awarded after successful completion of the programme governed by this Direction.
- m. "Fees" means the fees prescribed by the University/Shikshan Shulka Samiti of Government of Maharashtra, for the Post Graduate Programme under this Direction, from time to time.
- n. "Grade Letter" is an index of the performance of students in a said course. Grades are denoted by letters O, A+, A, B+, B, C, P and F.
- o. "Grade Point" It is a numerical weight allotted to each letter grade on a 10-point scale.
- p. "Master Programme" means Master degree programme in science.
- q. "MOOC" means Massive Open Online Course offered by SWAYAM/NPTEL or any other recognized University or Institution or Platform.
- r. "SEC" means Skill Enhancement Course.
- s. "Semester Grade Point Average (SGPA)" It is a measure of performance of work

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

- t. **"Student"** means student admitted to Master's degree programme in Science under this direction.
- u. "ODL" means Online Distance Learning
- v. "University" means Gondwana University. Gadchiroli

4. Details of eligibility for M.Sc. Semester-I Examination

Subject to the compliance with the provisions of the Direction and other Ordinances in force from time to time, the following applicants shall be eligible for the admission to Master of Science and Examination thereof.

Applicants who have passed the Examination (as mentioned in table 1) of Gondwana University, Gadchiroli or any statutory University in India or abroad recognized by University Grants Commission (UGC) or any other relevant apex regulatory authority or body of India an Examination recognized as equivalent thereto, are eligible for admission to the M.Sc. Semester – I program for their examination, provided applicant has secured an aggregate of not less than 40% marks at the B.Sc. Examination.

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Sr.No	'Major' to be offered	Eligibility for admission to Semester - I	Code
1	Botany	A candidate should have opted Botany as one of the subjects at B.Sc. Examination/B.Sc. (Agriculture) with Botany as one of the subjects.	BOT
2	Biotechnology	A candidate shall be any Life-Science graduate or Agriculture or Veterinary or Fishery Science or Pharmacy or B.Tech./BE Biotechnology or MBBS or BDS graduate.	BIT
3	Biochemistry	A candidate should have opted Biochemistry as one of the subjects at B.Sc. Examination.	BOC
4	Chemistry	A candidate should have opted Chemistry/ Industrial Chemistry as one of the subjects at B.Sc. Examination.	CHE
5	Computer Science	A candidate should have opted Computer Science as one of the optional subjects at B.Sc.or B.Sc. with optional subject as Computer Maintenance/ B.Sc. (Computer Science)/ B.Sc. (Information Technology)/ Bachelor of Computer Application (BCA)/B.Se. (Data Science) or B.Sc./BE/BTech.	CSC
6	Electronics	A candidate should have opted Electronicsas one of the subjects at B.Sc. Examination or B.Sc. Electronics with Computer Maintenance as one subject	ETN
7	Environmental Science	A candidate should have opted Environmental Science as one of the subjects at B.Sc. Examination or B.Sc. (Agriculture Science) having Environmental Science as one subject.	ESC
8	Geology	A candidate should have opted Geology as one of the subjects at B.Sc. Examination.	GEO
9	Mathematics	A candidate should have opted Mathematics as one of the subjects at B.Sc. Examination.	MTH
10	Microbiology	A candidate should have opted Microbiology/ Biotechnology as one of the subjects at B.Sc. Examination.	MCB
	Physics	A candidate should have opted Physics as one of the subjects at B.Sc. Examination.	PHY
12	Zoology	A candidate should have opted Zoology as one of the subjects at B.Sc. Examination.	Z00

NOTES:

• Total intake capacity for the program as approved by the university shall remain the same and be divided amongst the 'Major' programs allowed for M. Sc.

• The COLLEGE may offer a particular 'Major' subject depending on the availability of students and teachers.

The COLLEGE is not expected to force any student to opt for a particular subject where a choice is provided in the scheme of examination.

- 5. Duration of the Program, student progression path and provisions for Multiple Entry and Exit
 - a. Duration of the M. Sc. Program shall be TWO years with the provision for multiple exit as mentioned here:
 - i. A student can exit the program after successful completion of 1st and 2nd semesters having earned requisite number of credits as mentioned in the scheme of examination. Such a student shall be eligible for the award of 'Post Graduate Diploma in Science' with a major by the University.

<u>OR</u>

a student can continue the program in 2^{nd} year in order to become eligible for the award of 'Master of Science' degree with a major subject by the university.

- b. Re-entry or Lateral Entry
 - i. Students, opting for exits at any level, will have the option to re-enter the programme from where they have left off, in the same or in a different higher education institution will be permissible up to 5 years from the date of admission to PG program.
 - ii. Re-entry at various levels for lateral entrants in academic programmes shall be based on the earned and valid credits as deposited and accumulated in the Academic Bank of Credits (ABC) through Registered Higher Education Institutions and proficiency test records.

Table 2: Eligibility for Award of PG Diploma/Degree

Semester Completion	No. of Minimum Credits Required	Additional Credit Requirement	Eligible For
I and II	-1e140	Nil	Post Graduate Diploma in Science with Major
III and IV	80	Nil	Master of Science Degree with Major

6. Selection of 'Major' Subject

A student admitted to this program is required to select any one of the subjects/programs (Refer Table 1) as 'Major' subject to the availability of a particular subject in a particular college and is required to undergo and successfully complete the 'Core' and 'Elective' courses as mentioned in the scheme of examination of the selected 'Major' subject.

7. Availability of 'Major' and 'Intake Capacity'

All colleges affiliated to the University for offering Master of Science (M. Sc.) Program/s in the Faculty of Science and Technology shall have their intake as approved by Gondwana University, Gadchiroli. The available Major programs for M.Sc. are listed in Table 1 above.

- 8. All colleges affiliated to the University offering M. Sc. Program are required to put up a list of 'Major' subjects it is offering on the Notice Board as well as on the website of the college to make students aware about the availability of subjects. Moreover, colleges are expected to define and display the 'Standard Operating Procedures' for the college faculty members and students to facilitate the process of selecting 'Major' subjects.
- 9. In pursuance with the National Education Policy 2020 and a Government Resolution No. NEP-2022/प्र.क्र.09/विशी-3/शिकाना dated 16th May 2023issued by the Government of Maharashtra, the credit framework for M. Sc.. Program shall be as decided by respective Board of Studies in the Faculty of Science and Technology as Annexure – I.

10. Teaching and Examination Scheme

Teaching and Examination Schemes for all available 'Major' subjects for Master of Science (M. Sc.) degree are appended in Annexure – II.

11. Evaluation Scheme for OJT/FP/ and RP

A student of M. Sc. Semester – II has to compulsorily undergo 'On Job Training'. Similarly, a student of M. Sc. Semester – III and IV is required to undertake a 'Research Project'. Scope of these courses and their detailed evaluation scheme is appended in Annexure – III.

12. Grade Conversion Table and Computation of SGPA and CGPA

SN	Letter Grade	Grade Point Range	Mark Range (%)	Performance
× ×	0	9.00 - 10.00	90 - 100	Outstanding
2	A+	8.00 - < 9.00	80 - < 90	Excellent
3	A	7.00 - < 8.00	70 - < 80	Very Good
4	B+	6.00 - < 7.00	60 - < 70	Good
5	В	5.50 - < 6.00	55 - < 60	Above Average
6	С	5.00 - < 5.50	50 - < 55	Average
7	Р	4.00 - < 5.00	40 - < 50	Pass
8	F	Below 4	Below 40	Fail
9	AB	0	-	Absent

SN	Letter Grade	Grade Point Range	Mark Range (%)	Performance
1	0	9.00 - 10.00	90 - 100	Outstanding
2	A+	8.00 - < 9.00	80 - < 90	Excellent
3	Α	7.00 - < 8.00	70 - < 80	Very Good
4	B+	6.00 - < 7.00	60 - < 70	Good
5	В	5.50 - < 6.00	55 - < 60	Above Average
6	Р	5.00 - < 5.50	50 - < 55	Pass
7	F	Below 5	Below 50	Fail
8	AB	0	-	Absent

Table 4: Grade Conversion Table (Practical)

Note: -When students take audit courses, they may be given pass (P) or fail (F) grade without any credits.

Computation of SGPA & CGPA:

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

i. The SGPA is the ratio of sum of the product of the number of credits with the grade points scored by a student in all the courses taken by a student and the sum of the number of credits of all the courses undergone by a student, i.e

SGPA (Si) =
$$\Sigma$$
(Ci x Gi) / Σ Ci

Where, Ci is the number of credits of the ith course and Gi is the grade point scored by the student in the ith course.

ii. The CGPA is also calculated in the same manner taking into account all the courses undergone by a student over all the semesters of a programme, i.e.

$CGPA = \Sigma(Ci \times Si) / \Sigma Ci$

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

iii. The SGPA and CGPA shall be rounded off to 2 decimal points

iv. CGPA to Percentage (%) conversion formula: Percentage (%) = (CGPA) * 10

13. Credit Specifications:

- a. Theory/Tutorial Courses: One hour/credit/week (a minimum of 15 hours of teaching per credit is required in a semester.
- b. Laboratory/Performance Based Courses: A minimum of 30 hours in laboratory or Performance Based activities is required in a semester. Performance based activities include Studio activities, Workshop based activities, internship, Apprenticeship, Field based learning, community engagement learning, etc.
- c. Each semester will consist of at least 15 weeks of Academic Work equivalent to 90 actual teaching days.

14. Assessment

- The final total assessment of examinees shall be made in terms of Continuous Internal Assessment for 20% component and End Semester Examination (UA) for 80% component for each THEORY course mentioned in the scheme of examination.
- The final total assessment of examinees shall be made in terms of Continuous Internal Assessment (CA) and Semester End Examination (UA) for each PRACTICAL course as mentioned in the scheme of examination.
- 'On Job Training/Internship' being a PRACTICAL course shall be assessed as given in the scheme as per the 'Evaluation Rubrics' mentioned in Annexure III.
- 'Research Project' being a PRACTICAL course shall be assessed as given in the scheme as per the 'Evaluation Rubrics' mentioned in Annexure III.

