DEB-UGC application for Programme approval for AY 2023-24

School of Sciences, YCMOU Nashik

(Formerly School of Architecture, Science and Technology)

Programme Project Report (PPR)

M.Sc. (Botany)

A. **Programme project report** (PPR)

Name of Program :		
a	Programme's mission & objectives	**Mission**: The 'M.Sc. (Botany)' Program aims to create awareness about Botany, analyze various vital Botanical issues and find creative solutions for the same, to inculcate values, entrepreneurship and research attitude in learners. **Objectives**: The objectives of this course are 1. Develop Advanced Knowledge: The primary objective of the postgraduate program in Botany Studies is to provide students with advanced knowledge and a deeper understanding of various aspects of Botany, ecology, Mycology, Plant Diversity and Pathology. 2. Interdisciplinary Perspective: The program aims to foster an interdisciplinary perspective, enabling students to integrate knowledge from various disciplines, including biology, chemistry, geology, economics, and social sciences, to address complex Botanical issues. 3. Critical Thinking and Research Skills: The program seeks to cultivate critical thinking and research skills in students, encouraging them to analyze environmental problems, conduct empirical research, and apply data-driven approaches to find sustainable solutions. 4. Botanical Policy and Governance: Students will gain insights into Botanical policy frameworks, laws, and governance mechanisms to evaluate the effectiveness of Botanical regulations and contribute to policy formulation. 5. Sustainable Development: The program aims to equip students with the tools to promote sustainable development, considering the social, economic, and ecological dimensions of Botanical challenges. 6. Botanical Awareness and Ethics: Enhance Botanical awareness and ethical values among students, emphasizing their responsibility as future Botanical professionals to protect and preserve the natural world.
b	Relevance of the program with HEI's Mission and Goals	Objects of the YCMOU (as per the YCMOU Act) which would be fulfilled by implementing the proposed program 1. To provide through instruction, teaching and training and other educational opportunities, access to larger and larger segment of population, and in particular to the disadvantaged groups such as those living in remote and rural areas including working people, housewives and other adults who wish to upgrade or acquire knowledge through studies in various fields; [1(a)] 2. To strengthen and diversify the degrees, diploma and certificate courses at various educational levels, to fulfil the knowledge, skills and development needs of the

		individuals, institutions and society in general, by relating, particularly, the courses, to the needs of the employment and economic development of the state on the basis of its natural and human resources; [1(b)] 3. To promote acquisition of knowledge in a rapidly developing and changing society and to continually offer opportunity of upgrading knowledge, training and skills in the context of innovations, research and discovery in all field of human endeavour by developing educational network with the use of modern communication media and technologies appropriate for a learning society; [1(c)] 4. To provide an innovative system of University level education, flexible and open, in regard to the methods and pace of learning, combination of courses, eligibility for enrolment, age of entry, conduct of examinations and operation of the program, with a review to promote learning and encourage excellence in all fields of knowledge; [1(d)] 5. To contribute to the improvement of the education system in the state by providing a non-formal channel complementary to the formal system and encouraging transfer of credits and exchange of teaching staff by making a wide use of text and other software developed by the University; [1(e)] 6. To develop innovative, need based Vocational courses and establish industry, institution linkage for developing the society; [1(f)] 7. To provide through incidental and non-formal means, for continuing and extension of education in various cultural forms, arts, crafts and skills of the country, raising their quality and improving their availability to the people; [1(g)] 8. To provide for the counseling and guidance to its students; [1(h)] 9. To provide major part of its resources and direct efforts in designing, developing and offering need-based and relevant vocational courses. [1(i)]
c	Nature of prospective target group of learners	Candidates with B.Sc. (BCZ) /B.Sc. with Botany at FY and SY or Equivalent pass. Although, similar PG Program on offer from the conventional institutes, conventional educational system offers very little freedom to learners as regards to when, where, how to learn. Proposed Program aims to provide this freedom to learners to the maximum possible extent.
d	Appropriateness of programme to be conducted in Open and Distance Learning mode to acquire specific skills and competence Specify the expected learning outcomes in terms of: 1. Knowledge Attainment: 2. Skills and Competencies: Compliances of academic,	Proposed Program aims to provide relevant skills as needed by the working professional to identify, and solve challenging problems in Botany, thus contributing to the ever increasing demands of the society/industry. The program helps to develop scientific tempers and attitudes, which in turn can prove to be beneficial for the society since the scientific developments can make a nation or society to grow at a rapid pace. (After studying this program, students will be more equipped to learn and know about different biological systems, their coordination and control as well as evolution, behavior and biological roles of the animals in the ecosystem). This program uses the Open and Distance(ODL) Mode of Education- Theory, Practical/ Project component of teaching-

	professional & occupational standards:	learning is offered as face to face counseling by the qualified and experienced teacher at recognized LSC along with continuous assessment and offline materials/ resources in printed/ Soft Copy/ book format. Hence, this program is appropriate to conduct in Open and Distance Learning mode to acquire specified skills and competence.
e	Instructional Design Instructional Design : **1.** Curriculum Design (Outcome of Expert Committee meeting; Program Structure: specify the theory, practical, fieldwork, project, etc components): **2.** Total Credit Points (including course wise): **3.** Detailed Syllabi: **4.** Duration of the program (Minimum & Maximum): **5.** Medium of Instruction: **6.** Type of Program (General/Technical/ Professional): **7.** Faculty and Support Staff: **8.** Instructional Design & Delivery Mechanism (Media to be used - print, audio, video, online, computer aided, web based, etc. (course wise)): Student Support Service System (Specify the provisions to be made at Head Quarter, Regional Centers, Learner Support Centers and Web based, etc):	**Semester pattern:** This programme is of total 4 semesters. Distribution of the credits are as follows –

Sem	Mandatory Courses (DSC)			Elective Courses (DSE) (4 CR)	Other Courses 4 CR/ 6 CR	Total Courses (CR)
	Theory		Practical 4 CR			
	4 CR	2 CR				
1	2	1	1	1	1 – Research Methodology (4 CR)	**6** (22 CR)
2	2	1	1	1	Any one - OJT/ Field Projects (4 CR)	**6** (22 CR)
3	2	1	1	1	1- Research Project (4 CR)	**6** (22 CR)
4	2	-	1	1	1- Research Project (6 CR)	**5** (22 CR)
Total	8 x 4 = 32 (38 CR)	3 x 2 = 06	4 x 4 = (16 CR)	4 x 4 = (16 CR)	3 x 4 + 1 x 6 = (18 CR)	**23** (88 CR)

Programme Structure:

SN	Course Category	Code	Course Name	CA	EE	TM	Type	CR	Min %
[Level 6.0] Semester 01: 22 Credits									
01	Mandatory (DSC)	BOT501	Diversity of Non-vascular Plants-I	30	70	100	T	4	40%
02	Mandatory (DSC)	BOT502	Diversity of Non-Vascular Plants-II	30	70	100	T	4	40%
03	Mandatory (DSC)	BOT503	Diversity of Vascular Plants & Paleobotany-I	15	35	100	T	2	40%
04	Mandatory (DSC)	BOT504	Lab Activities on BOT501, BOT502 & BOT503	50	50	50	P	4	40%
05	RM	RES505	Research Methodology	30	70	100	T	4	40%
Elective (DSE)Courses (Select Any One)									
06	Elective (DSE)	BOT506	Applied Phycology	30	70	100	T	4	40%
07	Elective	BOT507	Tools and Techniques in	30	70	100	T	4	40%

