

REGULATIONS, COURSE SCHEME & SYLLABUS

FOR

**FIVE-YEAR INTEGRATED MASTERS PROGRAMME (FYIMP) IN BOTANY
UNDER NEP-2020**

**IMPLEMENTED FROM
ACADEMIC SESSION 2023 & ONWARDS**



**DEPARTMENT OF BOTANY
NORTH CAMPUS, UNIVERSITY OF KASHMIR
DELINA, BARAMULLA, J&K, INDIA**

Regulations, Course Scheme & Syllabus for Five-Year Integrated Masters Programme (FYIMP) in Botany offered at North Campus, University of Kashmir

1. COURSE NAME: Five-Year Integrated Masters Programme (FYIMP) in Botany

2. INTAKE CAPACITY: 30

3. ELIGIBILITY FOR ADMISSION:

- i. Candidate must have passed 10+2 examination from the Jammu & Kashmir Board of School Education or from any other recognized board/school education or from any other recognized board/institution whose examinations have been recognized as equivalent thereto.
- ii. The candidate applying for the Five-Year Integrated Masters in Botany must have passed the 10+2 examination with Botany as one of the subjects.
- iii. Candidate must have obtained the required percentage of marks in the Board of School Examination or equivalent examination as provided for open and reserved category candidates by the University from time to time.

4. FEE STRUCTURE:

The fee structure for the programme is Rs. 10,000/ (Ten Thousand Only) per year. However, for the conduct of compulsory botanical tours (local & national) etc. a student shall have to deposit an additional botanical tour fee over and above the prescribed admission fee. The additional tour fee may be prescribed by the Department of Botany, North Campus and recommended by the Head Department of Botany, main campus followed by authorization by the competent Authority University of Kashmir. Botanical/educational tour is mandatory to the students of Botany to expose them to various national institutes/ places of academic interest etc. as is provided under University Regulations/ calendar.

5. COURSE STRUCUTRE:

A course may comprise lectures/tutorials/laboratory work/field-work/outreach activities/ecological tour/ project work/vocational training/viva-voce/ seminars/ presentations/self-study etc. or a combination of these.

CORE/ELECTIVE COURSE

There shall be a total of **31** major courses of 4 credits (Theory+Practical /Tutorial/ Internship) in first nine semesters of the integrated programme and a project/ course work of 20 credits in the 10th semester. A student shall complete major courses equivalent to 144 credits in this programme including the project/ course work as explained in curriculum credit framework below.

6. MINOR & OTHER COURSES

In addition to the major course/s, there shall be:

- i. One minor course of 04 credits from semester I-VI(4 credits per semester, 24 credits in total).
- ii. One Ability Enhancement Course (AEC) and one Multidisciplinary Course (MDC) each of 03 credits, for each of the first three semesters (9+9 =18 credits in total).
- iii. One Skill Enhancement Course (SEC) of minimum 2 credits in each of the 1st three semesters i.e., semester I-III (minimum 06 credits in total).
- iv. Two VAC courses each of two credits i.e., 4 credits per semester (08 credits in total) for first two semesters.

7. SEMESTERWISE CREDIT DISTRIBUTION/CREDIT FRAMEWORK FOR DIFFERENT COURSES IN FIVE-YEAR INTEGRATED BOTANY

Each semester shall have a minimum of 20 credits. The programme shall have different types of courses in each of the semesters as indicated below:

SEMESTER	MAJOR						MINOR	AEC	MDC	VAC1	VAC2	SEC	G. TOTAL CREDITS
	CT1	CT2	CT3	CT4	CT5	TOTAL							
I	4	-	-	-	-	4	4	3	3	2	2	2	20
II	4	-	-	-	-	4	4	3	3	2	2	2	20
III	4	4	-	-	-	8	4	3	3	-	-	2	20
IV	4	4	4	4	-	16	4	-	-	-	-	-	20
V	4	4	4	2+2*	-	16	4	-	-	-	-	-	20
VI	4	4	4	4	-	16	4	-	-	-	-	-	20
VII	4	4	4	4	4	20	--	-	-	-	-	-	20
VIII	4	4	4	4	4	20	--	-	-	-	-	-	20
IX	4	4	4	4	4	20	--	-	-	-	-	-	20
X	Research Project/Course work					20	--	-	-	-	-	-	20
G. TOTAL CREDITS						144	24	9	9	4	4	6	200