1a	Attendance of the student during a particular semester	05 Marks
1b	An assignment based on curriculum to be assessed by the teacher concerned	05 Marks
1c	Subject wise class test or Performance Based Activities conducted by the teacher concerned	10Marks
1	Continuous Internal Evaluation Total marks (CA)	20

Table 5: Continuous Internal Assessment

- Expected Performance Based Activities shall consist of the following: (a) Group Discussion (b) Seminars (c) Power Point Presentations (d) Elocution (e) Debate (f) Role Play (g) Case Studies (h) Educational Games. The teacher is expected to undertake a minimum of four of the aforesaid activity.
- The CA marks will be communicated to the University at the end of each semester, but before the semester end examinations / as instructed by the university. These marks will be considered for the declaration of the results. The record of CA marks, evaluation & results should be maintained for a period of three year by the respective institute/college for verification by the competent authority.

15. Attainment of Course Outcomes

a. Continuous Internal Assessment shall be carried out at college/department level in such a way the attainment of prescribed learning outcomes can be measured. The college/department concerned is required to define outcome (4-6) for every course.

b. Semester End Examinations are conducted by the university. The question papers for these examinations are required to be set in such a way that the attainment of prescribed learning outcomes can be measured.

16. Standard of Passing

The scope of the subject, percentage of passing in Theory and Project and Internal Assessment will be governed as per following rules:

- (i) In order to pass the Master of Science (M. Sc.) 1st, 2nd, 3rd and 4thSemester Examinations, an examinee shall obtain not less than 40% (Letter Grade P) marks in each theory course/paper, taking UA & CA together. Whereas, for practical/performance-based examination an examinee shall obtain not less than 50% (Letter Grade P) marks in each practical, taking UA & CA together. Moreover, a student is required to secure not less than 40% marks in aggregate i.e., taking all courses together in order to become eligible for the award of M. Sc. degree.
- (ii) An examinee who is unsuccessful at the examination shall be eligible for admission to the subsequent examinations on payment of a fresh fee prescribed for the examination together with the conditions of the ordinance in force from time to time.
- (iii) The candidates who pass all the semester examinations in the first attempt are eligible for ranks.
- (iv) The results of the candidates who have passed the Semester-IV examination but not passed the lower semester examinations shall be declared as WLS (withheld for not completed lower semester examinations). Such candidates shall be eligible for the Degree only after successful completion of all the lower semester examinations.

(v)

The successful examinees at the M.Sc. semester IV examination shall be awarded division based on CGPA as follows:

CGPA	Division
7.5 and above	1 st division with distinction
6 to 7.49	1 st division
5 to 5.99	2 nd division

Table 6: CGPA Vs Division

- (vi) Provisions of Ordinance No. 3 of 2007 of Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur relating to the award of Grace Marks for passing and examination, securing higher division / class and for securing distinction in subject(s) shall be applicable till the own Direction/Ordinance of Gondwana University, Gadchiroli in this regard will come into force.
- (vii) University guidelines and directions issued from time to time regarding improvement of Results, Reassessment/Revaluation and Incentive Marks shall be applicable to M.Sc. programs covered under this direction.

17. Rules for ATKT (Allowed to Keep Term):

An unsuccessful examinee atany semester examination shall be ALLOWED TO KEEP TERM as per following conditions:

Admission to	Eligibility for admission and taking University Examination
Semester	GU
Semester – I	Candidate should have passed the qualifying examination as per the relevant Direction governing the course.
Semester – II	Candidate should have completed the term of the Ist semester and
	appeared for at least one University Theory examination paper of
	Semester- I.
Semester – III	Candidate should have completed the term of the II nd semester, filled the
	examination form of the same and has obtained exemption in 50
	percentage passing heads of the I st and II nd semesters taken together.
Semester – IV	Candidate should have completed the term of the III rd semester and
	appeared for at least one University Theory examination paper of
	Semester- III.
Semester – III Semester – IV	Candidate should have completed the term of the II nd semester, filled the examination form of the same and has obtained exemption in 50 percentage passing heads of the I st and II nd semesters taken together. Candidate should have completed the term of the III rd semester and appeared for at least one University Theory examination paper of Semester- III.

Table 7: ATKT Rules

18. Absorption of students admitted under previous directions

Students admitted to Master of Science in Physics, Master of Science in Chemistry, Master of Science in Mathematics, Master of Science in Botany, Master of Science in Zoology, Master of Science in Environmental Science, Master of Science in Electronics, Master of Science in Computer Science, Master of Science in Micro-Biology, Master of Science in Bio-Technology, Master of Science in Geology, Master of Science in Bio-Chemistry under previous directions/ordinance shall not be absorbed into the scheme of examination under this direction. Hence, the university shall continue to conduct these examinations for THREE years to provide opportunities to failure students of these programs. All failure students after these additional SIX attempts will be required to take admission to 1st year of M. Sc. program as per this direction.

19. Provision for Transfer of Credits

The M.Sc. program offered under this direction provides enhanced academic flexibility to students in terms of selecting the courses they want to learn. A student can opt for any course from any statutory/recognized University or a MOOC from SWAYAM/NPTEL in lieu of a course mentioned in this scheme of examination as 'Elective' course. The mechanism for transfer of credits earned through these courses to be adhered is mentioned here:

- 1. Every student is mandatorily required to create an ID on Academic Bank of Credits (ABC) and shall submit her/his ID to the college.
- 2. Any Course mentioned in this scheme of examination under 'Elective' can be opted out by a student for taking a MOOC from SWAYAM/NPTEL learning platform.
- 3. A student cannot opt out any of the compulsory (Core) courses.
- 4. If a student is willing to opt out any 'Elective' course, he/she will have to mention this while submitting the examination form to the University for respective semester.
- 5. A certificate of completion of such an ODL/Online course shall be submitted by the student to the University through college before end term evaluation.
- 6. Such a certificate shall mandatorily have the number of credits, duration of the course and grades/marks obtained by the student and shall preferably have a QR code for verification.
- 7. The college shall submit the grades and marks obtained by the student to the University along with Internal Assessment marks for the concerned examination.
- 8. If a student has opted for an ODL/Online course in a particular semester and failed to submit the certificate within prescribed time, the student will be marked for 'Absent' for a particular course in that examination. Such a student will be required to fill in the examination form in the consecutive attempt and submit the passing certificate in order to get his/her corrected result.
- 9. A separate guideline 'Transfer of Credits' issued by the University will be applicable to the students of M. Sc. Program from the date of its issuance.

20. Abbreviations Used:

CA: College Assessment UA: University Assessment

OJT: On Job Training (Internship/Apprenticeship), RM: Research Methodology, RP: Research Project

Annexure – I: Credit Structure given by Govt. of Maharashtra as per GR dated 16/05/2023

Annexure - II: Scheme of teaching & examination of all Major programs

Annexure – III: Rubrics and evaluation scheme for performance-based activities i.e., FP/OJT/RP etc.

Antrony

(Dr. Prashant S. Bokare) Vice-Chancellor

Date: 68/12/2023 Place: Gadchiroli

Annexure-1

राज्यामध्ये राष्ट्रीय शैक्षणिक धोरण, २०२० च्या अंमलबजावणीच्या अनुषंगाने गठीत करण्यात आलेल्या सुकाणू समितीच्या शिफाशींनुसार एक्झिट पर्याय / एक वर्षाच्या पदव्युत्तर अभ्यासक्रमासह २ वर्षांच्या पदव्युत्तर अभ्यासक्रमासाठी श्रेयांक वितरणासंदर्भातील सुधारित मार्गदर्शक सूचना.

महाराष्ट्र शासन उच्च व तंत्र शिक्षण विभाग शासन निर्णय क्रमांक: एनईपी-२०२२/प्र.क्र.०९/विशि-३ शिकाना मंत्रालय, मुंबई ४०० ०३२, दिनांक: १६ मे, २०२३

संदर्भ - १. शासन निर्णय क्रमांक: एनईपी-२०२२/प्र.क्र.१०५/विशि-३, दि.०६.१२.२०२२

- २. शासन निर्णय क्रमांक: एनईपी-२०२२/प्र.क्र.०९/विशि-३ शिकाना दिनांक २६.१२.२०२२.
- ३. शासन निर्णय क्रमांक: एनईपी-२०२२/प्र.क्र.०९/विशि-३ शिकाना दिनांक २०.०४.२०२३.
- ४. अध्यक्ष, सुकाणू समिती (नवीन शैक्षणिक धोरण, २०२०) यांचे दि.९.०५.२०२३ चे पत्र

प्रस्तावना-

भारताला ज्ञान महासत्ता बनविण्यासाठी, विद्यार्थ्यांमध्ये आवश्यक कौशल्य व ज्ञानप्राप्ती आणि विज्ञान, तंत्रज्ञान, शिक्षण आणि औद्योगिक क्षेत्रामधील मनुष्यबळाची कमतरता दूर करण्यासाठी, भारतातील लोकसंख्येला गुणवत्तापूर्ण शिक्षण, नाविन्यपूर्ण शिक्षण व संशोधनाच्या सुविधा उपलब्ध करुन देण्यासाठी, भारत सरकारने नवीन राष्ट्रीय शैक्षणिक धोरण- २०२० लागू केलेले आहे. नविन शैक्षणिक धोरणामध्ये सर्वांगीण आणि बहुविद्याशाखीय शिक्षण प्रणालीचा अंतर्भाव करण्यात आला असून ज्याचा उद्देश मानवाच्या सर्व क्षमतांचा नैतिक – एकात्मिक पद्धतीने विकास करणे आहे.

दि.२६.०४.२०२२ च्या शासन निर्णयान्वये गठीत करण्यात आलेल्या डॉ. रविंद्र कुलकर्णी, माजी प्र-कुलगुरु, मुंबई विद्यापीठ, मुंबई यांच्या अध्यक्षतेखालील उपसमितीने सादर केलेल्या अहवालाच्या अनुषंगाने अभ्यासक्रम व श्रेयांक आराखड्यासंदर्भातील निर्देश दि.०६.१२.२०२२ च्या शासन निर्णयान्वये जारी करण्यात आले आहेत.

राष्ट्रीय शैक्षणिक धोरण, २०२० ची राज्यातील अंमलबजावणीच्या अनुषंगाने गठीत उपसमित्यांच्या अहवालातील शिफारशींच्या अंमलबजावणीसंदर्भात आढावा घेऊन येण्प्र-या अडचणी निवारणासाठी उपाययोजना सुचविण्यासाठी व मार्गदर्शन करणेसाठी दि. २६.०१२.२०२२ च्या शासन निर्णयान्वये सुकाणू समिती स्थापन करण्यात आली आहे. सुकाणू समितीने अभ्यासक्रम व श्रेयांक आराखड्यासंदर्भात सादर केलेल्या अंतरिम अहवालावर दि. १९ व २० एप्रिल २०२३

रोजी आयोजित करण्यात आलेल्या चर्चासत्रामध्ये साधकबाधक चर्चा होऊन अभ्यासक्रम व श्रेयांक आराखड्याची राज्यामध्ये एकसमान प्रमाणात अंमलबजावणी होण्यासाठी सुधारित सुचना व निर्देश दिनांक २०.०४.२०२३ च्या शासननिर्णयान्वये जारी करण्यात आले आहेत.