	(DSE)		plant Science							
[Level 6.0] Semester 02 : 22 Credits										
08	Mandatory (DSC)	BOT509	Plant Physiology	30	70	100	T	4	40%
09	Mandatory (DSC)	BOT510	Herbal Wealth	30	70	100	T	4	40%
10	Mandatory (DSC)	BOT511	Diversity of Vascular Plants and Paleobotany-II	15	35	100	T	2	40%
11	Mandatory (DSC)	BOT512	Lab Activities on BOT509, BOT510 & BOT511	50	50	50	P	4	40%
12	OJT/FP	BOT513 BOT514	Any one OJT or FP	50	50	100	TW	4	40%
Elective (DSE)Courses (Select Any One)										
13	Elective (DSE)	BOT515	Biotechnology and Molecular Biology	30	70	100	T	4	40%
14	Elective (DSE)	BOT516	Ecology and Phytogeography	30	70	100	T	4	40%
Exit option: PGD 14- BOT (44 Credits) after Three Year UG Degree										
[Level 6.5] Semester 03 : 22 Credits										
15	Mandatory (DSC)	BOT601	Cytogenetics and Plant Breeding	30	70	100	T	4	40%
16	Mandatory (DSC)	BOT602	Advanced Plant Physiology	30	70	100	T	4	40%
17	Mandatory (DSC)	BOT603	Pharmacognosy	15	35	100	T	2	40%
18	Mandatory (DSC)	BOT604	Lab Activities on BOT601, BOT602 & BOT603	50	50	50	P	4	40%
19	RP	BOT605	Research Project	50	50	100	PW	4	40%
Elective (DSE)Courses (Select Any One)										
20	Elective (DSE)	BOT606	Biostatistics	30	70	100	T	4	40%
21	Elective (DSE)	BOT607	Mycology and Plant Pathology	30	70	100	T	4	40%
22	Elective	BOT608	Renewable Energy Studies	30	70	100	T	4	40%

	(DSE)								
[Level 6.5] Semester 04 : 22 Credits									
23	Mandatory (DSC)	BOT609	Taxonomy of Angiosperms	30	70	100	T	4	40%
24	Mandatory (DSC)	BOT610	Seed Technology	30	70	100	T	4	40%
25	Mandatory (DSC)	BOT611	Lab Activities on BOT609 & BOT610	30	70	100	T	4	40%
26	RP	BOT612	Research Project	75	75	150	PW	6	40%
Elective (DSE)Courses (Select Any One)									
27	Elective (DSE)	BOT613	Anatomy and Embryology	30	70	100	T	4	40%
28	Elective (DSE)	BOT614	Hydroponic Technology	30	70	100	T	4	40%
29	Elective (DSE)	BOT615	Medicinal plants and their Applications	30	70	100	T	4	40%

Total Credits: 88 and Total Courses: 29 (with electives)
Detailed Syllabi: Available at https://drive.google.com/drive/folders/13lNyj1PT7qN-AAAi2eE8fwDAsCQFWMQz?tid=0B451Yjwt_acQR1VPSUQ4Q0tvams

- **Programme Outcomes (PO) and Course Outcomes (CO): Refer Appendix I**

Minimum programme duration: 2 years
Maximum Programme Duration: 4 years
Medium of Instruction: English
Type of Program: General
Faculty and Support Staff: Dr. Chetana Kamlaskar, Director, School of Sciences, Dr. Bharat P. More (Academic coordinator), Ms. Minakshi Babusing Kadel (Academic coordinator),, Dr. Jagruti Chavan (Academic coordinator),, School of Sciences.

Instructional Design & Delivery Mechanism :

- Minimum number of face-to-face counseling sessions: 12 (for 4 Credits)
- (For each theory type of course of 4 credits duration of each counseling session shall be 01 Clock Hour)
- (For each Practical/Project type of course of 4 credits duration of each counseling session shall be 02 Clock Hour).
- Minimum number of face-to-face counseling sessions: 6 (for 2 Credits)

		• (For each theory type of course of 2 credits duration of each counseling session shall be 01 Clock Hour) • Minimum number of face-to-face counseling sessions: 18 (for 6 Credits) • (For each Practical/Project type of course of 6 credits duration of each counseling session shall be 02 Clock Hour). • Required study efforts: Total 2640 Hours (including Self-Study) during all 4 semesters. • Attendance: Minimum 80 % attendance recommended for all activity type of courses • eBook: eBook in SLM format for each course (Free Download from University website) at all semesters 01 to semester 04 **Student Support Service System**: At headquarter: Support from School, SSD, Evaluation Division and Exam Unit-3 At Regional Centers: From all 8 regional centers within MH At Learner Support Centers: Recognized Learner support centers within MH Web Based: http://ycmou.digitaluniversity.ac http://www.ycmou.ac.in
f	Procedure for admissions, curriculum transaction and evaluation 1. Define the Admission Policy (including web based tools to be adopted: 2. Eligibility Criteria: 3. Fee Structure: 4. Financial Assistance to Learners (if any): 5. Activity planner of all academic activities of the academic session: Policy for Evaluation of learner progress along with methods and tools:	**Admissions procedure**: A customized "Online Annual Admission system" available at DU portal http://ycmou.digitaluniveristy.ac Online payment facility is made available using a credit card or debit card or internet banking. **Admission Eligibility:** B.Sc.(BCZ) /B.Sc. with Botany at FY and SY or Equivalent pass Total programme Fee: Total ₹ 46,316 for all 04 Semesters, which is duly approved by the university authorities. Curriculum Transaction: • 01 SLM e-Book will be developed for each theory course • Total 12 Face-To-Face counseling sessions, each of 60 Minutes duration, will be provided at respective learner support center, for each theory course. • Total 12 Face-To-Face counseling sessions, each of 120 Minutes duration, will be provided at respective learner support center, for each practical course. • Curriculum updation will be after every 3 years **Activity planner:**

		Teaching-Learning of students admitted in a single academic year shall start from 01-Sep. every year. (For all Programmes) **Policy:** Refer Evaluation pattern given in Annexure I. **For exit option**: PGD 14-BOT: Min 40% or better marks in total 12 courses without electives & 14 courses with electives (subjects) of total 44 credits at Semesters 01 to 02.
g	Requirement of the Laboratory Support and Library Resources: 1. Laboratory Support to the learners (if any): 2. Provision of Practical book for learners (if any): 3. Provision of Virtual Reality Methods for Practical in case of Online learning (if any):	Laboratory requirement and Library Resources – Yes. Institutes/Colleges affiliated with conventional university offering M.Sc. (Botany) will be only recognized as a Learner support center of this university for this programme. So, requirement of laboratory support and library resources will be automatically ensured. Recommended: Computer infrastructure with Wi-Fi/broadband connection with Botany related software/tool.
h	Cost Estimate of the Program and the Provisions: 1. Indicate the Budgetary Requirement for: 1.Programme Development 2. Program Delivery 3. Program Maintenance	Budget provision for this development under A.27P.38Fees/ Royalties/ honorarium to Writer/Editors/Trans.