* Internship/practical

Note:

- Minor Subjects chosen can be from the allied subject/s and can either be from a single subject or in the split format (Multiple Minor subjects in different semesters).
- Change in AEC and VAC is not allowed.
- A minimum of **200** credits are to be earned for completion of FYIMP in Botany from Major Course (**MJ**); Minor Course (**MN**); Skill Enhancement Course (**SE**); Ability Enhancement Course (**AE**); Multidisciplinary Course (**MD**); Value Added Course (**VA**).
- There should be a provision of internship (02 credits) in one of the semesters preferably in V or VI semester, subject to feasibility of conducting such internship outside the department, otherwise not mandatory.
- Provided that the credits prescribed are the minimum requirement for the award of the degree and the student can acquire additional credits, wherever possible.**

Semester-wise breakup of the course/credits is given below:

- Only one major course of 4 credits for semester I-II (8 credits in total).
- Two major courses of 4 credit each for semester III (08 credits in total).
- For semesters IV-VI there shall be four major courses of 4 credits each (16 credits/semester in total).
- In semester V of the programme, students have to earn 2 credits through internship/field work etc.
- For semester VII-IX, there shall be five major courses of 4 credits each (20 credits per semester in total).
- For semester X, a student has to earn 20 credits (five courses of 4 credits each) through project or course work.

8. NOMENCLATURE AND COURSE CODES

A unique course code shall be used for each paper/course to maintain uniformity in Major, Minor, Skill Enhancement, Ability Enhancement, Multidisciplinary and Value added Courses. Each course code shall consist of twelve (12) characters like **IBOTMJMA0123**:

Where:

“I” stands for integrated.; “**BOT**” stands for programme code (Botany); “**MJ**” stands for major course; “**MA**” stands for course title (here Microbes and Algae in semester I); “**01**” stands for semester number (here, semester I); “**23**” stands for year of implementation (here, 2023).

9. SEMESTERWISE PROGRAMME STRUCTURE OF THE PROGRAMME WITH COURSE CODE, COURSE TITLE & CREDIT DISTRIBUTION

SEMESTER-1				
Course Type	Course Code	Course Title	Credit	
			Theory	Practical
MAJOR-1	IBOTMJMA0124	Microbes and Algae	3	1
MINOR	IXXXMNAD0124	Introduction to Systematics and Animal Diversity	3	1
Multidisciplinary	IXXXMDBT0023	Introduction to Biotechnology	3	0
Ability Enhancement	IXXXAEEL0023	English Language	3	0
Value Added	IXXXVAES0023	Environmental Science Education	2	0
Value Added	IXXXVAHW0023	Health and Wellness	2	0
Skill Enhancement	IXXXSEPM0124	Propagation of Medicinal and Aromatic Plants	0	2
Total			20	

SEMESTER-2				
Course Type	Course Code	Course Title	Credit	
			Theory	Practical
MAJOR-1	IBOTMJMP0224	Mycology and Plant Pathology	3	1
MINOR	IXXXMNFC0224	Fundamentals of Chemistry	3	1
Multidisciplinary	IXXXMDBC0023	Introduction to Biochemistry	3	0
Ability Enhancement	IXXXAECS0023	Communication Skills	3	0
Value Added	IXXXVADT0023	Digital and Technological Solutions	2	0
Value Added	IXXXVAUI0023	Understanding India	2	0
Skill Enhancement	IXXXSEFP0224	Techniques of Fruit Processing & Preservation	0	2
Total			20	

SEMESTER-3				
Course Type	Course Code	Course Title	Credit	
			Theory	Practical
MAJOR-1	IBOTMJAR0323	Archegoniate (Bryophyta, Pteridophyta & Gymnosperms)	3	1
MAJOR-2	IBOTMJPP0323	Plant Physiology	3	1
MINOR	IXXXMNAB0323	Animal Behaviour and Wild life	3	1
Multidisciplinary	IXXXMDBR0023	Bio-industries	3	0
	IXXXMDES0023	Environmental Issues and Sustainability		
Ability Enhancement	IXXXAEKL0023	Kashmiri Language	3	0
	IXXXAEAL0023	Arabic Language		
Skill Enhancement	IXXXSEST0323	Seed Technology	0	2
	IXXXSEMC0323	Mushroom Cultivation		
Total			20	