सदर सुकाणू समितीने एक्झिट पर्याय / एक वर्षाच्या पदव्युत्तर अभ्यासक्रमासह २ वर्षांच्या पदव्युत्तर अभ्यासक्रमासाठी श्रेयांक वितरणासंदर्भात दिनांक ०९.०५.२०२३ च्या पत्रान्वये शिफारशी केल्या आहेत. सदर शिफारशींची राज्यामध्ये एकसमान प्रमाणात अंमलबजावणी होण्यासाठी तशा सुचना व निर्देश जारी करण्याची बाब शासनाच्या विचाराधीन होती.

शासन निर्णय:-

एक्झिट पर्याय / एक वर्षाच्या पदव्युत्तर अभ्यासक्रमासह २ वर्षांच्या पदव्युत्तर अभ्यासक्रमासाठी, सोबत जोडलेल्या परिशिष्टानुसार अभ्यासक्रम व श्रेयांक आराखड्यासंदर्भात सुधारित निर्देश जारी करण्यात येत असून सदर निर्देशांची वर्ष २०२३-२४ पासून अंमलबजावणी करण्यात यावी.

सदर निर्देश महाराष्ट्र सार्वजनिक विद्यापीठ अधिनियम, २०१६ मधील कलम ५ (८१) मधील तरतूदीनुसार निर्गमित करण्यात येत आहेत.

सदर निर्देशांच्या अंमलबजावणीबाबतचा आढावा शासनामार्फत सुकाणू समितीच्या माध्यमातून वेळोवेळी घेण्यात येईल.

सदर शासन निर्णय महाराष्ट्र शासनाच्या www.maharashtra.gov.in या संकेतस्थळावर उपलब्ध करण्यात आला असून त्याचा सांकेतांक २०२३०५१६१७२२१९५४०८ असा आहे. हा शासन निर्णय डिजीटल स्वाक्षरीने साक्षांकित करून काढण्यात येत आहे.

महाराष्ट्राचे राज्यपाल यांच्या आदेशानुसार व नांवाने,

AJIT MADHUKARRAO

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(अजित बाविस्कर)

उप सचिव, महाराष्ट्र शासन

प्रत,

9. मा. राज्यपाल यांचे प्रधान सचिव, राजभवन, मुंबई,

२. मा. मुख्यमंत्री यांचे प्रधान सचिव, मंत्रालय, मुंबई,

३. मा. उपमुख्यमंत्री यांचे उप सचिव, मंत्रालय, मुंबई,

8. मा. मंत्री, उच्च व तंत्र शिक्षण विभाग, यांचे खाजगी सचिव, मंत्रालय, मुंबई,

- भा. कुलगुरु, सर्व अकृषि विद्यापीठे, अभिमत विद्यापीठे, स्वयं अर्थसहाय्यित विद्यापीठे व समूह विद्यापीठे.
- ६. कुलसचिव, सर्व अकृषि विद्यापीठे, अभिमत विद्यापीठे, स्वयं अर्थसहाय्यित विद्यापीठे व समूह विद्यापीठे
- ७. संचालक, उच्च शिक्षण/ तंत्रशिक्षण/ कला/ ग्रंथालय
- ८. प्रधान सचिव, उच्च व तंत्र शिक्षण विभाग, यांचे स्वीय सहाय्यक, मंत्रालय, मुंबई,
- ९. उप सचिव (विशि), उच्च व तंत्र शिक्षण विभाग, यांचे स्वीय सहाय्यक, मंत्रालय, मुंबई,

१०.निवडनस्ती (विशि-३).

शासन निर्णय क्रमांक: एनईपी-२०२२/प्र.क्र.०९/विशि-३ शिकाना दिनांक १६.०५.२०२३ सोबतचे परिशिष्ट

Structure and Credit Distribution of PG Degree Program

Vide G.R. No. NEP-2022 /CR No. 09/VISHI-3 /शिकाना dated April 20, 2023, the Directive, covering the Credit distribution structure for Four Year UG Honours/ Honours with Research Degree Programme with Multiple Entry and Exit options, was issued. In continuation of Section 8 of this GR- 'Design of PG / Master's Programmes', the illustrative Table depicting the Credit Distribution for Two Year PG Programme with one Exit Option/ One Year PG Programme is as given below:

Illustrative Credit distribution structure for Two Years/ One Year PG (M.A./M.Sc./M.Com.) and Ph. D. Programme

Year Level			Major			OJT	RP	Cum.	Degree
(2 Yr PG)		Sem. (2 Yr)	Mandatory	Electives	RM	/ FP		Cr.	
		Sem I	12-14 (2*4 +2*2 or 3*4+2)	4	4			20-22	PG Diploma (after 3
I	6.0	Sem II	12-14 (2*4 +2*2 or 3*4+2)	4		4		20-22	Yr Degree)
Cum. Cr. For PG Diploma		24-28	8	4	4	-	40-44		
	Exit	option: PG	Diploma (40-	44 Credits)	after]	Three Y	ear U	G Degre	e
П		Sem III	12-14 (2*4 +2*2 or 3*4+2)	4			4	20-22	PG Degree After 3-
	6.5	Sem IV	10-12 (2*4 +2 or 3*4)	4			6	20-22	Or PG Degree
Cum. Cr. for 1 Yr PG Degree		22-26	8			10	40-44	after 4- Yr UG	
Cum. Degre	Cum. Cr. for 2 Yr PG Degree		46-54	16	4	4	10	80-88	mee
2 Yea	irs-4 Sen	n. PG Degr PG Deg	ree (80-88 cred ree (40-44 cre	lits) after T dits) after I	hree Y Four Y	ear UG ear UG	Degr Degr	ee or 1 Y ee	'ear-2 Sem
	8.0		Course Wo (3*	rk Min. 12 4)	T T E Pe	raining 'eaching ducatio edagogy	in g / n/ :: 4	16 + Ph. D. Work	Ph.D. in Subject

Abbreviations: Yr.: Year; Sem.: Semester; OJT: On Job Training: Internship/ Apprenticeship; FP:

Field projects; RM: Research Methodology; Research Project: RP; Cumulative Credits: Cum. Cr.

- (a) With effect from Academic Year 2023-24, Two years Master's Degree Program will be revamped as per the Illustrative Credit Distribution given in the above Table.
- (b) Credits offered per Semester will be a Minimum of 20 and a Maximum of 22. While minimum credits are mandatory as per National Credit Framework, the Universities can evolve the mechanism for providing Semester/ Levelwise credit attainment flexibility within the broad framework.
- (c) Under the One-year PG Diploma program, and two-year master's Degree program, the students must complete on-the-job training/internship of 04 credits during summer break, after completion of the second semester of the first year in the respective Major Subject.
- (d) The 4 Credits Research Methodology Component is mandatory in the First Year.
- (e) Since the Master's Programme is based on DSC Specialisation, the PG curricular framework will not include Minor Subject. Electives selected in the PG program may be **Relevant to OR Supportive of** the Major Subject chosen. The Statutory authorities of the University or Autonomous College can take a decision in this regard.
- (f) The students will have to undertake a research project of 4 credits in Semester III and a research project of 6 credits in Semester IV in the second year of the two-year master's degree program. This is also applicable to the students admitted to one year PG program after completion of four year UG Program.
- (g) Colleges already having permission and recognition for the PG degree programme along with UG degree programme in the same Major shall be automatically allowed to continue PG degree programme in the same Major without undergoing any additional procedures. Similarly, the colleges with approved PG programme and Ph.D. Research Centre in the same Major shall be automatically allowed to continue PG and Ph. D. Degree programme without undergoing any additional procedures.
- (h) The exit option at the end of one year of the Master's degree program will commence from AY 2024-25. Students who have joined a two-year Master's degree program may opt for exit at the end of the first year and earn a PG Diploma.
- (i) The PG Diploma may be awarded to a student provided they have earned the requisite credits in one year including on-the-job training of 04 credits during summer break, after completion of the second semester of the first year in the respective Major Subject.

- (j) The one-year Master's Degree Program will begin with effect from Academic Year 2027-28.
- (k) Re-entry to complete the PG degree, after taking the exit option, will be permissible up to 05 years from the date of admission to the PG program.
- (I) With regards to the Eligibility criteria and Procedure for admission to the Ph.D. Programme, Duration of the Ph.D. Programme, Eligibility and Allocation of Research Supervisor, Course Work (Credit requirements, number, duration, syllabus, minimum standards for completion), Research Advisory Committee and its Functions, Academic, research, administrative, and infrastructure requirements to be fulfilled by Colleges for getting recognition for offering Ph.D. Programme, Award of Ph. D. Degree etc, the Universities and Autonomous Colleges must comply UGC (Minimum Standards and Procedure for Award of Ph.D. Degree) Regulations, 2022, dated Nov. 7, 2022.
- (m) The University and Autonomous College must adopt this GR within 10 days after its issue.

