



Hindi Vidya Prachar Samiti's

Ramniranjan Jhunjhunwala College

of Arts, Science & Commerce

(Empowered Autonomous College)

Affiliated to

UNIVERSITY OF MUMBAI

Syllabus for the F.Y.B.Sc. BOTANY (under NEP)

Vertical under NEP: Indian Knowledge System (IKS)
(Semester I only)

Course Code: RJKSBOT111

(REVISED 2026-2027 in alignment with the NEP2020 facilitating the inter-and multidisciplinary learning and multiple entry and exit of the students)

(CBCS 2023-2024)

Preamble

The National Education Policy 2020 aims at imparting skill-based learning and caters to the multiple entry and exit facility for the students thus empowering them to acquire knowledge at their pace. In the three-year UG program, the student has two exit options. Students also have the option for choosing the Honors program of four years study in a given discipline and later converting it to five year integrated PG degree program. As undergraduate student, he/she learns the core subject (Major), subject complementing the core subject (Minor), a course from other discipline (OEC or GEC) Vocational and Skill Enhancement course from the Major(VSEC). The remaining verticals under NEP 2020 are IKS (Indian Knowledge System), AEC (Ability Enhancement Course), VEC (Value Enhancement Course) and with progressive three years of UG, student also completes at different levels OJT (On Job Training), FP (Field Projects), CEP (Community Engagement Program) , RP (Research Project) which helps him/her in understanding their roots, application of the knowledge for the benefit of self and the society. Vertical CC (Co-curricular activities and activities related to yoga and human well-being) helps in preparing youth with good character and interpersonal relationships.

Why UG Botany at RJC

The Department of Botany at Ramniranjan Jhunjhunwala College was established in 1963 providing undergraduate and postgraduate education to students in the subject of Botany. As early as 1972 it was recognized as a

research center to guide students for their MSc by Research and Doctoral program. An era where only teaching was done on college campuses, Ramniranjan Jhunjunwala College created a niche for quality research. The Department is open for extended hours including holidays for the promotion of research. The Department has the credit of guiding more than 100 students for their Doctoral program and many of them have occupied prestigious positions in academic and research institutes. In the last two decades, the Department has been able to attract funding from various Government funding agencies like UGC, CSIR, DST, DBT, ICMR and Industries like Johnson & Jhonson Ltd., Hindustan Unilever and MARICO to name a few. In 2014, the Department was awarded funding under the DBT Star College Scheme to strengthen teaching and research at undergraduate level. In 2019, in view of the progress, the Department of Botany was conferred with DBT Star Status.

The UG program in Botany at Ramniranjan Jhunjunwala college provides a congenial atmosphere for the holistic development of the student with a full-fledged departmental library, connectivity, computers for students, research facilities, project-based learning and now with the implementation of NEP 2020, doors open for more skill-based learning for the students of the department. With the progressive outlook, students are encouraged to participate in festivals like 'AVISHKAR', seminars, and competitions organized by the other colleges. Project based learning, excursions, and field projects provide students with an opportunity for experiential learning. 'BOTANICA' is the departmental festival

for the students, by the students to make learning more enjoyable. To take the environmental education beyond the campus, the 'PAVO' nature club of the department provides a platform for all students to be conscious of the environment and take all necessary measures to protect and conserve nature. QR coding of trees of two Bombay Municipal Gardens to create awareness among public about the importance of plants.

The departmental facilities include multiple units of equipment for hands on training, facilities for plant tissue culture, museums for preserved plant material, Herbarium, Carpology Museum, Plant Drug Museum, Paleobotany Museum with the collection of rare fossils as cast, incrustation, impressions, rocks, minerals, peelings, slides etc.

All tools needed for horticultural practices and training, display of medicinal plants and plant biodiversity in limited space, QR coding of campus trees are some of the highlights of the department of Botany on R J Campus for the benefit of all.