SN	Activity Description	Odd semesters like 01, 03, 05 and 07 From 01-Sep Till 31-Jan	Even semesters like 02, 04, 06 and 08 From 01-Feb Till 31-Jul
Admission: offered on Annual basis collectively for 2 semesters in each academic year.			
01	Fresh and Further Yearly Admission	From June Till Aug	NA
Teaching - Learning			
02	Teaching – Learning (16 Weeks) & Backlog Clearing	From 01-Aug Till 21-Nov	From 01-Feb Till 23-May
End Exam (EE) Form Submission (Required only for Repeater Students)			
03	Online EE Form Submission by SCs/ students at University	On or Before 21-Oct	On or Before 23-Apr
Continuous Assessment (CA) Submission			
05	CA Availability	From 01-Sep Till 21-Nov	From 01-Mar Till 23-May
06	CA Submission by Students	From 01-Nov Till 30-Nov	From 01-May Till 31-May
End Examination (EE)			
07	End Exam for Theory Courses	From 25-Nov to 05-Dec	From 25-May to 05-Jun
08	EE for Activity Courses (Pr, TW, PW, STW, SV)	Immediately after the last day of end exam for theory courses, but positively before 15-Dec	Immediately after the last day of end exam for theory courses, but positively before 15-Jun
10	End Exam Result Declaration	On or Before 31-Jan	On or Before 31-Jul
Semester End Vacation			
11	Semester End Vacation	Jan	July

i	Quality Assurance Mechanism and expected Program Outcomes*: 1. Define the Review Mechanism of the Program for enhancing the standards of curriculum, instructional design relevant to professional requirements: 2. Define Program Benchmark Statements: 3. Mechanism for Monitoring the effectiveness of the program: *(Minimum standards must adhere to UGC (ODL) Regulations,2020 & directions of the Statutory Bodies of the University)	M.Sc. (Botany) programme is designed to provide scientific as well as professional level competency to learners, and offers advanced theoretical as well as practical knowledge to learners. This programme enables the learner to develop interest in knowing more about the environment and to develop research attitude. University has policy to review and revise every course at least once in five years of its launching. The following key result areas will be closely monitored. i. Enrolment of student (Equated Access) ii. Equal weightage for each credit in student evaluation iii. Demonstrate in-depth knowledge of Botany, both in theory and practical iv. Examination Results v. Placements/satisfaction of passing out students vi. Administrative/stakeholder feedback

B. **Duration & Nomenclature**

Name of Programme :-	M.Sc. in Botany
Medium	English
Year	2 Years
Level	PG
Academic Session	2023-24
Entry Qualification (as per the Specification of Degrees, 2014)	B.Sc.(BCZ) /B.Sc. with Botany at FY and SY or Equivalent pass
Duration (as per the Specification of Degrees, 2014)	2 Years
Name of the Department	School of Sciences

C. **Mode of Evaluation**

Year	2023	
Whether Weightages to continuous assessment and end semester examinations or term end examinations as per clause mentioned in Regulations	Yes 1. 30% - 70% weightage Pattern for theory 2. 50% - 50% Weightage pattern for Practical/OJT/FP/RP	
Examination Scheme	Formative and Summative	
Percentage of Continuous Assessment (%)	Theory	30%
	Practical/OJT/FP/RP	50%
Percentage of Term End Examination (%)	Theory	70%
	Practical/OJT/FP/RP	50%
Pass or Fail Criteria	40% for Pass	
Pass/Fail Criteria (% Pass Marks)	40% and above - Pass	

	Below 40 % - Fail

D. Mode of Examination

Whether examination through Online (For ODL Programs)	No

E. SLM Development (Submit all SLM in pdf in pen drive and prepare the SLM availability sheet in the order as per sample in pdf for each program separately)

Particulars	% SLM in house developed	% SLM in collaboration with HEI (It should not be more than 40% of total SLM .If it is in collaboration then provide MOU in Soft & Hard copy
Printing Material	100%	-
Audio-Video Material	-	-
Online Material	Yes [pdf of SLMs]	-
Compute based Material	-	-

F. Program wise faculty details (Requirement of Minimum three faculties not below the rank of Assistant Professor to be furnished in the following format – to be taken from Establishment

Sr. No.	Emp. No	Name of the Faculty	Designation	Date of Joining	Qualification	Specialization	Teaching experience	Address	Phone no.	Email	Appointment letter
1	0939	Ms. Minakshi Babusing Kadel	Academic Coordinator	13/03/2024	M.Sc. Botany, SET (Life Sciences), SET (Environmental Sciences)	Botany	2 years	YCMOU	8888694739	sos.botany@ycmou.ac.in	04/03/2024
2	1067	Dr. Jagruti Chavan	Academic Coordinator	11/03/2024	M.Sc. , SET, Ph.D (Environmental Sciences)	Environmental Sciences	9 years	YCMOU	8554894494	sos.evs@ycmou.ac.in	04/03/2024
3		Dr. Bharat Pralhad More	Academic Coordinator	13/01/2020	M.Sc. Chemistry, Ph.D.	Organic Chemistry	16 Years	YCMOU	9175456300	bhrtmre@gmail.com	13/01/2020

G. List of Learner Support Centres Program wise and Region wise to be submitted as per following format – to be taken from SSD Director

Sr. No	Study centre code	Name & Address of LSC	Name of the HEI to which college/Institute is affiliated (where LSC is established)	Whether the College /Institute Private or Govt. (where LSC is established)	Name and Contact Details of Coordinator/ counsellor :	Qualification of Coordinator/ Counsellor :	No. of Counsellor :	Name of Proposed Programmes/ Course from July, 2023 onwards:	Approved	Not Approved with Reason

Appendix I

Programme Objectives, Scope of the Programme & Programme Outcomes (PO)

And

Course Outcomes (CO)

Programme Name: Master of Science (BOTANY)		
1	**Programme Objectives**	This programme has the following broad objectives: • To prepare the learners, with the necessary theoretical knowledge and practical skills to conduct independent research in botany. This includes training in research methodologies, experimental design, data analysis, and interpretation. • To produce the learners who are proficient in various aspects of botany, including plant anatomy, physiology, taxonomy, ecology, genetics, and evolution. Graduates should be equipped to apply their knowledge in diverse settings such as academia, industry, government, and conservation organizations. • To **Develop critical thinking and problem-solving abilities**: Through coursework, laboratory exercises, fieldwork, and research projects, students should develop critical thinking skills and the ability to solve complex problems in botany. This involves the application of scientific principles to analyze and address issues related to plant biology, ecology, conservation, and sustainability. • To provide students with the necessary theoretical knowledge and practical skills to conduct independent research in botany. This includes training in research methodologies, experimental design, data analysis, and interpretation.
2	**Scope of the Programme**	After successful completion of the M.Sc. programme, the learner has ample opportunities to use their Botany knowledge in different areas: **Career Opportunities**: • Advancement to leadership positions in research institutions, government agencies, or corporations. • Entrepreneurship opportunities in agriculture, biotechnology, eco-tourism, or botanical product development. • Consulting opportunities in environmental impact assessment, land use planning, or sustainable development projects. • Collaboration with interdisciplinary teams in areas such as climate change adaptation, ecosystem restoration, or biodiversity conservation. **Job Positions**: • Research Scientist • Laboratory Manager • Environmental Policy Analyst • Seed Analyst • Plant Geneticist