GONDWANA UNIVERSITY, GADCHIROLI

(According to NEP- 2020)

SYLLABUS

For M. Sc. BOTANY

SEMESTER I & II

Under Choice Based Credit System (CBCS)

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		M.Sc I Botany -	Semeste	er-I									
			Teaching Scheme			Credits Assigned				% of Assessment			
Subject	Course/ Paper Code	Paper Name	Theor y	Pract	.Tut	Theor	Prac t.	Tut	Total	CA	UA	Total	Min. Passing Marks
Core	01MSCB 1	General Microbiology, Phycology and Mycology	4	-	-	3	-	-	3	20	80	100	40
	01MSCB 2	Bryophytes & Pteridophytes	4	-	-	3	-	_	3	20	80	100	40
	01MSCB 3	Gymnosperm & Paleobotany	4	-	-	3	-	_	3	20	80	100	40
Elective PGMSCB 4 (Student Shell	01MSCB 4.1	Molecular Biology and Plant Biotechnology-I	-					-	3	20			
	01MSCB 4.2	Reproductive Biology of Angiosperms-I									80		
select any one	01MSCB 4.3	Paleobotany-I				3	-					100	
from the	01MSCB 4.4	AdvancePhycology-I											40
elective group)	01MSCB 4.5	Mycology and Plant Pathology -I	4	-	-								
RM	01MSCB 5	ResearchMethodology	5	-	-	4	0	-	4	20	80	100	40
Practical-I	01MSCB 6	Based on 01MSCB 1 & 01MSCB 2	-	5		-	2	-	2	25	75	100	50
Practical-II	01MSCB 7	Based on 01MSCB 3 & 01MSCB 4	_	5	-	-	2	-	2	25	75	100	50
	Total		19	10	-	16	4	-	20	150	550	700	300

CC

		Γ	M.ScI	Botany	– Seme	ester-II													
	Course/PaperC		Teaching Scheme			Credits Assigned				% of Assessment									
Subject	de	Paper Name	Theory	Pract.	Tut.	Theory	Pract.	Tut.	Total	CA	UA	Total	Min. Passing Marks						
	02MSCB 1	Plant Physiology	4	-	-	3	-	_	3	20	80	100	40						
(Major)Mandato		Plant Development & Embryology	4	-	-	3	-	- 1	3	20	80	100	40						
-5	02MSCB 3	Angiosperm-I	4	-	-	3	_	-	3	20	80	100	40						
Elective 02MSCB 4 (Student Shall select any one from the	02MSCB 4.1	Molecular Biology and Plant Biotechnology-II										100	40						
	02MSCB 4.2	Reproductive Biology of Angiosperms-II	4																
elective group)	02MSCB 4.3	Paleobotany-II		-	-	-	-	-	-	3	-	-	3	20	80	100	40		
	02MSCB 4.4	Advance Phycology- II														5	20	00	100
	02MSCB 4.5	Mycology and Plant Pathology -II																	
OJT/FP	02MSCB 5	On Job Training	-	5	-	-	4	-	4	20	80	100	40						
Practical-I	02MSCB 6	Based on 02MSCB 1 & 02MSCB 2	-	4	-	-	2	-	2	25	75	100	50						
Practical-II	02MSCB 7	Based on 02MSCB 3 & 02MSCB 4	-	4	-	6 - 11	2	-	2	25	75	100	50						
	Total		16	13		12	8	-	20	150	550	700	300						

CC

Note: As per GR, there is no mention of Ability Enhancement Course in the skeleton of PG syllabus for NEP20.

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Teaching and Examination Scheme M.Sc. Semester I Master of Science (Biotechnology)

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		Gondwana University, Gadch	iroli							
Faculty Name : Science	e and Tec	Name P.G.: BIOTECHNOLOGY								
]	Two Years Regular Post Graduate	Program							
SEM – I										
Major (Mandatory)	Credit	Elective	Credit	Research Methodology	Credit	Total Credit				
1. Cell Biology ,Paper - I Theory = 03 Credit Ceory = 100 (80 + 20)		 Molecular Biology, Paper - IV Theory = 03 credit Theory = 75 (80 + 20) Advanced Environmental Biotechnology ,Paper - IV Theory = 03 credit Theory = 100 (80 + 20) 	-	1 Research Methodology						
2. Microbiology , Paper - II Theory = 03 credit Theory = 100 (80 + 20)	(3x3) 9	3. Environmental Microbiology & Waste Management, Paper - IV Theory = 03 credit Theory = $100 (80 + 20)$ 4. Microbial Technology, Paper - IV Theory = 03 Practical = 01 Theory = $100 (80 + 20)$	3		3	20				
3. Biophysical Chniques – Paper -		5. Virology, Paper - IV Theory = 03 credit Theory = 100 (80 + 20)		Practical	4					
Theory = 03 credit $rac{1}{r}$ ory = 100 (80 + 20)		Note:- Student shall select any one from above group		Seminar						

Scheme of teaching and examination under semester pattern for M.Sc. Program in Biotechnology (M.Sc. Semester I Biotechnology)

				MAR	(ING S	SCHEM ter I	E						
			Tea	ching Sc	heme				Exa	minat	ion So	hem	e
	Theory /							. <u> </u>	Max Mar	k. ks		Mir N	nimum 1arks
Code	Practical	The	ory	Practi	cal	Total	Credit	Duration hrs.	External	Internal	Total	Theory	Practical
		UA	CA	UA	CA								
Major - 01MSCBT01	Theory	80	20	LAB-1	25	300	3	3	80	20	100	40	40
Major - 01MSCBT02	Theory	80	20	75		1	3	3	80	20	100	40	40
Major - 01MSCBT03	Theory	80	20	LAB-2	25	300	3	3	80	20	100	40	40
Elective – 01MSCBT04	Theory	80	20	75			3	3	80	20	100	40	40
Minor - 01MSCBT09	Theory	80	20	-	-	100	3	3	80	20	100	40	40
SEMINAR	-	-	50			50	1	-	-	50	50	-	-
i TAL		400	150	150	50	750	20						

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GONDWANA UNIVERSITY, GADCHIROLI



Syllabus

for

Master of Science (M.Sc.) Chemistry Based on NEP – 2020

(with effect from 2023-24)

Board of Studies in Chemistry Faculty: Science and Technology

1

GONDWANA UNIVERSITY, GADCHIROLI

M.Sc.-I Semester I, II (Chemistry)

(NEP 2020, Effective from 2023-24)

M.Sc. (Chemistry)

	Scheme of Teaching a	nd Exa	aminati	on for M	I.Sc. (Chemistry)				
	M.Sc. (Chemistry) Semester – I						1		
	Subjects	L	Т	Р	Total Credits	UA	CA	Min	Total
Major	01MSCCH01 Paper I (Inorganic Chemistry)	3			3	80	20	40	100
	01MSCCH02 Paper II (Organic Chemistry)	3		-	3	80	20	40	100
	01MSCCH03 Paper III (Physical Chemistry)	3		-	3	80	20	40	100
Major	01MSCCH04 Paper IV (Analytical Chemistry) or	3			3	80	20	40	100
Elective	01MSCCH05 Paper IV (Ind. Chem. & Env.) or	3			3	80	20	40	100
	01MSCCH06 Paper IV (Green Chemistry) or	3			3	80	20	40	100
	01MSCCH07 Paper IV (Hetcyc. & Nat. Prod.) or	3			3	80	20	40	100
	01MSCCH08 Paper IV (Pharm. & Cosm. Chemistry)	3		-	3	80	20	40	100
Practical	01MSCCHL1 Practical I (Based on Paper I & II)			4	2	75	25	50	100
	01MSCCHL2 Practical II (Based on Paper III & IV)			4	2	75	25	50	100
RM	01MSCCH09 Paper V (Research Methodology)	3		-	3	80	20	40	100
	01MSCCHSI Seminar I	1			1	-	50		50
	Total	16		8	20				750

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	Scheme of Teaching and Examination for M.Sc. (Chemistry)								
	M.Sc. (Chemistry) Semester – II	L	Т	P	Total Credits	UA	CA	Min	Total
Major	02MSCCH01 Paper I (Inorganic Chemistry)	3			3	80	20	40	100
	02MSCCH02 Paper II (Organic Chemistry)	3			3	80	20	40	100
	02MSCCH03 Paper III (Physical Chemistry)	3			3	80	20	40	100
Major	02MSCCH04 Paper IV (Analytical Chemistry) or	3			3	80	20	40	100
Elective	02MSCCH05 Paper IV (Inorg. Mat. Of Ind. Imp.) or	3			3	80	20	40	100
	02MSCCH06 Paper IV (Polymer Chemistry) or	3			3	80	20	40	100
	02MSCCH07 Paper IV (Mol. Spectroscopy) or	3			3	80	20	40	100
	02MSCCH08 Paper IV (Front. in Electrochemistry)	3		-	3	80	20	40	100
Practical	02MSCCHL3 Practical III			4	2	75	25	50	100
	02MSCCHL4 Practical IV			4	2	75	25	50	100
	02MSCCH09 Paper V (OJT/FP)	3			3	80	20	40	100
	02MSCCHS2 Seminar II	1			1	-	50		50
	Total	16		8	20				750

3



M.Sc. (Computer Science) Sem - I & II (NEP 2020), Gondwana University, Gadchiroli

1				Sche	eme	e								
		M.Sc. –	I Compute	r Sci	ien	ce	- Se	me	ste	r-I				
	0-1	Course/ Paper		Tea Sc	ichin hemo	g	Cre	dits 2	Assi	gned	0	/o o1	Asses	sment
	Subject	Code	Paper Name	Theory	Prac	.Tut	.Theory	Prac	.Tut	Total	IA	UE	Total	Min. Passing Marks
	<u> </u>	01MSCCS01	Scripting Languages and Information Retrieval	4	-	-	3	-	-	3	20	80	100	40
A	Core	01MSCCS02	Python Programming	4	-	-	3	-	-	3	20	80	100	40
		01MSCCS03	Advanced Java	4	-	-	3	-	-	3	20	80	100	40
		01MSCCS04.1	Cloud Computing											
	Floating	01MSCCS04.2 Elective CGMSCC04	Discrete Mathematics											
	PGMSCC04 (Student Shall select any one from the elective group)	01MSCCS04.3	Theory of Computation & System Programming	4	-	-	3	-	-	3	20	80	100	40
		01MSCCS04.4	Network Security											
-		01MSCCS04.5	Computer Graphics											
	RM	01MSCCS05	Research Methodology & Publication Ethics	4	-	-	3			3	20	80	100	40
	LAB - I	01MSCCS06	Based on 01MSCCS01 & 01MSCCS02	-	4	-	-	2	-	2	25	75	100	50
	LAB - II	01MSCCS07	Based on 01MSCCS03 & 01MSCCS04	-	4	-	-	2	-	2	25	75	100	50
	Ability Enhancement	01MSCCS08	Seminar	-	1	-	-	1	-	1	50	-	50	20
		lotal		20	9	-	15	5	-	20	200	550	750	320

M.Sc. (Computer Science) Sem - I & II (NEP 2020), Gondwana University, Gadchiroli