PROGRAM OUTCOMES FOR UNDERGRADUATE DEGREE PROGRAM IN BOTANY

The Undergraduate program in Botany has been designed to empower students to obtain the domain knowledge of different branches of Botany, understand and apply it. It is prepared in alignment with the essence of NEP 2020 which is skill-based learning and learning by doing. The curriculum on one hand connects to the traditional Indian agriculture and on the other hand, it updates the knowledge of better understanding of the genetics and environment.

Some basic attributes which a student would acquire after completion of undergraduate program are listed below:

a. Application of Knowledge

Understanding the role of plants, their forms, their ecological importance, and technologically enhanced methods for their detailed study. Apply the subject knowledge to design experiments that leads to the applications of the concept.

b. Environment Awareness & Sustainability

Covid-19 pandemic has globally redirected the focus of the plants as a source of O₂. As a student of plant sciences, they will be able to address the problems and propose the solutions to them which human race is facing globally and thus fulfill UN-SDGs where in plants as primary producers and forming the base of the ecological pyramid have potential to achieve almost

all the SDGs.

c. Lifelong learning and motivating others to learn.

Under NEP 2020 with different verticals which are both intra and inter disciplinary, a student as a learner lends support to one another irrespective of discipline. This will help in self and institutional growth, contribute to national development, and provide equal opportunities.

**HINDI VIDYA PRACHAR SAMITI'S
RAMNIRANJAN JHUNJHUNWALA COLLEGE**

**DEPARTMENT OF BOTANY
PROGRAMME: BSC BOTANY (RJSUBOT)
PROGRAMME SPECIFIC OUTCOMES (PSOs) FOR B.Sc. BOTANY**

Sr. No.	A student completing B.Sc. Botany will be able to:
PSO1	Understand the basic concept of plant diversity from simple to complex forms, aquatic to land inhabitants through the representative forms of algae and fungi, association of these forms and its usefulness to the mankind.
PSO2	Understand the concepts of cell biology, genetics, anatomy, taxonomy, ecology, plant physiology and biochemistry.
PSO3	Understanding cultivation of Food and Industrial crops will make them aware of principles of agriculture in its raw form and processing and production of chocolates will enable the learner to understand the applications of Botany in confectionery industry. this would hone the entrepreneurial skills.
PSO4	Perform experiments in the field or laboratory making use of analytical, interpretation and communication skills.
PSO5	Appreciate nature, biodiversity co-existence of flora, fauna and human, help in conserve environment contribute towards achieving the sustainable development goals.

Semester I Major Botany
Title of the course: INDIAN KNOWLEDGE SYSTEM (IKS)

SEMESTER	:	I
TITLE OF THE SUBJECT/COURSE	:	INDIAN KNOWLEDGE SYSTEM
COURSE CODE	:	RJKSBOT112
CREDITS	:	02
DURATION	:	30 HOUR

LEARNING OBJECTIVES	
1	Learner will appreciate the indigenous knowledge
2	Learner will be able to understand the importance of conservation of biodiversity

COURSE OUTCOME NUMBER	On completing the course, the student will be able to:	PSO Addressed	BLOOMS LEVEL
CO1	Understand the importance of Indian Knowledge system.	1,4	BT Level I, II, IV Understand and draw connections
CO2	Understand the importance of Conservation of biodiversity by following the principles adopted in ancient India and continued till date in some regions	1,4	BT level I, II and III, IV Understand apply, relate

SEMESTER I (THEORY) Indian Knowledge System (IKS)		Lecture & Practical	Cr
PAPER I: INDIAN KNOWLEDGE SYSTEM	Paper Code: RJKSBOT111	30 HR	2
<i>UNIT I: GENERIC IKS</i>		15 HR	
Theory			
1	Importance of Indian Knowledge system.		
2	The IKS classification.		
3	Unique features of IKS.		
<i>UNIT II: SUBJECT SPECIFIC IKS</i>		15 HR	
1	Sacred Grooves		
2	Study of conservation of Biodiversity in Sacred Grooves of Maharashtra (Devrai)		

References:

1. Mahadevan B, Bhat V R and Nagendra Pavana R N (2022). Introduction to Indian Knowledge System. Concepts and Applications PHI Learning Private LTD.
2. Devrai by Umesh Mundalye www.sahyadribooks.com