		• Ecologist • Park Ranger • Plant Breeder • Botanical Illustrator **Job Opportunities**: • Botanist: Conduct research in laboratories, botanical gardens, or field settings, studying plant life, ecology, and evolution. • Plant Biotechnologist: Work in biotechnology companies, agricultural organizations, or research institutions to develop genetically modified crops, improve crop yields, or enhance plant resistance to pests and diseases. • Environmental Consultant: Assess the impact of human activities on plant biodiversity and ecosystems, and provide recommendations for conservation and sustainable land management practices. • Conservation Scientist: Work for government agencies, non-profit organizations, or environmental consulting firms to develop and implement strategies for the protection and restoration of plant species and habitats. • Educator: Teach botany and related subjects at colleges, universities, botanical gardens, museums, or outreach programs. • Agronomist: Provide expertise in crop production, soil management, and sustainable agriculture practices to enhance food security and agricultural sustainability. • Forester: Manage forest ecosystems, conduct research on tree species, and develop strategies for forest conservation and sustainable timber harvesting. • Horticulturist: Cultivate and manage plants in botanical gardens, nurseries, landscaping firms, or agricultural production facilities. • Plant Pathologist: Identify and control plant diseases, conduct research on plant-pathogen interactions, and develop strategies for disease management in agriculture and horticulture **Scope for Higher Studies**: • Doctoral (Ph.D.) studies in Botany, Plant Biology, Ecology, Genetics, Biotechnology, or related fields. • Postdoctoral research positions for further specialization and career advancement. • Professional certifications or additional training in specialized areas such as plant breeding, GIS mapping, or environmental law and policy.
3	**Programme Outcome**	After successful completion of this programme, students will be able to • Enhance their understanding of advanced concepts and principles in botany, including plant physiology, ecology, genetics, taxonomy, and biotechnology. • Formulate research questions, design experiments or investigations, collect and analyse data, and present their findings in a clear and coherent manner. • Applying Techniques and Methodologies acquire proficiency in a variety of laboratory techniques, field methodologies, and analytical tools used in botanical research and practice. • Formulate testable hypotheses based on theoretical frameworks and empirical evidence, contributing to the advancement of knowledge in botany.

		• Develop the ability to effectively communicate complex scientific information through written reports, oral presentations, and visual aids, catering to diverse audiences including peers, policymakers, and the general public. • Present complex botanical concepts, proofs, and research findings to both technical and non-technical audiences. • Develop the skills to analyze complex botanical problems, identify key challenges, and propose innovative solutions informed by scientific evidence and critical thinking.

4	**Course Outcomes**	**SN**	**Course Code & Name**	**Course Outcomes**
		Semester 1		
		1	BOT501: Diversity of Non-vascular Plants-I	After successful completion of this course, student should be able to • Identify and describe the different types of nonvascular plants. • Explain the key features of nonvascular plants and their life cycles. • Discuss the ecological importance of nonvascular plants. • Understand the application of Diversity of Non-vascular Plants . • Apply their knowledge of nonvascular plants to real- world problems, such as conservation and restoration.
		2	BOT502: Diversity of Non-Vascular Plants-II	After successful completion of this course, student should be able to • Discuss the ecological importance of nonvascular plants. • Understand the application of Diversity of Non-vascular Plants. • Explain the key features of nonvascular plants and their life cycles. • Evaluate the potential of nonvascular plants as biofertilizers and bioagents.
		3	BOT503: Diversity of Vascular Plants & Paleobotany-I	After successful completion of this course, student will be able to • The student will be able to identify the major groups of vascular plants, both living and extinct, with 80% accuracy. • The student will be able to explain the evolutionary relationships between the major groups of vascular plants.

					• The student will be able to use paleobotanical data to reconstruct the history of the Earth's climate and environment. • The student will be able to write a research paper on a topic related to the diversity of vascular plants.
			4	BOT504: Lab Activities on BOT501, BOT502 & BOT503	After successful completion of this course, student will be able to • Identify the major groups of non-vascular plants, both living and extinct, with 80% accuracy. • Explain the evolutionary relationships between the major groups of non-vascular plants. • Use non-vascular plant data to reconstruct the history of the Earth's climate and environment. • Write a research paper on a topic related to the diversity of non-vascular plants.
			5	RES505: Research Methodology	After successful completion of this course, student will be able to • Understand some basic concepts of research and its methodologies. • Select proper method of Data collection & representation • Select and apply appropriate statistical method for data analysis. • Perform literature review, research writings with the knowledge of Intellectual Property Rights.
			6	BOT506: Applied Phycology	After successful completion of this course, student should be able to • Identify and classify different groups of algae, including their morphological and anatomical characteristics. • Understand the ecological roles and contributions of algae in various ecosystems and their importance in the food chain. • Analyze the physiological processes of algae, including photosynthesis and reproduction, and relate them to broader botanical principles. • Evaluate the impact of algae on the environment, including harmful algal blooms and their management strategies. • Apply phycological knowledge in the field of agriculture, including algae-based fertilizers, biofertilizers, and soil health improvement.

		7	BOT507: Tools and Techniques in plant Science	After successful completion of this course, student should be able to • Understand the basic tools and techniques used in plant science, such as microscopes, cell culture techniques, and genetic engineering. • Apply these tools and techniques to the study of plants, such as the identification of plant cells, the culture of plant cells, and the transformation of plant cells with genes. • Communicate effectively about tools and techniques in plant science through written reports, presentations, and other media.
		Semester 2		
		8	BOT509 Plant Physiology	After successful completion of this course, student should be able to • Explain the role of plant hormones in growth regulation, development, and responses to environmental cues. • Understand the mechanisms of water and mineral transport in plants and their significance in maintaining plant health and homeostasis. • Analyze the factors influencing plant growth, including light, temperature, humidity, and nutrient availability. • Investigate the responses of plants to abiotic and biotic stress factors, such as drought, salinity, pathogens, and herbivores. • Evaluate the impact of environmental factors on crop productivity and explore strategies for improving crop yield and stress tolerance.
		9	BOT510: Herbal Wealth	After successful completion of this course, student should be able to • Describe the traditional and contemporary uses of herbs in different cultures for medicinal, culinary, cosmetic, and aromatic purposes. • Understand the chemical constituents and active compounds present in medicinal herbs and their potential therapeutic benefits. • Evaluate the scientific evidence supporting the medicinal properties and efficacy of herbal remedies. • Discuss the importance of herbal wealth in the context of traditional medicine systems, such as Ayurveda, Traditional Chinese Medicine, and Indigenous knowledge.