5

	M.Sc	- I Comput	er S	ciei	nce	e – S	em	est	er-I	I			
	Course/Paper		Tea	achin heme	g	Cre	dits A	Assi	gned		% of 2	Assessn	nent
Subject	Code	Paper Name	Theory	Prac	.Tut.	Theory	Prac.	Tut.	Total	IA	UA	Total	Min. Passing Marks
	02MSCCS01	Web Designing using ASP.Net	4	-	-	3	-	-	3	20	80	100	40
(Major) Mandatory	02MSCCS02	Data Warehouse and SQL	4	-	-	3	-	-	3	20	80	100	40
	02MSCCS03	Android Application Development	4	-	-	3	-	-	3	20	80	100	40
	02MSCCS04.1	Cyber Security & IPR											
Elective 02MSCCS04	02MSCCS04.2	Soft Skills											
02MSCCS04 (Student Shall select any one from the	Elective 02MSCCS04 (Student Shall select any one from the	Digital and Cyber Forensics	4	-	-	3	-	-	3	20	80	100	40
elective group)	02MSCCS04.4	Operation Research											
	02MSCCS04.5	Data Visualization											
OJT	02MSCCS05	On Job Training	4	-	-	3	-	-	3	25	75	100	50
LAB - I	02MSCCS06	Based on 02MSCCS01 & 02MSCCS02	-	4	-	-	2	-	2	25	75	100	50
LAB - II	02MSCCS07	Based on 02MSCCS03 & 02MSCCS04	-	4	-	-	2	-	2	25	75	100	50
Ability Enhancement	02MSCCS08	Seminar	- 20	1	-	-	1	-	1	50	545	50	20
	Subject (Major) Mandatory Elective 02MSCCS04 (Student Shall select any one from the elective group) OJT LAB - I LAB - I	SubjectCourse/Paper CodeSubject02MSCCS01(Major) Mandatory02MSCCS0202MSCCS0302MSCCS0302MSCCS04 (Student Shall select any one from the elective group)02MSCCS04.302MSCCS04 (Student Shall select any one from the elective group)02MSCCS04.302MSCCS04.502MSCCS04.402MSCCS04.602MSCCS04.50JT02MSCCS04.5LAB - I02MSCCS06LAB - II02MSCCS07Ability Enhancement02MSCCS08	SubjectCourse/ Paper CodePaper NameSubject02MSCCS01Web Designing using ASP.Net(Major) Mandatory02MSCCS02Data Warehouse and SQL02MSCCS03Android Application Development02MSCCS04Cyber Security & IPR02MSCCS04.1Cyber Security & IPR02MSCCS04.2Soft Skills02MSCCS04.3Digital and Cyber Security & IPR02MSCCS04.4Operation Research02MSCCS04.5Digital and Cyber Forensics02MSCCS04.6Operation Research02MSCCS04.7Data Visualization0JT02MSCCS04.50JT02MSCCS04LAB - I02MSCCS05LAB - II02MSCCS07Based on 02MSCCS07Based on 02MSCCS03 & 02MSCCS03 & 02MSCCS04Ability Enhancement02MSCCS08SeminarSeminar	M.Sc. – I Computer SSubjectTerm Paper NameTerm Term Paper NameSubjectOurse/Paper CodePaper Name $\frac{1}{2}$ (Major) Mandatory02MSCCS01Web Designing using ASP.Net402MSCCS02Data Warehouse and SQL402MSCCS03Data Warehouse and SQL402MSCCS03Cyber Security & IPR402MSCCS04.1Cyber Security & IPR402MSCCS04.2Soft Skills402MSCCS04.3Digital and Cyber Forensics402MSCCS04.4Operation Research402MSCCS04.5Digital and Cyber Forensics402MSCCS04.6Digital and Cyber Soft Skills402MSCCS04.6Digital and Cyber Forensics402MSCCS04.6Digital and Cyber Forensics402MSCCS04.6Digital and Cyber Forensics402MSCCS04.6Digital and Cyber Forensics402MSCCS04.7Digital and Cyber Forensics40402MSCCS04.6Digital and Cyber Forensics40402MSCCS05Data Visualization40402MSCCS06Based on 02MSCCS01 & 02MSCCS03 & 02MSCCS03 & 02MSCCS03 & 02MSCCS04-0402MSCCS07Based on 02MSCCS03 & 02MSCCS04-0402MSCCS08Seminar-	M.Sc. – I Computer ScientSubjectCourse/Paper CodePaper NameTeachin ScientSubject02MSCCS01Web Designing using ASP.Net4-(Major) Mandatory02MSCCS02Data Warehouse and SQL4-02MSCCS03Application Development4-02MSCCS04.1Cyber Security & IPR4-02MSCCS04.2Soft Skills4-02MSCCS04.3Soft Skills4-02MSCCS04.4Soft Skills4-02MSCCS04.5Digital and Cyber Forensics4-02MSCCS04.6Digital and Cyber Forensics4-02MSCCS04.6Digital and Cyber Forensics4-02MSCCS04.6Digital and Cyber Forensics4-02MSCCS04.6Digital and Cyber Forensics4-02MSCCS04.6Digital and Cyber Forensics4-02MSCCS04.6Data Olata Olata OlatiSccs014-0JT02MSCCS05On Job Training OlatiSccs014-LAB - I02MSCCS06Based on OlatiSccs01-4Ability Ehancemet02MSCCS07Based on OlatiSccs04-402MSCCS07Diate on OlatiSccs01-1102MSCCS06Seminar-1	M.Sc. – I Computer ScienceSubjectCourse/Paper CodePaper NameIsc. Science(Major) Mandatory02MSCCS01Web Designing using ASP.Net402MSCCS02Data Warehouse and SQL402MSCCS03Android Application Development402MSCCS04Cyber HPR402MSCCS04Soft Skills02MSCCS04Digital and Cyber Forensics402MSCCS04.3Digital and Cyber Forensics402MSCCS04.4Operation Research402MSCCS04.5Data Cyber Forensics402MSCCS04.6Digital and Cyber Forensics402MSCCS04.5Data Visualization402MSCCS04.6Data Operation Research-4-0JT02MSCCS05On Job Training 02MSCCS01 & 02MSCCS01 &-4-LAB - I02MSCCS07Based on 02MSCCS03 & 02MSCCS03 & 02MSCCS03 &-4-LAB - II02MSCCS07Based on 02MSCCS04-4-Ability Enhancement02MSCCS08Seminar-1-	M.Sc I Computer Science - SSubjectTeaching Course/Paper CodeTeaching Paper NameTeaching SchemeCreSubjectOurse/Paper CodePaper NameTeaching SchemeCreOursecsoiWeb Designing using ASP.Net4-3OursecsoiData Warehouse and SQLAndroid Application Development4-3OursecsoiDigital and Cyber Security & IPR4-3OursecsoiOursecsoiSith SkillsOursecsoiCyber Security & IPR-4-3OursecsoiOursecsoiCyber Security & IPR02MSCCS04 (Student Shall selective group)02MSCCS04 OursecsoiOperation Research430JT02MSCCS05Data Visualization-430JAB-1102MSCCS06Based on 02MSCCS01 QUMSCCS03 QUMSCCS03 QUMSCCS04-4Cyber Security & DivisualizationCyber Security & Divisual	M.Sc. – I Computer Science – Semu Teaching SubjectTeaching SchemeCredits / Credits / Theory PracSubjectCourse/ Paper CodePaper NameTeaching SchemeCredits / Theory Prac(Major) Mandatory02MSCCS01Web Designing using ASP.Net43-02MSCCS02Data Warehouse and SQL43-02MSCCS03Android Application Development43-02MSCCS04.1Cyber Security & IPR43-02MSCCS04.2Soft Skills02MSCCS04.3Digital and Cyber Forensics43-02MSCCS04.3Digital and Cyber Forensics02MSCCS04.4Operation Research43-0JT02MSCCS04.4Operation Research43-0JT02MSCCS05On Job Training 02MSCCS01 02MSCCS01 02MSCCS01 02MSCCS03 02MSCCS03 02MSCCS03 02MSCCS03 02MSCCS03 02MSCCS03 02MSCCS03 02MSCCS03 02MSCCS03 02MSCCS03 02MSCCS03 02MSCCS03 02MSCCS03 02MSCCS03 02MSCCS03 02MSCCS04-4-22LAB - II02MSCCS07Based on 02MSCCS03 02MSCCS03 02MSCCS03 02MSCCS03 02MSCCS03-4-22LAB - II02MSCCS08Seminar-11-11	M.Sc. – I Computer Science – Semest Subject Course/ Paper Code Teaching Scheme Credits Assigned Theory Prac. Tut. Theory Prac. Tut. (Major) Mandatory 02MSCCS01 Web Designing using ASP.Net 4 - - 3 - - (Major) Mandatory 02MSCCS02 Data Warehouse and SQL 4 - - 3 - - Elective 02MSCCS04 02MSCCS04.1 Android Application Development 4 - - 3 - - Elective 02MSCCS044 02MSCCS04.2 Soft Skills 4 - - 3 - - 02MSCCS044 Operation Research 4 - - 3 - - 02MSCCS04.5 Data Visualization 4 - - 3 - - 02MSCCS045 Data Visualization 4 - - 3 - - 01T 02MSCCS05 On Job Training 02MSCCS06 Based on 02MSCCS01 - 4 - - 3 - 2 - LAB - II	H.Sc. – I Computer Science – Senester-I Subject Course/Paper Code Teaching Scheme Cedits Assigned Subject Course/Paper Code Theory Prec. Tut. Theory Prec.	M.Sc. – I Computer Science – Semester-II Subject Course/Paper Code Paper Name Teaching Scheme Credits Assigned Image <	M.Sc. – I Computer Science – Semester-II Subject Credits Assigned % of. Subject Credits Assigned % of. Mandatory O2MSCCS01 Web Designing using ASP.Net 4 - 3 - 3 % of. Med Dasigning using ASP.Net 4 - 3 20 80 02MSCCS02 Data Warehouse and SQL Android Application Development - - 3 - 3 20 80 Elective 02MSCCS04 Operation Research Operation Research 02MSCCS04. Operation Research 02MSCCS04. Operation Research 02MSCCS04. Operation Research 02MSCCS04. Operation Research 02MSCCS04. Operation Research 02MSCCS05 On Job Training 02MSCCS04.<	M.Sc. – I Computer Science – Semester-II Subject Course/ Pape Code Teaching Theory Prac Jul Theory Prac Credits July Science Subject Science Credits July Science Science Credits July Science Science Credits July Science Science Credits July Science Science Science Credits July Science Science Science Credits July Science Science Science

M.Sc. (Computer Science) Sem - I & II (NEP 2020), Gondwana University, Gadchiroli

Gondwana University, Gadchiroli



Syllabus

for

Master of Science (M. Sc.) Electronics

Based on NEP - 2020

(With effect from 2023-24)

