

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI (MS)

Faculty of Science and Technology

Scheme of Teaching, Learning, Examination & Evaluation leading to Two Years PG Degree Master of Herbal Science following Three Years UG Programme w.e.f. 2023-24

(Two Years- Four Semesters Master's Degree Programme- NEPv23 with Exit and Entry Option

M. Sc. Herbal Science (Semester- I)[Level 5.5]

S. N.	Subject	Type of Course	Subject Code	Teaching & Learning Scheme							Duration Of Exam Hours	Examination & Evaluation Scheme							
				Teaching Period Per Week				Credits				Maximum Marks				Minimum Passing			
				L	T	P	Total	L/T	Practical	Total		Theory		Practical		Total Marks	Marks Internal	Marks External	Grade
0	*Pre-Requisite Course(s) if applicable/MOOC/Internship/Field Work cumulatively If students wish to opt Minor Course of UG as Major for PG, balance 12 Credits Course will have to be completed (As and when applicable)	Th-Prq		0	0	0	0	Additional Credits to be earned = (1) minus(2) (1). Credits from Major DSC Courses in UG (minus) (2).The Credits already earned from the Course as Minor at UG, now to be opted as Major at PG			2	20	30			50	08	12	P
1	Research Methodology and IPR	Th-Major		4			4	4		4	3	40	60			100	16	24	P
2	DSC-I.1 Introduction to Herbal Science	Th-Major		4			4	4		4	3	40	60			100	16	24	P
3	DSC-II.1 Taxonomy of Medicinal Plants	Th-Major		4			4	4		4	3	40	60			100	16	24	P
	DSC-III.1 Medicinal Plant Cultivation	Th-Major		3			3	3		3	3	40	60			100	16	24	P
4	DSE-I 1. Phytochemistry and Pharmacognosy- I 2. Herbal Drug Technology- I	Th-Major Elective		3			3	3		3	3	40	60			100	16	24	P
5	DSC-I.1 (Lab-1)	Pr-Major				2	2			1	1	3			25	25	50	25	P
6	DSC- II.1 (Lab-2)	Pr-Major				2	2			1	1	3			25	25	50	25	P
7	DSC-III.1 (Lab- 3)	Pr-Major				2	2			1	1	3			25	25	50	25	P
8	DSE-I (Lab-4)	Pr-				2	2			1	1	3			25	25	50	25	P

	Basket of two electives	Major Elective																	
9	# On Job Training, Internship/ Apprenticeship; Field projects Related to Major @ during vacations cumulatively	Related to DSC		120 Hours cumulatively during vacations of Semester I and Semester II						4*									P*
10	Co-curricular Courses: Health and wellness, Yoga Education, Sports and Fitness, Cultural Activities, NSS/NCC, Fine/Applied/Visual/Performing Arts During Semester I, II, III and IV	Generic Optional		90 Hours Cumulatively From Sem I to Sem IV															
	TOTAL								22									700 + 50	

L: Lecture, T: Tutorial, P: Practical/Practicum

Pre-requisite Course mandatory if applicable: **Prq**, Theory :**Th**, Practical/Practicum: **Pr**, Faculty Specific Core: **FSC**, Department Specific Core: **DSC**, Department Specific Elective: **DSE**, Laboratory: **Lab**, **OJT**: On Job Training: Internship/ Apprenticeship; Field projects: **FP**; **RM**: Research Methodology; Research Project: **RP**, **Co-curricular Courses: CC**

Note : # On Job Training, Internship/ Apprenticeship; Field projects **Related to Major (During vacations of Semester I and Semester II) for duration of 120 hours mandatory to all the students, to be completed during vacations of Semester I and/or II. This will carry 4 Credits for learning of 120 hours. Its credits and grades will be reflected in the Semester II credit grade report.**

Note: **Co-curricular Courses:** In addition to the above, CC also include but not limited to Academic activities like paper presentations in conferences, Aavishkar, start-ups, Hackathon, Quiz competitions, Articles published, Participation in Summer school/ Winter School / Shortterm course, Scientific Surveys, Societal Surveys, Field Visits, Study tours, Industrial Visits, online/offline Courses on Yoga (Yoga for IQ development, Yoga for Ego development, Yoga for Anger Management, Yoga for Eyesight Improvement, Yoga for Physical Stamina, Yoga for Stress Management, etc.). These can be completed cumulatively during **Semesters I, II, III and IV. Its credits and grades will be reflected in semester IV credit grade report.**

Corrigendum: For Examination and Evaluation of Theory Courses, 40 % of Marks shall be assigned to the Internal Examination and 60% of Marks shall be assigned to the end-semester external university examination.