					• Analyze the ecological significance of herbal resources and their conservation in the context of sustainable practices and biodiversity conservation.
			10	BOT511: Diversity of Vascular Plants and Paleobotany-II	After successful completion of this course, student should be able to • The student will be able to identify the major groups of vascular plants, both living and extinct, with 80% accuracy. • The student will be able to explain the evolutionary relationships between the major groups of vascular plants. • The student will be able to use paleobotanical data to reconstruct the history of the Earth's climate and environment. • The student will be able to write a research paper on a topic related to the diversity of vascular plants.
			11	BOT512: Lab Activities on BOT509, BOT510 & BOT511	After successful completion of this course, student should be able to • Identify medicinal plants by their common and scientific names. • Describe the chemical constituents of medicinal plants and their effects on humans. • Discuss the traditional and modern uses of medicinal plants. • Evaluate the safety and efficacy of medicinal plants. • Collect and prepare herbarium specimens. • Conduct field studies of medicinal plants. • Apply ethical principles to the study and use of medicinal plants.
			12	BOT513: OJT	After successful completion of this course, student should be able to – • Students will demonstrate proficiency in applying theoretical knowledge and academic concepts to real-world professional situations. • Students will possess job-specific skills that are relevant to their chosen field of study, enabling them to perform tasks and responsibilities effectively and efficiently. • Students will acquire a comprehensive understanding of industry practices, trends, and challenges, contributing to their overall

					knowledge and expertise in the field. • Students will establish professional networks and relationships, expanding their professional connections and opportunities for future collaborations and career advancement. • Students will develop problem-solving and critical thinking abilities, demonstrating the ability to analyze complex situations, make informed decisions, and propose effective solutions. • Students will demonstrate professionalism, adaptability, and effective communication skills in a professional work environment.
			13	BOT514:FP	After successful completion of this course, student should be able to – • Demonstrate the ability to apply theoretical knowledge and concepts to real-world situations, effectively bridging the gap between academia and practical applications. • Develop advanced research and investigative skills, including the ability to design and execute research projects, collect and analyze data, and draw well-founded conclusions. • Conduct independent research, demonstrating the ability to formulate research questions, design appropriate methodologies, and independently execute fieldwork or data collection. • Exhibit effective collaboration and communication skills, demonstrating the ability to work collaboratively with others, engage in professional dialogue, and effectively communicate their research findings to diverse audiences. • Showcase advanced problem-solving and critical thinking abilities, demonstrating the capacity to identify and address challenges encountered during fieldwork, analyze complex data, and propose innovative solutions. • Demonstrate a thorough understanding of ethical considerations, field safety protocols, and best practices in their chosen field of study.
			14	BOT515: Biotechnology and Molecular Biology	After successful completion of this course, student should be able to • Define the terms "biotechnology", "molecular biology", and explain their relationship to each other. • Understand the basic principles of biotechnology and molecular biology, such as DNA cloning, gene

				expression, and protein synthesis. • Apply these principles to the study of plants, such as the development of new cultivars, the improvement of crop yields, and the development of new drugs. • Communicate effectively about biotechnology and molecular biology through written reports, presentations, and other media.
		15	BOT516: Ecology and Phytogeography	After successful completion of this course, student should be able to • Understand the basic principles of ecology and phytogeography, such as the distribution of plants, the interactions between plants and their environment, and the effects of human activities on plant communities. • Apply these principles to the study of plant communities, such as the identification of plant communities, the study of the factors that influence the distribution of plants, and the assessment of the impact of human activities on plant communities. • Communicate effectively about ecology and phytogeography through written reports, presentations, and other media.
		Semester 3		
		16	BOT601: Cytogenetics and Plant Breeding	After successful completion of this course, student should be able to • Identify and interpret chromosomal abnormalities in plant cells. • Apply cytogenetics to plant breeding by selecting parents with desirable traits and using various breeding methods. • Design and execute breeding experiments using proper techniques. • Evaluate the results of breeding experiments and draw conclusions about the effectiveness of the breeding methods used.
		17	BOT602: Advanced Plant Physiology	After successful completion of this course, student should be able to • Describe the basic principles of plant physiology, such as photosynthesis, respiration, transpiration, and the role of hormones in plant growth and development. • Apply these principles to the study of plant growth, development, and responses to the environment.

					• Conduct research on plant physiology using proper techniques and equipment. • Communicate effectively about plant physiology through written reports, presentations, and other media.
			18	BOT603: Pharmacognosy	After successful completion of this course, student should be able to • Identify and classify crude drugs by their common and scientific names. • Describe the chemistry of secondary metabolites, such as alkaloids, glycosides, and tannins. • Describe the methods of extraction, purification, and standardization of crude drugs. • Understand the pharmacology of crude drugs, such as their mechanisms of action and side effects. • Evaluate the safety and efficacy of herbal medicines.
			19	BOT604: Lab Activities on BOT601, BOT602 & BOT603	After successful completion of this course, student should be able to • Identify and interpret chromosomal abnormalities in plant cells. • Apply cytogenetics to plant breeding by selecting parents with desirable traits and using various breeding methods. • Design and execute breeding experiments using proper techniques. • Evaluate the results of breeding experiments and draw conclusions about the effectiveness of the breeding methods used. • Understand the basic principles of plant physiology, such as photosynthesis, respiration, transpiration, and the role of hormones in plant growth and development. • Apply these principles to the study of plant growth, development, and responses to the environment.
			20	BOT605: Research Project - I	After successful completion of this course, student should be able to • Frame research problem & do literature survey about the same • Do independent thinking • Learn basic techniques for carrying out research

		21	BOT606 Biostatistics	After successful completion of this course, student should be able to • Calculate basic statistical Majors, such as the mean, median, and standard deviation. • Use statistical software to analyze botanical data. • Interpret the results of statistical analyses. • Communicate the results of statistical analyses in a clear and concise manner.
		22	BOT607: Mycology and Plant Pathology	After successful completion of this course, student should be able to • Learning the structure, life cycles, economic importance etc of bacteria, virus, fungi and apply this knowledge in identification of organisms. • Analysis of diseases based on symptoms, and apply knowledge for identification of disease • Understanding and application of knowledge of fungal metabolites, their uses for human welfare. • Knowledge on the history, milestones in phytopathology of India • Learn host-parasite relationships, various diseases and control methods. • Practical knowledge on disease control measures in various crops. • Knowledge on bacterial, viral, mycorhizal and nematode diseases, symptoms and their importance.
		23	BOT608: Renewable Energy Studies	After successful completion of this course, student should be able to • Critically analyze and evaluate different renewable energy technologies and their suitability for specific contexts. • Capability of planning, designing, and managing renewable energy projects, considering technical, economic, and regulatory aspects. • Demonstrating an understanding of the environmental and social implications of renewable energy deployment and make informed decisions to minimize negative impacts. • Navigating energy policies and regulations and advocate for sustainable and renewable energy initiatives.
		Semester 4		
		24	BOT609:	After successful completion of this course, student should