Board of Studies in Electronics Faulty: Science and Technology

		S	che	me									
	M	.Sc. – I Electro	nics	- 5	Ser	nest	ter-	·I					
		(2 Year P.	G. Ho	nor	s)								
Subject	Course/	PanarNama	Tea Sc Hrs	hem /We	ig e ek	Cre	dits	Assi	gned		%of	Assess	ment
Sasjer	PaperCode	1 aper Maine	Theory	Prac	.Tut	Theory	Prac	Tut.	Total	IA	UE	Total	Min. Passin Mark
		DSC 1											ITTALK
Core	PSCELT101	Semiconductor Devices and Electronic Circuits DSC 2	4	-	-	3	-	-	3	20	80	100	40
(DSC)	PSCELT102	Analog and Digital System	4	-	-	3	-	-	3	20	80	100	40
	PSCELT103	DSC 3 Advanced	4	-	-	3	-	-	3	20	80	100	40
Elective (DSE) (Student Shall select any one from the elective group)	PSCELT104	DSE1 Virtual Instrumentation											
	PSCELT104	DSE 2 Embedded Systems and Applications	4	-	-	3	-	-	3	20	80	100	40
	PSCELT104	DSE 3 Communication Techniques and Networking											
Research Methodology (RM)	PSCELT105	Research Methodology & Publication Ethics	4	-	-	3		-	3	20	80	100	40
Lab Course- I	PSCELP101	Lab Course I (Semiconductor devices & Digital System)	-	4	-	-	2	-	2	25	75	100	50
Lab Course - II	PSCELP102	Lab Course II (Microprocessor& Virtual system)	-	4	-	-	2	-	2	25	75	100	50
Ability								-					

		5	iche	me	•								
	М	.Sc. – I Electro	nics	- 5	Ser	nest	ter	·II					
Subject	Course/	Daman Nama	Te So Hr	achin chem s/We	ng ie æk	Cr	edits	Ass	igned		%01	fAssess	ment
Subject	PaperCode	raperivame	Theor	yPrac	Tut	.Theor	yPrac	Tut	Total	IA	UE	Total	Min. Passing
	PSCELT201	DSC 4 Computer Organization and Interfacing	4	-	-	3	-	-	3	20	80	100	40
Core (DSC)	PSCELT202	DSC 5 Microwave and Optical Communication	4	-	-	3	-	-	3	20	80	100	40
	PSCELT203	DSC 6 Fuzzy Logic and Artificial Neural Networks	4	-	-	3	-	-	3	20	80	100	40
Elective (DSE) (Student Shall select any one from the elective	PSCELT204	DSE4 Internet of Things											
	PSCELT204	DSE 5 Digital signal Processing	4	-	-	3	-	-	3	20	80	100	40
group)	PSCELT204	DSE 6 Digital Image Processing											
OJT/FP	PSCELOJT201	On-the-Job Training/Internship/ Field Project	4	-	-	3		-	3	20	80	100	40
Lab Course - III	PSCELP201	Lab Course III (Interfacing and Optical Communication)	-	4	-	-	2	-	2	25	75	100	50
Lab Course- IV	PSCELP202	Lab Course IV (IoT and Digital Signal Processing))	-	4	-	-	2	-	2	25	75	100	50
Ability Enhancement	PSCELS201	Seminar	-	1	-	-	1	-	1	50	-	50	20

GONDWANA UNIVERSITY

GADCHIROLI



National Education Policy 2020

FACULTY OF SCIENCE AND TECHNOLOGY

Syllabus

M.Sc. I Semester I and II

Program: FYPGP

PG Course: Environmental Science

With effect from 2023-2024

Scheme of teaching and examination under semester pattern NEP2020 for M.Sc. Program (Semester I&II) in Environmental Science

SEMESTER I

Major and Elective Paper	,Theory /	Teachi	ng Sch	neme			Exa	aminat	ion Scl	neme	
Code	Practical	Но	urs/ w	eek	it.	.е	M M	lax. arks		Mini M	mum arks
		Theory	Practical	Total	Cred	Duration hrs.	External	Internal	Total	Theory	Practical
Major I, PMENVT01	Paper I	4		4	3	4	80	20	100	40	
Major II, PMENVT02	Paper II	4		4	3	4	80	20	100	40	
Major III, PMENVT03	Paper III	4		4	3	4	80	20	100	40	
Elective, PEENVT04 (Paper 1, 2, 3, 4 & 5)	Paper IV	4		4	3	4	80	20	100	40	
Practical I, PMENVP01	Practical 1		4	4	2	4	75	25	100		50
Practical II, PMENVP02	Practical 2		4	4	2	4	75	25	100		50
Research Methodology, RMENVT05	Paper V	4		4	3	4	80	20	100	40	
Seminar	Theory				1	1		50	50		
TOTAL		20	8	28	20	29	550	200	750	200	100

SEMESTER II

Major and		Tea	ching Sch	neme			Ex	aminat	tion Scl	heme	
elective Paper,	Theory /		Hours/ w	eek		in	M M	lax. arks		Mini M	imum arks
Code	Practical	Theory	Practical	Total	Cred	Duration hrs.	External	Internal	Total	Theory	Practical
Major I, PMENVT06	Paper VI	4		4	3	4	80	20	100	40	
Major II, PMENVT07	Paper VII	4		4	3	4	80	20	100	40	
Major III, PMENVT08	Paper VIII	4		4	3	4	80	20	100	40	
Elective, PEENVT09 (Paper 1, 2, 3, 4&5)	Paper IX	4		4	3	4	80	20	100	40	
Practical III, PMENVP03	Practical 3		4	4	2	4	75	25	100		50
Practical IV, PMENVP04	Practical 4		4	4	2	4	75	25	100		50
OJT/FP (On Job Training, Internship/Apprentices hip/Field Project), OJT, ENVT10	Paper X	4		4	3	4	80	20	100	40	
Seminar	Theory				1	1		50	50		
TOTAL		20	8	28	20	29	550	200	750	200	100

Scheme of teaching and examination under semester pattern for M.Sc. Program

				MARK	ING S mest	SCHEM ter I	E							
										Exa	mina	tion S	chem	ne
	Theory /		Tea	ching Sc	hem	e		nin		Max Mar	k. ks		Mar Mir	·ks 1imum
Code	Practical	The	ory	Practio	cal	Total	Credit	Duratio	hrs.	External	Internal	Total	Theory	Practical
		UA	CA	UA	CA									
Major - 01MSCMB01	Theory	80	20	LAB-1	25	300	4	3		80	20	100	40	40
Major - 01MSCMB02	Theory	80	20	75			4	3		80	20	100	40	40
Major - 01MSCMB03	Theory	80	20	LAB-2		300	4	3		80	20	100	40	40
Elective – 01MSCMB04	Theory	80	20	75	25		4	3		80	20	100	40	40
inor - 01MSCMB09	Theory	80	20	-	-	100	3	3		80	20	100	40	40
SEMINAR	-	-	50			50	1	-		-	50	50	-	-
TOTAL		400	150	150	50	750	20							

				MARK Sei	ING S mest	CHEM er II	E			•			
									Exa	mina	tion S	chem	ie
	Theory /		Tea	ching So	chem	e		nin	Max Mar	k. ks		Mini Mari	mum ks
Code	Practical	The	ory	Practi	ical	Total	Credit	Duration hrs.	External	Internal	Total	Theory	Practical
		UA	CA	UA	CA								
Major - 02MSCMB01	Theory	80	20	LAB-1	25	300	4	3	80	20	100	40	40
Major - 02MSCMB02	Theory	80	20	75			4	3	80	20	100	40	40
Major - 02MSCMB03	Theory	80	20	LAB-2	25	300	4	3	80	20	100	40	40
Elective – 02MSCMB04	Theory	80	20	75			4	3	80	20	100	40	40
OJT - 02MSCMB09	-	80	20	-	-	100	3	3	80	20	100	40	40
SEMINAR	-	-	50			50	1	-	-	50	50	-	-
TOTAL		400	150	150	50	750	20						

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M.Sc. Program (Semester I&II) in Geology

(Scheme Teaching and examination under semester pattern NEP 2020)

SEMESTER I

Major and Elective Paper	,Theory /	Teachi	ing Sch	neme				Exam	ination	n Scher	ne
Code	Practical	H	ours/ v	veek	it	. II.	Ma Ma	ax. rks		Mi	nimum Marks
		Theory	Practical	Total	Cred	Duration	External	Internal	Total	Theory	Practical
Major I, (PSCGEOT01)	Paper I	4		4	3	4	80	20	100	40	
Major II, (PSCGEOT02)	Paper II	4		4	3	4	80	20	100	40	
Major III, (PSCGEOT03)	Paper III	4		4	3	4	80	20	100	40	
(Select any one) Elective, PSCGEOE- Papers 01to 05	Paper IV	4		4	3	4	80	20	100	40	
Practical I, PSCGEOP01	Practical 1		4	4	2	4	75	25	100		50
Practical II, PSCGEOP02	Practical 2		4	4	2	4	75	25	100		50
Research Methodology, RMGEOT05	Paper I	4		4	3	4	80	20	100	40	
Seminar	Theory				1	1		50	50		
TOTAL		20	8	28	20	29	550	200	750	200	100

SEMESTER II

Major and alasting	Theory /	Teaching Scheme					Ex	aminat	ion Sch	neme	
Paper,Code	Practical	Hou	irs/we	ek		E	M Ma	ax. Irks		Min	nimum Marks
		Theory	Practical	Total	Cred	Duration hrs.	External	Internal	Total	Theory	Practical
Major I, PSCGEOT04	Paper IV	4		4	3	4	80	20	100	40	
Major II, PSCGEOT05	Paper V	4		4	3	4	80	20	100	40	
Major III, PSCGEOT06	Paper VI	4		4	3	4	80	20	100	40	
(Select any one) Elective PSCGEOE-	Paper V	4		4	3	4	80	20	100	40	
Papers 06 to 10											
Practical III, PSGEOP03	Practical 3		4	4	2	4	75	25	100		50
Practical IV, PSGEOP04	Practical 4		4	4	2	4	75	25	100		50
OJT/FP (On Job Training, Internship/Apprentices hip/Field Project), OJT, GEO-01	Paper II	4		4	3	4	80	20	100	40	
Seminar	Theory				1	1		50	50		
TOTAL		20	. 8	28	20	29	550	200	750	200	100

Note- Internal assessment will be based on actual field work with or without collaborated in GSDA, GSI, other Geological organization and also work with NGO's for the rural development.

Eligibility to the course

Subject to their compliance with the provisions of this direction and of other ordinances in force from time to time, the following applicant candidates shall be eligible for the admission to Master of Science and examinations thereof.