Now, MCQ, if any, will be part of the Internal Assessment only (40%).

	and wellness, Yoga Education, Sports and Fitness, Cultural Activities, NSS/NCC, Fine/Applied/Visual/Performing Arts During Semester I, II, III and IV	Optional		Cumulatively From Sem I to Sem IV													
				Exit Option with a PG Diploma with 4 Credits On-the-job training/internship in the respective Major subject <ul style="list-style-type: none"> • Student has to earn Total minimum 4 Credits cumulatively during Vacations of Semester I and Semester II from internship in order to exit after First Year with PG Diploma (42-44 Credits) after Three three-year UG Degree 													
	TOTAL									18+4*						600	

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Note :# On Job Training, Internship/ Apprenticeship; Field projects **Related to Major(During vacations of Semester I and Semester II) for duration of 120 hours mandatory to all the students, to be completed during vacations of Semester I and/or II. This will carry 4 Credits for learning of 120 hours. Its credits and grades will be reflected in Semester II credit grade report.**

Note: **Co-curricular Courses:** In addition to the above, CC also include but not limited to Academic activities like paper presentations in conferences, Aavishkar, start-ups, Hackathon, Quiz competitions, Article published, Participation in Summer school/ Winter School / Short term course, Scientific Surveys, Societal Surveys, Field Visits, Study tours, Industrial Visits, online/offline Courses on Yoga (Yoga for IQ development, Yoga for Ego development, Yoga for Anger Management, Yoga for Eyesight Improvement, Yoga for Physical Stamina, Yoga for Stress Management, etc.). These can be completed cumulatively during **Semester I, II, III and IV. Its credits and grades will be reflected in semester IV credit grade report.**

	During Semester I, II, III and IV																	
	TOTAL									22							650	

L: Lecture, T: Tutorial, P: Practical/Practicum

Pre-requisite Course mandatory if applicable: **Prq**, Theory :**Th**, Practical/Practicum: **Pr**, Faculty Specific Core: **FSC**, Department Specific Core: **DSC**, Department Specific Elective: **DSE**, Laboratory: **Lab**, **OJT**: On Job Training: Internship/ Apprenticeship; Field projects: **FP**; **RM**: Research Methodology; Research Project: **RP**, **Co-curricular Courses: CC**

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	TOTAL									24						750			
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Pre-requisite Course mandatory if applicable: **Prq**, Theory :**Th**, Practical/Practicum: **Pr**, Faculty Specific Core: **FSC**, Department Specific Core: **DSC**, Department Specific Elective: **DSE**, Laboratory: **Lab**, **OJT**: On Job Training: Internship/ Apprenticeship; Field projects: **FP**; **RM**: Research Methodology; Research Project: **RP**, **Co-curricular Courses: CC**

Note: **Co-curricular Courses:** In addition to the above, CC also include but not limited to Academic activities like paper presentations in conferences, Aavishkar, start-ups, Hackathon, Quiz competitions, Article published, Participation in Summer school/ Winter School / Short term course, Scientific Surveys, Societal Surveys, Field Visits, Study tours, Industrial Visits, online/offline Courses on Yoga (Yoga for IQ development, Yoga for Ego development, Yoga for Anger Management, Yoga for Eyesight Improvement, Yoga for Physical Stamina, Yoga for Stress Management, etc.). These can be completed cumulatively during **Semester I, II, III and IV. Its credits and grades will be reflected in semester IV credit grade report.**

Table: Comprehensive Credits distribution amongst the type of Courses over Two Years (Four Semesters) PG Programme and Minimum Credits to be earned for PG Degree [Master in Faculty Science and Technology; Major – Herbal Science]

Sr. No.	Type of Course	Total Credits Offered	Minimum Credits Required
1	MAJOR		
	i. DSC	56	56
	ii. DSE	16	16
	TOTAL	72	72
2	Research Methodology and IPR (FSC/DSC: Major)	04	04
2	On Job Training, Internship/ Apprenticeship; Field projects Related to Major	04	02 (Minimum 60 Hours OJT/FP is mandatory)
3	Research Project	10	10
	OPTIONAL		
4	Co-Curricular Courses (offline and/or online as applicable): Co-curricular Courses: Health and wellness, Yoga Education, Sports and Fitness, Cultural Activities, NSS/NCC, Fine/Applied/Visual/Performing Arts, CC also include but not limited to Academic activities like paper presentations in conferences, Aavishkar, start-ups, Hackathon, Quiz competitions, Articlepublished, Participation in Summer school/ Winter School / Shortterm course, Scientific Surveys, Societal Surveys, Field Visits, Study tours, Industrial Visits, online/offline Courses on Yoga (Yoga for IQ development, Yoga for Ego development, Yoga for Anger Management, Yoga for Eyesight Improvement, Yoga for Physical Stamina, Yoga for Stress Management, etc.).		00
	TOTAL		
	TOTAL	93	88