				Taxonomy of Angiosperms	be able to • Identify and classify angiosperms by their common and scientific names. • Describe the morphological, anatomical, and molecular features of angiosperms. • Explain the evolutionary history of angiosperms. • Apply taxonomic principles to the study of angiosperms in the field and laboratory. • Communicate effectively about angiosperm taxonomy through written reports, presentations, and other media.
			25	BOT610: Seed Technology	After successful completion of this course, student should be able to • Define the terms "seed technology", "seed production", "seed processing", and "seed storage" and explain their relationship to each other. • Understand the basic principles of seed technology, such as the structure of seeds, the germination process, and the factors that affect seed quality. • Apply these principles to the production, processing, and storage of seeds, such as the selection of seed parents, the production of seedbeds, and the storage of seeds in a cool, dry environment. • Communicate effectively about seed technology through written reports, presentations, and other media.
			26	BOT611: Lab Activities on BOT609 & BOT610	After successful completion of this course, student should be able to • Identify a wide range of angiosperm taxa using morphological features such as leaf arrangement, flower structure, fruit type, and other diagnostic characteristics. • Classify plants into major taxonomic groups (e.g., families, genera, species) based on their morphological characteristics and evolutionary relationships. • Learn to use botanical nomenclature and terminology correctly and adhere to scientific standards of accuracy and clarity in their communication. • Develop critical thinking skills by evaluating conflicting taxonomic hypotheses, resolving taxonomic uncertainties, and synthesizing information from multiple sources to reach

					informed conclusions. • Apply their taxonomic knowledge and problem-solving skills to address real-world challenges in biodiversity conservation, plant ecology, agriculture, and other fields.
			27	BOT612: Research Project	After successful completion of this course, student should be able to • Frame research problem & do literature survey about the same • Do independent thinking • Learn basic techniques for carrying out research
			28	BOT613: Anatomy and Embryology	After successful completion of this course, student should be able to • Identify and classify various types of plant tissues (e.g., epidermal, ground, vascular) and understand their functions. • Understand the principles of plant embryogenesis, from the formation of the zygote to the development of seedlings. • Compare and contrast the embryonic development of different plant groups, including angiosperms and gymnosperms. • Analyze the factors influencing plant growth and development, including hormonal regulation and environmental cues. • Apply anatomical and embryological knowledge to solve practical problems in plant propagation, breeding, and horticulture.
			29	BOT614: Hydroponic Technology	After successful completion of this course, student should be able to • Understand the importance of water quality in hydroponics. • Identify the different types of grow lights and their applications. • Apply the principles of plant physiology to hydroponics. • Design and build a simple hydroponic system • Conduct a research project on a topic related to hydroponics.

		30	BOT615: Medicinal Plants and their Applications	After successful completion of this course, student should be able to • Identify medicinal plants by their common and scientific names. • Describe the chemical constituents of medicinal plants and their effects on humans. • Discuss the traditional and modern uses of medicinal plants. • Evaluate the safety and efficacy of medicinal plants. • Apply ethical principles to the study and use of medicinal plants.

Appendix II

Evaluation Pattern

SN	Type of Course	Continuous Assessment (CA)	End Examination (EE)
1	Theory (T) 4 Credit 100 Marks CA: 30% EE: 70%	Each student is required to attempt total 02 (Two) "Continuous Assessments (CAs)" for each course of each Semester, as per the following details: 1. CA01: 'Continuous Assessment 01 (CA01)' on Credit 01 to Credit 04 of each course, consists of • 2 (Two) 'Short Answer Questions (SAQs)',each carrying 05 Marks, on Credit 01 and Credit 02 **and** • 1 (One) 'Long Answer Question (LAQ)' of 10 Marks, on Credit 03 and Credit 04. LAQ may consist of sub-questions. **CA01**: On Credit 01 to Credit 04, of Marks = (5x2 + 10) = **20 Marks** 2. CA02: 'Continuous Assessment 02 (CA02)' on Credit 01 to Credit 04 of each course, consists of • A test containing total **10** (Ten) 'Objective Type Questions, ' 05 (Five) on Credit 01 and Credit 02,and 05 (Five) on Credit 03 and Credit 04. Each 'Objective Type Question' of 1 Mark. **CA02**: On Credit 01 to Credit 04, of Marks = **10 Marks** 3. Maximum number of attempts for **CA,** during each semester : Single attempt only 4. **Total Marks**: **30** Marks	1. Student is required to answer **05 'VSAQs' out of 06 'VSAQs'**, each carrying 03 Marks, on Credit 01 to 04, for total 15 Marks. One VSAQ will be on each Credit. 2. Student is required to answer **05 'SAQs' out of 06 'SAQs'**, each carrying 05 Marks, on Credit 01 to 04, for total 25 Marks. One SAQ will be on each Credit. 3. Student is required to answer **01 'LAQ' out of 2 LAQs,** of 10 Marks on Credit 01 and Credit 02, for total 10 Marks. LAQ may consist of sub-questions. 4. Student is required to answer **01 'LAQ' out of 2 LAQs,** of 10 Marks on Credit 03 and Credit 04, for total 10 Marks. LAQ may consist of sub-questions. 5. Student is required to answer **01 'LAQ' out of 2 LAQs,** of 10 Marks on Credit 01 to Credit 04, for total 10 Marks. LAQ may consist of sub-questions. 6. Number of attempts: Till Valid Registration Period (VRP) only 7. Marks: 70 Marks 8. Duration: 150 minutes

<table>
<tr><th>SN</th><th>Type of Course</th><th colspan="2">Continuous Assessment (CA)</th><th colspan="2">End Examination (EE)</th></tr>
<tr><td></td><td></td><td colspan="4"><table>
<tr><th>SN</th><th>Description</th><th>Evaluation of End Examination(EE)</th><th>Marks</th></tr>
<tr><td rowspan="3">1</td><td rowspan="3">Question Types</td><td>Very Short Answer Question (VSAQ) on each Credit</td><td>03 Marks</td></tr>
<tr><td>Short Answer Question (SAQ) on each Credit</td><td>05 Marks</td></tr>
<tr><td>On each Credit, either Single Long Answer Question (LAQ) or LAQ contains sub-questions (a), (b) and so on.</td><td>10 Marks</td></tr>
<tr><td>2</td><td>Grand Total Marks</td><td>Total five Questions in EE Question paper based on:
Credit 01 to 04 : 05 VSAQs out of 06 VSAQs (15 Marks)
Credit 01 to 04 : 05 SAQs out of 06 SAQs (25 Marks)
Credit 01 to 02 : 01 LAQ out of 02 LAQs (10 Marks)
Credit 03 to 04 : 01 LAQ out of 02 LAQs (10 Marks)
Credit 01 to 04 : 01 LAQ out of 02 LAQs (10 Marks)
LAQ may contains sub-questions</td><td>70 Marks</td></tr>
</table></td></tr>
<tr><td>2</td><td>Theory (T)

2 Credit
50 Marks

CA: 30%
EE: 70%</td><td colspan="2">Each student is required to attempt total 01 (One) “Continuous Assessment (CA)” for each course of each Semester, as per the following details:
1. CA01: 1 (One) ‘Continuous Assessment 01 (CA01)’ on Credit 01 and Credit 02 of each course, consists of
• 1 (One) ‘Short Answer Question (SAQ)’ of 5 Marks
and
• 1 (One) ‘Long Answer Question (LAQ)’of 10 Marks, LAQ may consist of sub-questions.
CA01: On Credit 01 and Credit 02, of Marks = (5 + 10) = 15 Marks
2. Maximum number of attempts for CA, during each semester: Single attempt only
3. Total Marks: 15 Marks</td><td colspan="2">1. Student is required to answer 05 ‘VSAQs’ out of 06 ‘VSAQs’, each carrying 03 Marks, on Credit 01 to 02, for total 15 Marks. One VSAQ will be on each Credit.
2. Student is required to answer 02 ‘SAQs’ out of 03 ‘SAQs’, each carrying 05 Marks, on Credit 01 to 02, for total 10 Marks. One SAQ will be on each Credit.
3. Student is required to answer 01 ‘LAQ’ out of 2 LAQs, of 10 Marks on Credit 01 and Credit 02, for total 10 Marks. LAQ may consist of sub-questions.
4. Number of attempts: Till Valid Registration Period (VRP) only
5. Marks: 35 Marks
6. Duration: 75 minutes</td></tr>
</table>