Eligibility for Semester I

For M.Sc. Geology for admission to the M. Sc. Semester I in Geology, a candidate shall have offered Geology as one of the subject at the B.Sc. level.

Gondwana University, Gadchiroli



Syllabus

for

Master of Science (M.Sc.) Mathematics

Based on NEP-2020

(With effect from 2023-24)

Board of Studies in Mathematics Faculty: Science and Technology

Semester I for M	1.Sc. Progra	am in Mather	natics								
Course	Teaching Week)	g Scheme (Ho	ours/	Credits			Examinati				
	Theory	Practical	Total	Theory	Practical	Total	Duration in Hrs.	Maximum Ma	rks		Minimun Passing marks
								External assessment Theory	Internal assessment	Total Marks	External assessment + Internal assessment
Major (DSC) 1	4		4	4		4	3	80	20	100	40
Major (DSC) 2	4		4	4		4	3	80	20	100	40
Major (DSC) 3	4		4	4		4	3	80	20	100	40
Elective (DSE)	4		4	4		4	3	80	20	100	40
Research Methodology	4		4	4		4	3	80	20	100	40

Semester II for M.Sc. Program in Mathematics Course Teaching Scheme (Hours/ Credits **Examination Scheme** Week) Theory Practical Total Theory Practical Total Duration Maximum Marks Minimun in Hrs. Passing marks Internal External Total External assessment assessment Marks assessment Theory Internal assessment Major (DSC) 1 4 -----4 4 4 3 ___ 80 20 100 40 Major (DSC) 2 4 ____ 4 4 3 ___ 4 80 20 100 40 Major (DSC) 3 4 4 4 ___ 4 3 ___ 80 20 100 40 Elective (DSE) 4 -----4 4 ___ 4 3 80 20 100 40 On Job 4 ___ 4 4 4 3 ---80 20 100 40 Training /Field Project (OJT/ FP)

Guidelines about Internal Assessment for Semester I and II:

The internal assessment marks shall be awarded by the concerned teacher. The internal assessment marks shall be sent to the University.

In case, the candidate fails in Theory Examination, the Internal Assessment marks will be carried forward for his next supplementary Examination.

There shall be no separate / extra allotment of work load to the teacher concerned. He/ She shall conduct the internal assessment activity during the regular teaching days / periods as a part of regular teaching activity.

The concerned teacher / department / college shall have to keep the record of all the internal assessment activities until six months after the declaration of the results of that semester.



GADCHIROLI

SYLLABI AND COURSE OF STUDIES IN

MICROBIOLOGY

FYPG SEMESTER I AND II UNDER NEP 2020 PROGRAMME

SESSION 2023-ONWARDS

Paper wise Marking Distribution Scheme

		SEM – I				
Major (Mandatory)	Credit	Elective	Credit	On Job Training /Field Project (OJT/FP)	Credit	Total Credit
01MSCMB01 Microbial Diversity and Evolution		01MSCMB04 Microbial Physiology and Metabolism		01MSCMB09 Research		20
Theory = 03 Practical = 01 Theory = 75M $(60 + 15)$ Practical = 25M		Theory = 03 Practical = 01 Theory = 75M (60 + 15) Practical 25M		Theory = 80 Internal = 20		
01MSCMB02 Enzymology and Techniques		01MSCMB05 Principle of Microbiology Theory = 03 Practical = 01				
Theory =03 Practical = 01 Theory = 75M (60 + 15) Practical = 25M	(4x3) 12	Theory = $75M (60 + 15)$ Practical = $25M$ 01MSCMB06	4		4	
		Pharmaceutical Microbiology				
01MSCMB03		Theory = 0.3 Practical = 0.1 Theory = $75M (60 + 15)$ Practical 25M 01MSCMB07				
Commercial Microbiology		Advanced Microbiology Theory = 03 Practical = 01				
Theory = 03 Practical = 01 Theory = $75M(60 + 15)$ Practical = $25M$		Theory = 75M (60 + 15) Practical = 25M 01MSCMB08				
		Agriculture, Dairy and Food Microbiology				
		Theory = $75M (60 + 15)$ Practical = $25M$				
		Note: Student can select any one elective paper				

Paper wise Marking Distribution Scheme

		SEM – II				
Major (Mandatory)	Credit	Elective	Credit	On Job Training /Field Project (OJT/FP)	Credit	Total Credit
02MSCMB01 Advance Techniques in Microbiology Theory = 03 Practical = 01 Theory = 75M (60 + 15) Practical = 25M 02MSCMB02 Membrane structure and signal transduction. Theory =03 Practical = 01 Theory = 75M (60 + 15) Practical = 25M	(4x3) 12	02MSCMB04 Microbial Methods for environment management Theory = 03 Practical = 01 Theory = 75M (60 + 15) Practical 25M 02MSCMB05 Biosafety and IPR Theory = 03 Practical = 01 Theory = 75M (60 + 15) Practical = 25M 02MSCMB06 Microbial Biotechnology Theory = 03Practical = 01 Theory = 75M (60 + 15)	4	02MSCMB09 On Job Training or Field Work Theory = 80 Internal = 20	4	20
02MSCMB03 Microbiological Testing of industrial product Theory = 03 Practical = 01 Theory = 75M (60 + 15) Practical = 25M		Practical 25M02MSCMB07Microbial Enzyme TechnologyTheory = 03 Practical = 01Theory = 03 Practical = 01Theory = 03 Practical = 01OZMSCMB08Microbes in sustainable agriculture and DevelopmentTheory = 03 Practical = 01Theory = 03 Practical = 01Theory = 75M (60 + 15)Practical = 25MNote: Student can select any one elective paper				

Board of Studies in Physics

FACULTY OF SCIENCE AND TECHNOLOGY

GONDWANA UNIVERSITY, GADCHIROLI



Syllabus of

M. Sc. First Year Semester I & Semester II

SUBJECT – PHYSICS

DIRECTION RELATING TO THE EXAMINATION LEADING TO THE TWO YEAR / ONE YEAR MASTER OF SCIENCE DEGREE WITH SEMESTER PATTERN AS PER NEP 2020

Session 2023-2024

Teaching and Examination Schemes:

Teaching and Examination Schemes for Two Year M.Sc. (of four semesters) programme in Subject Physics is as follows:

Course	Course	Name of the course (Title of the Paper)		T S	eaching cheme (ł	ırs)			Exa	Examination Scheme			
Catego ry	Code		Lever	Theory	Pract.	Total	Total	Duration of Exam (Hrs)	Maxin marks	num	Total	MiniPas Marks	sing
							Credit		ESE	CIE			
									(UA)	(CA)		Theory	Practical
Daa	01MSCPH 1	Paper 1: Semiconductor Physics and Devices		4		4	3	3	80	20	100	40	
DSC	01MSCPH 2	Paper 2: Electrodynamics		4		4	3	3	80	20	100	40	
\cap	01MSCPH 3	Paper 3: Mathematical Physics	6.0	4	-	4	3	3	80	20	100	40	
DSE	01MSCPH4.1	Paper 4: Complex Analysis and Numerical Methods											
	01MSCPH4.2	Paper 4: Astrophysics					3	3	80	20	100	40	
	01MSCPH4.3	Paper 4: Energy Physics		4		4							
	01MSCPH4.4	Paper 4: Introduction to Python											
	01MSCPH4.5	Paper 4: Biophysics											
RM	01MSCPH 5	Paper 5: Research Methodology		4		4	3	3	80	20	100	40	
Lab-I	01MSCPH 6	Practical Based On (Paper I+ Paper II)			8	8	2	3-8	80	20	100		50
Lab-II	01MSCP H 7	Practical Based On (Paper 3+ Elective)			8	8	2	3-8	80	20	100		50
Ability Enhanc ement	01MSCPH 8	Seminar		2		2	1			50	50	20	
		Total		22	16	38	20		560	190	750		

Table 1: M.Sc. Semester I

Table 1: M.Sc. Semester II

Course	Course Code	Course Code Course		Te Sc	aching heme (h	urs)			Exami	nation	Scheme			
Catego ry		(Title of the Paper)	Lever	Theory	Pract.	Total	Total	Duration of Exam (Hrs)	Maxim marks	um	Total	MiniPa Marks	ssing	
					С		Credit		ESE (UA)	CIE (CA)		Theory	Practical	
DSC	02MSCPH 1	Paper 1: Fundamentals of Quantum Mechanics		4		4	3	3	80	20	100	40		
	02MSCPH 2	Paper 2: Solid State Physics		4		4	3	3	80	20	100	40		
	02MSCPH 3	Paper 3: Classical and Statistical Mechanics	6.0	4		4	3	3	80	20	100	40		
~	02MSCPH4.1	Paper 4:- Advanced Optoelectronics												
DSL	02MSCPH4.2	Paper 4: Plasma Physics and Space Science												
	02MSCPH4.3	Paper 4: Practical Electronics		4	-	4	3	3	80	20	100	40		
	02MSCPH4.4	Paper 4: Medical Physics												
	02MSCPH4.5	Paper 4: Data Science												
OJT/FP	02MSCPH5	Paper 5: Industrial Training/ Field Project/Research Project		4		4	3	5	80	20	100	50		
Lab	02MSCPH 6	Practical Based On (Paper I+ Paper II)			8	8	2	3-8	80	20	100		50	
Lab-II	02MSCPH 7	Practical Based On (Paper 3+ Elective)			8	8	2	3-8	80	20	100		50	
Ability Enhance ment	02MSCPH 8	Seminar		2		2	1			50	50	20		
	To	tal		22	16	38	20		560	190	750			

Abbreviations: DSC: Discipline Specific Core, DSE: Discipline Specific Elective, OJT: On Job Training: Internship/ Apprenticeship; FP: Field projects; RM: Research Methodology; Research Project: RP. ESE: End Semester Evaluation (UA), CIE: Continuous Internal Evaluation (CA).

GONDWANA UNIVERSITY, GADCHIROLI



DIRECTION RELATING TO THE EXAMINATION LEADING TO THE TWO YEAR / ONE YEAR MASTER OF SCIENCEDEGREE WITH SEMESTER PATTERN AS PER NEP 2020

FACULTY- SCIENCE AND TECHNOLOGY

SUBJECT-ZOOLOGY

M.Sc. Semester I and II

Session 2023-24

Teaching and Examination Schemes:

Teaching and Examination Schemes Two Year M.Sc. (of four semesters) programme is as follows.