Table A: Comprehensive Credit Distribution for CC

S. N.	Activities (offline/online as applicable)	Credits at Levels						Letter Grade
		College	University	State	Zone if exist	National	International if exist	
1	Health and wellness, Yoga* Competitions *If a Course (online/offline) on Yoga is completed for 60 Hours, 2 credits will be awarded to the student (1 Credit = 30 Hours)	1	2	3	4	5	6	P (Pass)
2	Unnat Bharat Abhiyan[UBA]	1	2	3	4	5	6	P (Pass)
3	Sports and fitness activities (see separate Table B)	1	1 / 2	2 / 3	3 / 4	4 / 5	5 / 6	P (Pass)
4	Cultural activities, Fine/Applied/Visual/Performing Arts	1	2	3	4	5	6	P (Pass)
5	N.S.S. activities Camps	1	2	3	4	5	6	P (Pass)
6	Academic activities like Research Paper/Article/Poster presentations, Aavishkar, start-up, Hackathon, Quiz competitions, other curricular, co-curricular activities, student exchange program etc.	1	2	3	4	5	6	P (Pass)
	Research Paper/Article published	--	1	2	-	4	6	P (Pass)
7	Participation in Summer school/ Winter School / Short term course	2 Credits						P (Pass)
	(not less than 30 hours 1 or 2 weeks duration)	4 Credits						P (Pass)
	(not less than 60 hours 2 or 3 weeks duration)	2 Credits						P (Pass)
	Scientific Surveys, Societal Surveys	1 Credit						P (Pass)
8	Field Visits, Study tours, Industrial Visits,	1 Credit						P (Pass)
	NCC Activities	As given in Table C						

Table B: Credit Distribution for Sports and Fitness

Sr. No.	Particulars of Sports Status (Individual/ Team)	Credits	Letter Grade
1	College Level Participation	1	P (Pass)
2	University Level Participation	1	P (Pass)
3	University Level Rank 1, 2, 3	2	P (Pass)
4	State Level Participation	2	P (Pass)
5	State Level Rank 1, 2, 3	3	P (Pass)
6	Zonal Level Participation	3	P (Pass)
7	Zonal Level Rank 1, 2, 3	4	P (Pass)
8	National Level Participation	4	P (Pass)
9	National Level Rank 1, 2, 3	5	P (Pass)
10	International Level Participation	5	P (Pass)
11	International Level 1,2,3	6	P (Pass)

Table C: Credit Distribution for NCC activities

Sr. No.	Particulars of NCC Activities	Credits	Letter Grade
1	Participation in NCC activities	1	P (Pass)
2	'B' Certificate obtained	2	P (Pass)
3	'C' Certificate obtained	3	P (Pass)
4	State Level Participation	4	P (Pass)
5	National level Participation	5	P (Pass)
6	International Level Participation	6	P (Pass)

Sant Gadge Baba Amravati University, Amravati
Additional Instructions to the Paper Setters
M.Sc.Herbal Science as per Scheme under NEP 2020

The duration of University theory examination shall be of Three hours or appropriate hours as prescribed in the syllabus/curriculum of the pertinent course

The Maximum Marks for the Question Paper shall be 60

The Question Paper shall consist of Short Answer type (60%) and Long Answer type (40%) questions.

Examiner shall set Long answer type Questions and Short Answer type Questions as specified in the following Table or as applicable as per the curriculum.

There shall be internal choice for Short-Answer type Question as well as Long Answer type Question for every Unit.

The Question paper should be set based on the Course Outcomes (COs) defined in the curriculum and setter shall ensure that all the outcomes are addressed through appropriate questions. Read and study the Course Outcomes of a paper/subject/course very carefully.

The Questions should help to measure attainment of their corresponding Course Outcomes as prescribed in the syllabus/curriculum. All questions must be mapped to their related Course Outcomes.

Questions paper should try to address the different levels of learning (Bloom's Taxonomy)

i.e. Knowledge/Remembering, Understanding, Applying, Analyzing, Evaluating and Creating

All Units mentioned in the course should be covered with equal weightage. The question paper shall be set so as to cover the entire syllabus of the respective course (paper).

The degree of difficulty of the question paper should be such that a student, who has engaged himself in the continuous learning process should be able to clear with ease.

However, for scoring further his all-round knowledge and skills should be tested.

Model Solutions/answers to the short answer type questions and long answer type questions and scheme of marking for all question shall be submitted along with the question paper in a separate envelope.