<table>
<tr><th>SN</th><th>Type of Course</th><th colspan="2">Continuous Assessment (CA)</th><th>End Examination (EE)</th></tr>
<tr><td></td><td></td><td colspan="2">
<table>
<tr><th>SN</th><th>Description</th><th>Evaluation of End Examination (EE)</th><th>Marks</th></tr>
<tr><td rowspan="3">1</td><td rowspan="3">Question Types</td><td>Very Short Answer Question (VSAQ) on each Credit</td><td>03 Marks</td></tr>
<tr><td>Short Answer Question (SAQ) on each Credit</td><td>05 Marks</td></tr>
<tr><td>On each Credit, either Single Long Answer Question (LAQ) or LAQ contains sub-questions (a), (b) and so on.</td><td>10 Marks</td></tr>
<tr><td>2</td><td>Grand Total Marks</td><td>Total three Questions in EE Question paper based on:
Credit 01 to 02 : 05 VSAQs out of 06 VSAQs (15 Marks)
Credit 01 to 02 : 02 SAQs out of 03 SAQs (10 Marks)
Credit 01 to 02 : 01 LAQ out of 02 LAQs (10 Marks)
LAQ may contains sub-questions</td><td>35 Marks</td></tr>
</table>
</td><td></td></tr>
<tr><td>3</td><td>Practical (P)

4 Credit
100 Marks

CA: 50%
EE: 50%</td><td colspan="2">
1. Student is required to submit “Activity Report in Work-Book Format” for each Credit in the prescribed format.
2. Maximum number of attempts for each CA, during each semester : Single attempt only
3. Marks: 50 Marks
4. Grading criteria:
<table>
<tr><td>Lab Punctuality, Preparedness & Ethics</td><td>Irregular in lab. Copies the experiment from others
(0 Points)</td><td>Consistently regular but unable to explain the concepts
(06 Points)</td><td>Punctuality in lab. Follows the procedure and responds to questions asked
(10 Points)</td></tr>
<tr><td>Activity Report and Performance

(Experiment No, Date, Objectives, Apparatus with specification, Observations, Graphs, software used if any)</td><td>Poor Documentation and copied the experiment from others. Couldn't perform the Activity /poor observation made
(04 Points)</td><td>Average Documentation: Report is in format but some of the formatting guidelines are missed. Performed the Activity but observations made with some mistakes
(12 Points)</td><td>Good Documentation: Lab activity writing is in proper format with all references, Grammar. Performed the Activity on time observations made with no mistakes
(20 Points)</td></tr>
<tr><td>Results and Conclusion</td><td>Unable to achieve the desired results but makes attempts to relate data to theory. Poor concluding statements
(08 Points)</td><td>Average graphical and tabulated representation with misinterpret physical significance of theory. Achieve the desired results and but insufficient conclusion statement.
(14 Points)</td><td>Analyses and interpret observed data carefully with good graphical and tabulated representation using appropriate theory/evidence. Achieve the results and reach to appropriate Conclusion
(20 Points)</td></tr>
</table>
</td><td>
External and internal examiners shall assess each student based on:
1. Workbook/Activity Report submission by the student (Only by External Examiner) [05 Marks]
2. Practical Activity performed by the student [12 Marks]
3. Result and Conclusion of the Practical Activity [13 Marks]
4. Viva-Voce on Practical Activities [20 Marks]
5. Number of attempts: Till Valid Registration Period (VRP) only
6. Marks: 50 Marks
7. Duration: 180 minutes
</td></tr>
</table>

<table>
<tr><th>SN</th><th>Type of Course</th><th>Continuous Assessment (CA)</th><th>End Examination (EE)</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><td rowspan="2">SN</td><td colspan="3">Evaluation of Practical End Examination</td></tr>
<tr><td>Description</td><td>Internal Examiner</td><td>External Examiner</td></tr>
<tr><td>1</td><td>Workbook/Activity Report</td><td>-</td><td>05 Marks</td></tr>
<tr><td>2</td><td>Actual Conduct of one randomly selected Practical Activity</td><td>02 Marks</td><td>10 Marks</td></tr>
<tr><td>3</td><td>Diagram, Synoptic Answers, Graph/Observation and Conclusion</td><td>03 Marks</td><td>10 Marks</td></tr>
<tr><td>4</td><td>Viva-Voce/Oral</td><td>05 Marks</td><td>15 Marks</td></tr>
<tr><td>5</td><td>Total</td><td>10 Marks</td><td>40 Marks</td></tr>
</table>
</td><td></td></tr>
<tr><td>4</td><td>Field Project (TW)

4 Credit
100 Marks

CA: 50%
EE: 50%</td><td>Students need to complete one month Field Project (Total Study hours 120 hrs including Activity Report). After completion of the field project, learners shall submit a report to the LSC - Programme Coordinator (PC) and Mentor/Guide.
1. Maximum number of attempts for each CA, during each semester: Single attempt only
2. Duration: 1 Month or 4 Weeks duration –i) After end examination of semester 02 and before beginning of semester 03 or
ii) Any one month during semester 02 duration
3. Marks: 50 Marks
4. Grading Criteria for Evaluation of FP (only by Mentor/Guide):
<table>
<tr><td>SN</td><td>Description</td><td>Marks</td></tr>
<tr><td>1</td><td>Key Definitions of Problem area and analysis of preliminary data</td><td>15</td></tr>
<tr><td>2</td><td>Work related to formats, Correspondence, Interactions and liaising etc</td><td>05</td></tr>
<tr><td>3</td><td>Field work and data collection</td><td>15</td></tr>
<tr><td>4</td><td>Analysis and Report</td><td>10</td></tr>
<tr><td>5</td><td>Feedback to community</td><td>05</td></tr>
<tr><td colspan="2">Total</td><td>50</td></tr>
</table>
</td><td>1. External and Internal examiners (Internal examiner - Programme Coordinator (PC) / Supervisor of LSC) shall assess each student based on:
a. Activity Report submission by the student (Only by External Examiner) [10 Marks]
b. Viva-Voce on Activity Report [40 Marks]
2. Number of attempts: Till Valid Registration Period (VRP) only
3. Marks: 50 Marks
4. Duration: 180 minutes</td></tr>
</table>

SN	Type of Course	Continuous Assessment (CA)	End Examination (EE)

SN	Evaluation of Field Project End Examination		
	Description	Internal Examiner (Programme Coordinator **(PC)/ Supervisor of LSC)**	External Examiner
1	Workbook/Report submission	-	10 Marks
2	Viva-Voce /Oral	10 Marks	30 Marks
3	Total	10 Marks	40 Marks