	Course	Name of the		Teaching Scheme (hrs) Evaluation Scheme							
Sr No	Categor y	of the Paper)	Level	Th	Tu	P	Total Credit	Duration of Exam (Hrs)	UA (ESE)	CA (CIE)	Mini Passing Marks
1	DSC	Paper 1:- Structure and function of Invertebrates (01MSCZO01)		4			3	3	80	20	40
		Paper 2:- General Physiology (01MSCZO02)		4			3	3	80	20	40
		Paper 3:- Cell Biology and Genetics (01MSCZO03)		4			3	3	80	20	40
2	DSF	Paper 1:- Bioinstrumentation		4			3	3	80	20	40
	Elective	and Biostatistics Paper 2:- Environmental science and Basic concepts of Ecology Paper 3:- Ecology and Environmental Pollution Paper 4:- Medical Laboratory Techniques Paper 5:- Basic Limnology (01MSCZO04)	6.0								
3	R M	Research Methodology (01MSCZO05)		4			4	5	80	20	40
4	Lab-I	Practical Basis On (C1+ C2)				4	2	5	80	20	50
5	Lab-I	Practical Basis On (C1+ EL)				4	2	5	80	20	50
6		Seminar								50	20
				20		8	20		550	200	

Table 1: M.Sc. Semester I

		Name of the	Table	Teaching Scheme (hrs)				Evaluation Scheme						
G	6	of the		The	Tutori	Prac	-							
Sr No	Category	Paper)	Paper)	Paper)	Paper) Paper 1:-	Level	Th	Tu	P	Credit	Duratio n of Examin ation (Hrs)	End Semester Evaluati on(ESE)	Continu ous Internal Evaluati on (CIE)	Minimu m Passing Marks
1	DSC	Paper 1:- Structure and Function of Vertebrates (02MSCZO01)		4			3	3	80	20	40			
		Paper 2: Comparative Endocrinology- (02MSCZO02)	6.0	4			3	3	80	20	40			
		Paper 3 Molecular Biology and Biotechnology:		4			3	3	80	20	40			
		(02MSCZO03)												
2	DSE Elective	Paper 1:- Biology of Parasites Paper 2:- Aquaculture and Management Paper 3:- Applied Entomology Paper 4:- General and Applied Ichthyology Paper 5:- Economic Zoology (02MSCZO04)		4			3	3	80	20	40			
3	OJT / FP	Industrial Training/Survey/ Research Project (02MSCZ005)		4			4	5	80	20	50			
4	Lab-I	Practical Basis On (C1+ C2)				4	2	5	80	20	50			
5	Lab-I	Practical Basis On (C3+ EL)				4	2	5	80	20	50			
6		Seminar								50	20			
		1		20		8	20		550	200				

Annexure-III

DETAILS OF 'ON JOB TRAINING/FIFLD PROJECT/INTERNSHIP AND RESEARCH PROJECT

[A] GUIDELINES FOR 'ON JOB TRAINING/FIELD PROJECT/INTERNSHIP

Semester II

1. Learning Outcomes

col	Student will be able to explain the profile of the institute/company/industry where the OJT/Internship has been carried out.
	Student will be able to describe the need for objective of undertaking the field project.
co2	The student will be able to assess its Strengths, Weaknesses, Opportunities and Challenges (SWOC). OR
	Student will be able to list the outcomes of the Field Project.
co3	Student will be able determine the challenges and future potential of OJT/Internship. OR
	Student will be able to describe the profile of respondents / community involved in the 'Field Project'
co4	Student will be able to correlate theoretical classroom learning and its application in practical situations by accomplishing the tasks undertaken during OJT/ Internship/FP
co5	Student will be able to apply various soft skills such as time management, positive attitude, and communication skills, scientific temperament during OJT/ Internship/ FP
c06	Student will be able to suggest improvements in processes / systems based on his experiences during OJT/ Internship/FP.

2. Every student admitted to M.Sc. Second Semester is compulsorily required to undergo this course bearing 4 credits.

3. During second semester, all students will have to undergo OJT/Internship/FP of 120 Hours.

4. Each student will be required to submit a detailed report to the Department/College/Institute for the work undertaken during this period within 7 days of completion of the training following which the evaluation and assessment for OJT/Internship/FP will be done by the college/institute concerned. The Report submitted must be according to the Learning outcomes and in tune with the rubric for evaluation.

5. College/Institute is required to assign Supervisor/Mentor to students for OJT/Intership/FP who will guide the student in attaining the outcomes of this course.

6. It is desirable to appoint an external examiner from the company/organization where a student has completed his OJT/Internship/FP. However, the Principal/HOD may appoint any other industry professional or subject expert as an external examiner. The remuneration (Rs.200/- per

student for internal and external examiner each), TA/DA or Conveyance Allowance to external examiner may be paid by the college/institute which will be reimbursed by the university as per established rules.

7. The Internal Examiner and External Examiner shall jointly evaluate the report submitted by the student and her/his seminar and shall immediately submit the evaluation report in the prescribed format provided along with.

8. The College/Institute shall submit marks obtained by students to the university as per prevalent system within 3 days of evaluation.

[A-1] EVALUTION REPORT OF OJT/INTERNSHIP/FP

M.Sc. (Major Subject) Examination,_____

Name of Student:

OJT/SLP Title:_____

Roll No._____

Max. Marks: 100

CRITERION	Parameters	Score
Continuous Internal Evaluation	Regularity, punctuality, sincerity, scientific temperament and feedback from the Organization where OJT/Internship/FP has been carried out	out of 50
Organization Profile	Basic information about the organization where the OJT/Internship/FP/ has been carried out	out of 10
SWOC analysis	SWOC analysis, key challenges & opportunities, Goals and objectives of the OJT/Internship/FP	out of 10
Application of theoretical knowledge and Conclusions	out of 10	
Report on OJT/Internship/FP	One copy of spiral bound report duly signed by the Mentor and HOD to be submitted to the College/Institute/Department	out of 10
Presentation	out of 10	
	Total Marks Scored out of 100	
Name and Signa	ernal Examiner	

[B] GUIDELINES FOR RESEARCH PROJECT

1. Learning Outcomes:

On comp	pletion of the research project, the learner will be able to-
col	Formulate a research problem statement under a given state of conditions
co2	Carry out Review of Literature in the context of defined research problem and identify research gap
co3	Develop Constructs, design data collection instruments and collect data using appropriate sampling technique and/ or experiments
co4	Analyse date to arrive at meaningful findings and conclusions using appropriate statistical tools with reference to defined research problem
co5	Write a project report explaining research problems, hypotheses (if any), data collection, analysis of data, findings, conclusions, and future scope
c06	Defend the research design, methods, and findings in the Open Defence Examination

Note:-This table gives generic Cos. Cos may vary with reference to the requirement of a program (course)

2. The research project is a compulsory course carrying 10 credits (3rd Semester-4 Credits and 4th Semester-6 Credit) to become eligible for award of degree of Master of Science under this scheme of examination.

3. College/Institute is required to assign Supervisor to students for Research Project who will guide the students in attaining the outcomes of this course. One such supervisor can supervise maximum 20 students in a session.

4. A supervisor shall be a full-time teacher working with the college/institute concerned. However, in case of non- availability of adequate number of full-time teachers, an ad-hoc or CHB teacher can be appointed as a supervisor. In certain cases, an industry professional or subject expert can also be appointed as a supervisor by the Principal of college/HOD of the Department. Supervisors shall not claim any additional remuneration/honorarium for guiding students.

5. Guidelines for Research Project:

a. Objective:- Every student will be assigned a project in 3rd and 4th Semesters and it will be pursued by him/her under the supervision of an internal supervisor. The objective of the Project Work is to help the student develop his/her ability to apply multidisciplinary concepts, tools and techniques to solve organizational and/or to evolve new/innovative theoretical frame work.

b. Types of Project: The Project may take any one of the following forms (not limited to these):

- 1. Research project
- 2. Review project
- 3. Field study

c. **Submission of the Research Project Report:** Every Student shall submit a Hard Copy of the Research Project Report duly sign by the student and supervisor to the college/institute. Following documents are required to be submitted with the Research Project Report:

i. A certificate from the Supervisor to the effect that the candidate has satisfactorily completed the Project work for not less than one session and that the Project work is the result of the candidates own work and is of sufficiently high standard to warrant its presentation for examination

ii. A declaration by the candidate that the Project is the result of his/ her own research work and the same has not been previously submitted to any examination of this University or any other University. The Project shall be liable to be rejected and / or cancelled of found other wise.

iii. A certificate obtained through anti-plagiarism software stating that the original content of the project work report is more than 70% must be attached at the beginning of the candidate has not copied/ plagiarised the contents of project report and that the supervisor has ensured the originality & authenticity of data/contents incorporated in the project report.

d. General Format of the Report: The project report should preferably be written in the following format (The format may vary depending on the nature of research topic):

i. Introduction

ii. Literature survey

iii. Aim and objective(s)

iv. Materials and Method (Experimental)

v. Results and Discussion

vi. Conclusion

vii. Future scope

viii. References/Bibliography

6. The College / Institute shall schedule the project presentation by the students during semester end examination. The presentation shall be evaluated by the supervisor/mentor assigned to a student (as an internal examiner) and an external examiner appointed by the college/institute.

7. The External Examiner for evaluation of Research Project Report shall be appointed by the University through its established rules and procedures. The remuneration (Rs. 200 per student for Internal and External Examiners), TA/DA or Conveyance Allowance to external examiner may be paid by the college/institute which will be reimbursed by the university as per established rules.

8. The Internal Examiner and External Examiner shall jointly evaluation the report submitted by the student and her/his seminar and shall immediately submit the evalution report in the prescribed format provided along with. 9. The College / Institute shall submit marks obtained by students to the university as per prevalent system within 3 days of evaluation.

Semester-Master of Science (M.Sc.) (OBE-NEP) Summer-20 EVALUATION REPORT OF PROJECT REPORT & VIVA VOCE OF 100 MARKS/200 MARKS

Γ			Evaluation parameters (Sem-3/Sem-4)									
	Roll No.	Name of Student	Continuous Internal Evaluation (50/100)	Introduction and Literature survey (10/20)	Aim and objective (s) (5/10)	Materials and Method (10/20)	Results and Discussion (15/30)	Presentation and viva voce(10/20)	Marks Obtained (Sem-3:100 marks/Sem- 4:200 marks)			
L												

Name & Signature of External Examiner

Name & Signature of Internal Examiner