SEMESTER-4				
Course Type	Course Code	Course Title	Credit	
			Theory	Practical
MAJOR-1	IBOTMJPT0423	Plant Taxonomy	3	1
MAJOR-2	IBOTMJPM0423	Plant Morphology & Anatomy	3	1
MAJOR-3	IBOTMJPT0423	Principles and Techniques in Plant Sciences	3	1
MAJOR-4	IBOTMJCB0423	Cell Biology	3	1
MINOR	IXXXMNIM0423	Immunology	3	1
Total			20	

SEMESTER-5				
Course Type	Course Code	Course Title	Credit	
			Theory	Practical
MAJOR-1	IBOTMJPB0523	Plant Biochemistry	3	1
MAJOR-2	IBOTMJTC0523	Plant Tissue Culture	3	1
MAJOR-3	IBOTMJER0523	Embryology & Reproductive Biology	3	1
MAJOR-4	IBOTMJET0523	Ethnobotany	2	0
INTERNSHIP	IBOTMJIN0523	Internship/Field work/Practical	0	2
MINOR	IXXXMNEN0523	Enzymology	3	1
Total			20	

SEMESTER-6				
Course Type	Course Code	Course Title	Credit	
			Theory	Practical
MAJOR-1	IBOTMJMB0623	Plant Molecular Biology	3	1
MAJOR-2	IBOTMJPB0623	Plant Breeding	3	1
MAJOR-3	IBOTMJGC0623	Genetics & Cytogenetics	3	1
MAJOR-4	IBOTMJBC0623	Biodiversity and Conservation Biology	3	1
MINOR	IXXXMNFB0623	Fermentation Biotechnology	3	1
Total			20	

SEMESTER-7				
Course Type	Course Code	Course Title	Credit	
			Theory	Practical
MAJOR-1	IBOTMJPE0723	Plant Ecology	3	1
MAJOR-2	IBOTMJPB0723	Plant Biotechnology	3	1
MAJOR-3	IBOTMJBB0723	Biostatistics	3	1
MAJOR-4	IBOTMJPR0723	Plant Resource Utilization	3	1
MAJOR-4	IBOTMJPD0723	Plant Developmental Biology	3	1
Total			20	

SEMESTER-8				
Course Type	Course Code	Course Title	Credit	
			Theory	Practical
MAJOR-1	IBOTMJSS0823	Soil Science and Plant Nutrition	3	1
MAJOR-2	IBOTMJBC0823	Bioinformatics & Computational Biology	3	1
MAJOR-3	IBOTMJAE0823	Applied and Evolutionary Biology	3	1
MAJOR-4	IBOTMJPM0823	Plant Metabolism	3	1
MAJOR-4	IBOTMJRM0823	Research Methodology and Bioethics	3	1
Total			20	

SEMESTER-9				
Course Type	Course Code	Course Title	Credit	
			Theory	Practical
MAJOR-1	IBOTMJRA0923	Recent Advances in Plant Sciences	3	1
MAJOR-2	IBOTMJGE0923	Genetic Engineering	3	1
MAJOR-3	IBOTMJMP0923	Molecular Plant Physiology	3	1
MAJOR-4	IBOTMJMG0923	Plant Molecular Genetics	3	1
MAJOR-4	IBOTMJCS0923	Cell Signaling & Cell Division	3	1
Total			20	

SEMESTER-10			
Subject / Paper	Paper Code	Paper title/ Nomenclature	Credit
PROJECT	IBOTMJRP1023	Research Project/Course Work	20

10. CREDIT/MARKS FOR FIVE YEAR INTEGRATED COURSE IN BOTANY

Each credit is equal to 25 marks, thus a four-credit paper carries 100 marks; three credit papers carry 75 marks, two credit papers carry 50 marks and a one credit course carries 25 marks.

11. EXAMINATION

In each of the four-credit course, 0/1/2 credit is reserved for practical or tutorial and shall be decided / conducted by the concerned faculty. The 02 credit internship shall be earned from outside the department at a recognized institution or field work/practical based within the department. The internship marks shall be accordingly given by the concerned institution or the department respectively.

11.1. Internal Assessment:

Internal assessment based on MCQs/Assignments/PPTs for theory and practical shall carry 20% of the total marks (or as may be notified from time to time by the University) of all the papers/ courses and shall conducted by the teacher concerned.