<table>
<tr><th>SN</th><th>Type of Course</th><th>Continuous Assessment (CA)</th><th>End Examination (EE)</th></tr>
<tr><td>5</td><td>OJT or Internship (TW)

4 Credit
100 Marks

CA: 50%
EE: 50%</td><td>
1. Students need to complete one month On Job Training (OJT) or Internship (Total Study hours 120 hrs including Internship Report) in any Industry/Organization/Institute/ R&D Division /Any Micro/Small/Medium/enterprise/Govt/NGO/ PSU/Online Internship related to major course.
2. Maximum number of attempts for each CA, during each semester: Single attempt only
3. Marks: 50 Marks
4. Duration: 1 Month or 4 Weeks –
i) After end examination of semester 02 and before beginning of semester 03.
or
ii) Any one month during semester 02 duration
5. Grading Criteria for Evaluation of OJT (or Intern) only by Mentor where the Internship is proposed to be imparted:
<table>
<tr><th>SN</th><th>Parameters</th><th>Marks Out of</th></tr>
<tr><td>1</td><td>Behaviors, Shows interest in assigned work, Willingness to learn</td><td>10</td></tr>
<tr><td>2</td><td>Accepts responsibility, Cooperates with co-workers and supervisors, Demonstrates organizational skills</td><td>10</td></tr>
<tr><td>3</td><td>Uses time, knowledge and expertise effectively, Analyzes problems effectively</td><td>10</td></tr>
<tr><td>4</td><td>Demonstrates creativity/ originality / any innovative contribution, Professional ethics and accountability</td><td>10</td></tr>
<tr><td>5</td><td>Writes effectively, Produces high quality work/Skill Proficiency</td><td>10</td></tr>
<tr><td colspan="2">Total</td><td>50</td></tr>
</table>
Document as Evidence: Activity report along with Certificate or Declaration, duly issued and signed by the concerned authority [To be assessed during EE] should be submitted during End Examination to the parent Learner support Centre (LSC).
</td><td>
At the end of second semester, Programme Coordinator (PC)/ Supervisor of LSC and 1 (one)External Examiner will complete ‘End Exam (EE)’ for all allotted students as follows:
1. Duration of EE: After Theory EE of second Semester
2. Programme Coordinator (PC)/ Supervisor of LSC and External Expert will have 20% and 80% weightage respectively in EE.
3. Number of attempts: Till Valid Registration Period (VRP) only
4. Marks for EE: 50 Marks
<table>
<tr><th>Parameter</th><th>PC /Supervisor of LSC</th><th>External Expert</th></tr>
<tr><td>Professional Attitude</td><td>-</td><td>05 Marks</td></tr>
<tr><td>Maintenance of Daily Diary</td><td>-</td><td>10 Marks</td></tr>
<tr><td>Internship Report</td><td>05 Marks</td><td>10 Marks</td></tr>
<tr><td>Viva/Oral</td><td>05 Marks</td><td>15 Marks</td></tr>
<tr><td>Total</td><td>10 Marks</td><td>40 Marks</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>SN</th><th>Type of Course</th><th>Continuous Assessment (CA)</th><th>End Examination (EE)</th></tr>
<tr><td>6</td><td>Project Work (PW)

RP-I
4 Credit
100 Marks

CA: 50%
EE: 50%</td><td>1. Student is required to submit “Activity Report” based on Grading Criteria of the course in the prescribed format.
2. Maximum number of attempts for each CA, during each semester: Single attempt only
3. Marks: 50Marks
4. Grading Criteria:
<table>
<tr><td>SN</td><td>Desc</td><td>Marks</td></tr>
<tr><td>1</td><td>Seminar*</td><td>25</td></tr>
<tr><td>2</td><td>Research Proposal</td><td>25</td></tr>
</table>
*To be conducted in Online/Offline mode at LSC.</td><td>1. External and internal examiners shall assess each student based on:
a. Project Report submission by the student (Only by External Examiner) [10 Marks]
b. Project Presentation by the student [20 Marks]
c. Viva-Voce on Project Report [20 Marks]
2. Number of attempts: Till Valid Registration Period (VRP) only
3. Marks: 50 Marks
4. Duration: 180 minutes</td></tr>
<tr><td></td><td></td><td colspan="2">
<table>
<tr><td rowspan="2">SN</td><td colspan="3">Evaluation of Project Work End Examination</td></tr>
<tr><td>Description</td><td>Internal Examiner</td><td>External Examiner</td></tr>
<tr><td>1</td><td>Project Report</td><td>-</td><td>10 Marks</td></tr>
<tr><td>2</td><td>Project Presentation</td><td>05 Marks</td><td>15 Marks</td></tr>
<tr><td>3</td><td>Viva-Voce /Oral</td><td>05 Marks</td><td>15 Marks</td></tr>
<tr><td>4</td><td>Total</td><td>10 Marks</td><td>40 Marks</td></tr>
</table>
</td></tr>
<tr><td>7</td><td>Project Work (PW)

RP-II

6 Credit
150 Marks

CA: 50%
EE: 50%</td><td>1. Student is required to submit “Activity Report” based on Grading Criteria of the course in the prescribed format.
2. Maximum number of attempts for each CA, during each semester: Single attempt only
3. Marks: 75 Marks
4. Grading Criteria:
<table>
<tr><td>SN</td><td>Desc</td><td>Marks</td></tr>
<tr><td>1</td><td>Seminar*</td><td>30</td></tr>
<tr><td>2</td><td>Research Paper Presentation**</td><td>30</td></tr>
<tr><td>3</td><td>Project Report</td><td>15</td></tr>
</table>
*To be conducted in Online/Off line mode at LSC.
** Journals/Conferences/ at LSC, in Online/Offline mode [This activity shall be organized by respective LSC in Online/Offline mode in case student didn’t get an opportunity for presentation at Journals/Conferences]</td><td>1. External and internal examiners shall assess each student based on:
a. Project Report submission by the student (Only by External Examiner) [20 Marks]
b. Project Presentation by the student [25 Marks]
c. Viva-Voce on Project Report [30 Marks]
2. Number of attempts: Till Valid Registration Period (VRP) only
3. Marks: 75 Marks
4. Duration: 180 minutes</td></tr>
</table>

<table>
<tr><th>SN</th><th>Type of Course</th><th colspan="2">Continuous Assessment (CA)</th><th colspan="2">End Examination (EE)</th></tr>
<tr><td></td><td></td><td colspan="2"><table>
<tr><td rowspan="2">SN</td><td colspan="3">Evaluation of Project Work End Examination</td></tr>
<tr><td>Description</td><td>Internal Examiner</td><td>External Examiner</td></tr>
<tr><td>1</td><td>Project Report</td><td>-</td><td>20 Marks</td></tr>
<tr><td>2</td><td>Project Presentation</td><td>05 Marks</td><td>20 Marks</td></tr>
<tr><td>3</td><td>Viva-Voce /Oral</td><td>10 Marks</td><td>20 Marks</td></tr>
<tr><td></td><td>Total</td><td>15 Marks</td><td>60 Marks</td></tr>
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