DEPARTMENT OF BOTANY
J. N. COLLEGE, BOKO
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This report provides a detailed overview of the academic and co-curricular activities conducted by the Department of Botany for the session 2025-26. The primary objective of this report is to demonstrate how these activities were specifically designed to integrate the core 21st-century skills—**Critical Thinking, Creativity, Communication, Collaboration, Digital Literacy, and Problem-Solving**—into our curriculum, thereby enhancing the quality of higher education offered at our institution.

A: Critical Thinking

Sl. No.	Activity	Integration of Skill
1.	**Field Study to BSI, Sikkim**	Students analyzed plant adaptations to alpine environments and compared them with local flora, evaluating the reasons for biodiversity differences.
2.	**Field Study: Comparative Study of Natural and Man-Made Ecosystems**	Students critically evaluated the structural and functional differences between a natural forest and an agricultural or urban ecosystem, analyzing parameters like species diversity, energy flow, and nutrient cycling.
3.	**Workshop on Plant Identification**	Students applied analytical reasoning to distinguish between similar species using taxonomic keys, requiring careful observation and deduction.
4.	**Project Work**	Students interpreted experimental data, identified trends, and drew evidence-based conclusions regarding local environmental issues.
5.	**Student seminar**	Students synthesized information from multiple research papers to construct a coherent and logical argument on their chosen topic.

Category B: Creativity

Sl. No.	Activity	Integration of Skill
1.	**Wall Magazine Publication**	Students expressed scientific concepts through original articles, poetry, and botanical illustrations, designing the overall layout and theme.
2.	**Organization of Departmental Freshmen Social**	Students demonstrated creativity in decorating the venue, planning the cultural program, and designing games or ice-breaking activities to welcome new students.
3.	**Cultural Rally / March Past**	Students contributed creative ideas for rally themes, slogans, and banner designs to make the department's participation visually impactful and unique.
4.	**Project Work**	Students devised unique methodologies or approaches to study local problems, thinking beyond standard textbook experiments.

C: Communication

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Sl. No.	Activity	Integration of Skill
1.	**Student Seminar**	Students developed verbal communication and public speaking skills by presenting complex topics to an audience and handling Q&A sessions.
2.	**Student-Led Talk Program**	This dedicated activity provided a platform for students to speak on topics of their interest (scientific or social), significantly boosting their confidence, articulation, and ability to engage an audience.
3.	**Wall Magazine Publication**	Students practiced written communication by translating scientific information into accessible and engaging articles for a general audience.
4.	**Teach How to Write Project Report**	Students learned the formal structure of scientific writing, including how to present data, write abstracts, and cite sources correctly.
5.	**Field Study (BSI & Ecosystem Study)**	Students maintained scientific journals, documenting observations and findings in a clear, structured manner for both field studies.
6.	**Organization of Departmental Freshmen Social**	Students served as masters of ceremony (MC) and anchors, introducing events and interacting with attendees, thereby refining their public speaking.

D: Collaboration

Sl. No.	Activity	Integration of Skill
1.	**Field Study to BSI, Sikkim**	Students worked in teams for species documentation, equipment management, and navigating the logistics of the tour.
2.	**Field Study: Comparative Study of Natural and Man-Made Ecosystems**	Students formed teams to collect data from two different sites simultaneously, dividing responsibilities for species counting, soil sampling, and physico-chemical parameter analysis.
3.	**Project Work (Group)**	Students divided research tasks, shared resources, and collectively analyzed data, fostering teamwork and shared accountability.
4.	**Different College Activities**	Students collaborated with peers from other departments, promoting interdisciplinary teamwork and coordination.
5.	**Participation in Cultural Rally & March Past**	Students worked as a cohesive unit to maintain formation, synchronize their steps, and present a united departmental front, fostering a strong sense of team spirit.
6.	**Organization of Departmental Freshmen Social**	Students formed organizing committees, distributed responsibilities (decoration, food, games), and learned to coordinate with each other to execute a successful event.
7.	**Use of ICT Tools**	Students used collaborative platforms like Google Docs/Sheets to work on shared documents and data sheets for group assignments.

Category E: Digital Literacy

The ability to use technology for research, organization, evaluation, and creation of information.

Sl. No.	Activity	Integration of Skill
1.	**Use of Different ICT Tools**	Students were trained in using online databases (Google Scholar), plant identification apps (PlantNet), and accessing virtual herbariums.
2.	**Student Seminar**	Students utilized presentation software (PowerPoint, Canva) to create visually engaging digital presentations.
3.	**Perform MCQ via Google Form**	Students became proficient in navigating online assessment platforms, managing digital timers, and submitting responses electronically, thereby becoming comfortable with digital examination formats.
4.	**Office Automation Training/Collaboration**	Students gained hands-on experience with productivity software suites (like MS Office or LibreOffice), learning to create advanced spreadsheets for data logging, draft formal letters, and manage digital records efficiently.
5.	**Teach How to Write Project Report**	Students learned to use MS Excel for creating graphs and charts, and MS Word for formatting reports and using reference managers.
6.	**Field Study (BSI & Ecosystem Study)**	Students used GPS tagging on smartphones, digital photography, and data logging apps to create a geo-tagged and digitized record of plant specimens and ecosystem parameters.
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F: Problem-Solving

Sl. No.	Activity	Integration of Skill
1.	**Workshop on Plant Identification**	Students solved the "problem" of identifying an unknown plant specimen by systematically applying a dichotomous key.
2.	**Project Work**	Students identified real-world problems (e.g., decline in a local plant species, water quality issues) and designed a research protocol to investigate the causes.
3.	**Field Study: Comparative Study of Natural and Man-Made Ecosystems**	Students addressed the problem of quantifying ecosystem health. They had to figure out how to measure and compare abstract concepts like "stability" and "sustainability" using observable indicators.
4.	**Certificate Course in Mushroom Cultivation**	Students learned to troubleshoot practical problems in mushroom farming, such as contamination control,

		maintaining optimal humidity, and pest management, developing an entrepreneurial mindset.
5.	**Field Study to BSI, Sikkim**	Students adapted to unforeseen challenges in the field, such as weather changes or inaccessible terrain, by modifying their data collection strategies.
6.	**Office Automation Training/Collaboration**	Students learned to identify inefficiencies in manual record-keeping and applied automation tools to solve problems related to data redundancy, calculation errors, and slow report generation.
7.	**Use of ICT Tools**	Students learned to troubleshoot basic software issues and find solutions online for technical problems related to their presentations or reports.
8.	**Trained Students to Appear for Viva of Practical Examination**	Students were equipped with strategies to think on their feet, handle unexpected questions, and logically argue their point during one-on-one oral examinations.

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