Marks distribution for each course/component

Theory/Practical Courses with Credits	Marks distribution for each component		
	Internal	External	Total Marks
04 credit course	20	80	100
03 credit course	15	60	75
02 credit course	10	40	50
01 credit course	5	20	25

11.2. End Semester Examination (ESE):

- Theory:** A candidate shall have to appear for a written examination at the end of the semester which shall carry 80% of the total marks in each paper/ course. The question paper shall comprise of the descriptive and problem/application based questions as explained below in the section 13.
- Practical:** The ESE shall carry 80% of the total marks. The practical examination of the end semesters shall be conducted by the Internal or external examiners (approved by Head of the Institution). The Departmental committee may recommend an even or an odd semester for the external examination followed by approval from Head of the Institution.
- Project/ Research Work:**

The project work of 20 credits of 500 marks is compulsory for all the students and will be allotted in the 10th semester of the programme based on choice of the student and space availability in relation to his/her choice. The students for project work will be evenly distributed among faculty members of the Department. As reflected in the course curriculum, a candidate shall have to complete the project work in a stipulated time frame of one semester prior to the declaration of the results of 10th semester examination. The student is required to submit the dissertation in a hard bound form and present/defend the project work through an open viva-voce examination. Projects based on laboratory / field work will be evaluated by departmental committee and one external member. The marks breakup of the project (500 marks) shall be as:

The marks breakup of the external shall be as under:

- Dissertation..... 300*
- Presentation/ Viva Voce 200*

The departmental committee shall decide the distribution of above dissertation and Viva Voce marks for internal/external assessments.

12. CONDUCT OF EXAMINATION

The examination of the programme shall be conducted on the same patterns as is in vogue in the P.G Department of Botany. However, HOD/Coordinator of the department shall get the panel of paper setters/ evaluators/examiners duly endorsed by Head of the Institution (Director) approved from the Controller of Examination before the date sheet of end semester examination is issued.

13. QUESTION PAPER PATTERN:

a) For papers with Max. Marks = 80

Section A: Question carrying 02 marks each- total 8 questions	:	16 Marks
Section B: Question carrying 08 mark each- total 4 questions	:	32 Marks
Section C: Question carrying 16 marks each- total 4 questions (Only two questions to be attempted from this section)	:	32 Marks

b) For papers with Max. Marks = 60

Section A: Question carrying 01 marks each- total 6 questions	:	06 Marks
Section B: Question carrying 08 mark each- total 3 questions	:	24 Marks
Section C: Question carrying 15 marks each- total 3 questions (Only two questions to be attempted from this section)	:	30 Marks

c) For papers with Max. Marks = 40

Section A: Question carrying 02 marks each- total 4 questions	:	08 Marks
Section B: Question carrying 08marks each- total 2 questions	:	16 Marks
Section C: Question carrying 16 marks each- total 2 questions (Only one questions to be attempted from this section)	:	16 Marks

14. ATTENDANCE AWARD BREAKUP

The minimum percentage of attendance for determination of basic eligibility for appearing in the semester-end examination is 75% (or as may be notified from time to time by the University). Candidates whose attendance in a course (theory /practical) is less than 75% and the shortage in attendance is either below the condonable limits is not condoned by the competent authority shall not be allowed to sit in the semester-end examination. In case a student falls short of attendance in any courses/ papers and doesn't compensate the same will not be allowed to sit in the subsequent examinations for such course/ papers.

15. BOTANICAL/STUDY TOUR/TRIPS

To make on-field observations and impart on-site training in the subject Botany, the Department will ensure that a minimum of one field trip is conducted during each semester to acquaint the students with the flora of the region and also to collect, properly preserve, and prepare at least 10-20 plant specimens following standard herbarium techniques. The herbarium collection shall be mandatory in the semester where Plant Taxonomy course is taught. The students will, however, avoid collection of rare and threatened plant species. The herbarium will have to be submitted at the end of the semester to the department.

In addition to routine semester-wise local botanical trips, one mandatory study tour to the places of educational interest within the country once in every financial year for the students of FYIMP in Botany (preferably in semester IX or X) to expose the students to various national institutes/ places of academic interest etc. as is provided under University Regulations/ calendar vol. I Proviso 9.