Please ensure that the total marks for a course/subject/paper amounts to the prescribed total as notified in the scheme/curriculum. The total number of marks available for each question and each part of a question should be shown in the mark scheme and must tally with the marks shown on the question paper.

Avoid Questions like "Write short notes on ..."

The question paper should be precise and should be designed such that the questions:

- are unambiguous
- are asked for appropriate marks
- The questions should be serially numbered as 01, 02, 03, 04, 05, 06 etc.
- Sub-questions, if any, shall be numbered as A,B,C,D,... continuously for all Units
- It must be ensured that all questions are from within the prescribed syllabus

The paper setters should specify whether any Charts, Graphs, Tables, Codes, Books etc. are to be provided to the students. The use of which shall be permitted during the actual conduct of the examination.

For Short-Answer type Questions, ensure that:

- the item calls for a single, brief answer
- the item has been written as a direct question

- the desired response is related to the main point of the item
- clues to the answer have been avoided (e.g. “a” or “an”, length of the blank)
- the units and degree of precision is indicated for numerical answers.

For Long Answer type questions, make sure that:

questions starting questions with “who”, “what”, “when”, “where”, “name”, “list” are avoided as these terms limit the response.

questions must follow Bloom’s taxonomy with inclusion of following levels:

Table 1: Sample Terms for inclusion in Questions

Outcome	Sample Terms
Comparing	Compare,classify,describe,distinguishbetween,explain,outline,summarize, etc.
Interpreting	Convert,draw,estimate,illustrate,interpret,restate,summarize,translate, etc.
Inferring	Derive, draw, estimate, extend, extrapolate, predict, propose, relate, etc.
Applying	Arrange,compute,describe,demonstrate,illustrate,rearrange,relate, summarize, etc.
Analyzing	Breakdown,describe,diagram,differentiate,divide,list,outline,separate, etc.
Creating	Compose, design, devise, draw, formulate, makeup, present, propose, etc.
Synthesizing	Arrange, combine, construct, design, rearrange, regroup, relate, write, etc.
Generalizing	Construct, develop, explain, formulate, generate, make, propose, state, etc.
Evaluating	Appraise, criticize, defend, describe, evaluate, explain, judge, write, etc.

Table 2. Distribution of Marks amongst Question paper

Total marks of Theory Paper	Marks for Long Short Answer	Distribution of Unit wise Long/Short Answer type Questions
60	60	Long Answer: Two Questions 5 Marks (Two Questions) or 10 Marks (One Question) Short Answer: Four Questions 3 + 3 + 4 Marks

Note: For a unit, an identical pattern of long and short answer shall be adhered for internal choice, that is 'either-or' questions shall be in same pattern.

Table 3: Model Question Paper Pattern

Sr. No of Questions	Questions	Marks allotted to each Question
	M.Sc. I (Botany) Semester-I Examination NEP - 2020 Paper Title As per Curriculum Time: Three Hours Total marks: 60 N.B.: (1) All questions are compulsory Draw well labelled diagrams whenever necessary. Students may use various colors to signify answers.	
Q. No.	Explain in Brief (Short Type)	
A.		3
B.		3
C.		4
	OR	
D.		3
E.		3
F.		4
Q. No.	Explain in detail (Long type question)	
G.		10
	OR	
H.		10
Q. No.	Explain in detail (Long type question)	
I.		5
J.		5
	OR	
K.		5
L.		5

Note:

Paper Setter Shall set 4 Short Type and Two Long Type (either 10 Marks for One Question or 5 Marks each for Two Questions)

The Units from the Curriculum for Short and Long Type of Questions shall not be same for all the sets. Paper Setter shall decide it variably from the Units under the curriculum.

Avoid / Minimize the questions-based First level of learning as per Blooms Taxonomy like – Define, State, Quote, List the steps, Identify, Who Discovered, Name the parts of, Recite the rules for, etc.

Strictly Avoid –

Once the Question Type is decided and prefixed as Explain / Describe / Distinguish / in details then while setting sub questions under the same should not repeat the usage of the same For Ex.

Q1: Describe in Details:

Sub question 1A: Describe functional aspects of F1 Particles Sub question 1B: Explain Biosynthetic pathway of Pyruvic Acid

Sub question 1B: Distinguish between Aerobic and Anaerobic Respiration

Instead, it should be:

Q1: Describe in Details:

Sub question 1A: Functional aspects of F1 Particles Sub question 1B: Biosynthetic pathway of Pyruvic Acid

Sub question 1B: Features of Aerobic and Anaerobic Respiration

Consistency shall be maintained in sub-questions as A, B, C, D, Z

On exhaustion of the alphabets use AA, AB, AC, AD AZ in continuation for the further questions.