Parvatibai Chowgule College of Arts and Science
Autonomous
Accredited by NAAC with Grade 'A' (CGPA Score 3.41 on a 4 Point Scale in 3rd cycle)
Best affiliated College-Goa University Silver Jubilee Year Award

# DEPARTMENT OF BIOTECHNOLOGY

## Teaching-Learning-Evaluation Pedagogies

***Teaching-Learning pedagogies***

Learners should be encouraged to focus on key areas of the course and spend time on learning the course fundamentals and their application. In teaching and learning pedagogy, there should be a shift from domain-based approach to the experiential-based approach. The teaching of undergraduate Biotechnology for each course, shall include lectures followed by laboratory hours for that particular course. Lectures can have good proportion of visuals learning component and ICT enabled delivery. In order to achieve its objective of focused process based learning and holistic development the department uses various teaching methodologies such as, lecture method, group discussion, problem solving, and other innovative methods such as flipped classrooms, case studies, laboratory work, project work, study/ field visits.

Lectures

Class room lectures and use of black/white boards are the usual ways of teaching. Also, use of various ICT tools involving power point presentations, videos, animations, models, improve the understanding and make the teaching sessions enjoyable.

Group Discussion, team work and problem solving

Discussions are critical components of learning, can be used as a platform for students to be creative and critical with old and new ideas, arriving at consensus on various scientific issues and discussions will lead to development of innovative problem-solving attitude that would contribute to success. In the process of team work, learners will acquire the skills of managing knowledge acquisition and other collaborative learners, thereby understanding how to incorporate and balance personalities.

Flipped classrooms

To make teaching-learning interactive and an enjoyable process, various cooperative learning strategies such as, One-stray method, think-pair-share, three step interviews, Padlet, PolleV, ED puzzle, etc are being used.

Case Studies

To express acquired knowledge, skills and attitudes, case-based learning can be used where the students are given case specific problems both for theory and practical courses to find creative solutions to complex problems in the concerned areas of life sciences.

Laboratory work

As biotechnology graduates in their career opt for research, industrial jobs, hence more emphasis is given in enhancing basic laboratory skills.

Project work

The students are encouraged to carry out mini projects of their choice to enable them have first-hand experience toward basic research.

Study/ field visits

The visits to research institutes such as, NCPOAR, NIO, ICAR, Goa University, BITS-Pilani campus in Goa and CFTRI, Mysuru. Also visits to various Biopharmaceutical Industries such as MabPharma Pvt. Ltd., Vergo Biotech Pvt. Ltd., Vergo Clinicals Pvt. Ltd., Cipla Pvt. Ltd., in Goa and Monsanto Research Pvt, Ltd., Natural Remedies Pvt. Ltd., etc and visits to anthropological and scientific museums provide opportunities to the students to explore further their theory and practical learning to understand the basic and applied aspects of different sub-areas of Biotechnology.

***Evaluation pedagogies***

The department carries out assessment of the learners of B.Sc. biotechnology students through

Formative assessments (Continuous Assessments such as, Objectives, Subjective test, MCQs, Oral presentations, E-assignments writing, Open or Closed book tests)

Summative assessments (Semester End Examination as 2-hour test).

Practical Continuous Assessments (understanding and performing laboratory experiments, case study discussion within a peer group) and any other pedagogic approaches as may be relevant keeping in view the learners' level, credit load and class size.

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