



Goswami Ganesh Dutta Sanatan Dharma College
Internship for Enhancing Employability
Department of Zoology and Botany

Hands-on Training in
Practical Implementations of Apiculture and Plant Tissue Culture

Summer, 2026

Important dates	--Classes begin: June 08, 2026 --Classes end : July 01, 2026 Holidays <ul style="list-style-type: none">• Martyrdom Day of Sri Guru Arjun Dev Ji: June18,2026 (Thursday)
Internship Supervisor	Dr. Indu Mehta Dr. Supriya Vaid
Contact	internship@ggdsd.ac.in
Training Timing	Monday to Saturday (9:00am to 3:00pm)
Credits	B.Sc.–4 Credits (120hrs/20days)
Core Training Areas	Apiculture and beekeeping management, honey and other bee products processing, pollination, ecology and entrepreneurship, Plant tissue culture techniques, micropropagation and commercial applications of plant tissue culture.

<p>Learning outcomes</p>	<p>By the end of this internship programme, participants will be able to:</p> <ol style="list-style-type: none"> 1. Gain working knowledge of honey bee species, colony structure, and hive management techniques. 2. Learn safe handling of beekeeping equipment, seasonal colony care, and disease management practices. 3. Acquire the skills in honey extraction, processing, storage, and utilization of other bee products. 4. Understand the importance of honey bees in crop pollination, biodiversity, and sustainable agriculture. 5. Develop the entrepreneurial, teamwork, and problem-solving skills related to commercial apiculture and understanding of the ecological and economic importance of beekeeping. 6. Maintain a completely sterile environment (using laminar airflows, autoclaves) to prevent contamination, which is critical for success in Plant Tissue Culture. 7. Prepare stock solutions and media for experimental purposes. 8. Develop proficiency in rapid, large-scale production of genetically identical (cloned) plants from small explants (buds, shoot tips). 9. Gain the ability to gradually acclimatize plantlets from in vitro environments to natural greenhouse or soil conditions. 10. Visit to PTC lab will give them the required exposure for their holistic understanding of the commercial applications and entrepreneurship avenues in this field of plant tissue culture.
<p>Employability Focus</p>	<p>This module is designed to improve readiness for internships, entrepreneurship avenues, teamwork, problem-solving skills and technical writing.</p>
<p>Evaluation</p>	<p>The evaluation of the internship shall be based on a combination of continuous assessment and final performance review.</p> <p>The evaluation process will include</p> <ol style="list-style-type: none"> I. Internship Report and Viva Voce (80% Weightage): Students must submit a detailed report documenting their activities, learning outcomes, challenges faced, and skills developed during the internship. Students are required to appear for a viva-voce before a 2-members internal evaluation committee (including a supervisor) to discuss their internship experience and learning outcomes. II. Supervisor’s Evaluation (20% Weightage): Feedback from the Internship Supervisor/Mentor at the host organization or within the department, assessing the student's engagement, skill development, professionalism, and attendance based on Activity Log Book.

<p>Internship Activity Logbook</p>	<p>Students will maintain an internship activity logbook for the “Enhancing Employability” internship throughout the training period. The logbook will be duly signed by the mentor and the internship supervisor upon completion of the training. The format of the Internship Activity Logbook is given below:</p> <table border="1" data-bbox="396 417 1414 632"> <thead> <tr> <th>Week</th> <th>Dates</th> <th>Activities Performed</th> <th>Skill Learned</th> <th>Remarks from Mentor</th> </tr> </thead> <tbody> <tr> <td>1</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Week	Dates	Activities Performed	Skill Learned	Remarks from Mentor	1					2					3					4																																													
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<p>Feedback Report</p>	<p>The mentor will prepare a Feedback/Evaluation Report for each student enrolled in the Internship for Enhancing Employability. The format for the Feedback/Evaluation Criteria is provided below:</p> <table border="1" data-bbox="378 877 1411 1446"> <thead> <tr> <th>Criteria</th> <th>Excellent (5)</th> <th>Very Good (4)</th> <th>Good (3)</th> <th>Fair (2)</th> <th>Poor (1)</th> </tr> </thead> <tbody> <tr> <td>Punctuality and Attendance</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Professionalism and Work Ethics</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Communication Skills(Oral and Written)</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Initiative and Enthusiasm</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Ability to Work Independently</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Technical/Subject Knowledge</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Problem-Solving and Analytical Ability</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Teamwork and Collaboration</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Quality and Timeliness of Work</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Adaptability and Learning Ability</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table> <p>Moreover, the mentor will provide remarks on the key strengths of the student intern, areas requiring improvement, and any special contributions or achievements demonstrated by the student during the internship.</p>	Criteria	Excellent (5)	Very Good (4)	Good (3)	Fair (2)	Poor (1)	Punctuality and Attendance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Professionalism and Work Ethics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Communication Skills(Oral and Written)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initiative and Enthusiasm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ability to Work Independently	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Technical/Subject Knowledge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Problem-Solving and Analytical Ability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Teamwork and Collaboration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Quality and Timeliness of Work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Adaptability and Learning Ability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Training Schedule

Week	Date	Topics
1	8/6/2026	<p style="text-align: center;">Part-I : Apiculture (Beekeeping Industry) Venue: Department of Zoology</p> <ul style="list-style-type: none"> • Ice Breaking Session: Introduction of the participants and the mentor. • Introduction to Apiculture: Bee Economy: Students will be made aware of economic significance of beekeeping, beekeeping industry, which helps them to analyse the practical value and will inspire entrepreneurial thinking.
	9/6/2026	<ul style="list-style-type: none"> • Beekeeping Equipments: Traditional and Modern Bee Hives: Students will be made familiar with different types of traditional hives as well as the modern bee hives with the help of power point presentations, pictures as well as miniature models.
	10/6/2026	<ul style="list-style-type: none"> • Other Beekeeping Equipments: Students will be given knowledge about the use and maintenance of beekeeping equipments like hive tools, bee brush, smoker etc. Familiarity with specialized tools fosters advanced technical competence.
	11/6/2026	<ul style="list-style-type: none"> • Social Organization of Bee Colony: Knowledge will be provided about the bee colony, different castes of bees and their roles and this will improves the ability of students to monitor colony health and behaviour with help of preserved specimens.
	12/6/2026	<ul style="list-style-type: none"> • Suitable bee species for Apiculture: Students will be given knowledge about suitable honeybee species for beekeeping in a particular region. Moreover, information will be provided about the diseases and their control measures for more effective hive management.
	13/6/2026	<ul style="list-style-type: none"> • Methods of Extraction of Honey: The students will be made aware of both traditional and modern extraction techniques broadening the practical skill set of students. • Library Visit: Students will be encouraged to visit Library to explore literature about bees.
Week	Date	Topics

2	15/6/2026	<ul style="list-style-type: none"> • Methods of extraction of other bee products: Students will be given awareness about different methods for extraction of other bee products like pollen, propolis, bee wax etc using ppts and videos.
	16/6/2026	<ul style="list-style-type: none"> • Products of Apiculture Industry its uses and Startups: Learning about diverse bee products educates students about their applications and as potential income sources with the help of videos and ppts.
	17/6/2026	<ul style="list-style-type: none"> • Visit to Apiary: By aligning theoretical understanding with practical skills such as Visit to Apiary, will collectively enhance the student's learning experience and readiness for future opportunities in apiculture and related fields.
	18/6/2026	Holiday
	19/6/2026	<ul style="list-style-type: none"> • Evaluation and Report Writing
	20/6/2026	<p>Part-II : Hand-on Training in Plant Tissue Culture Techniques Venue: Department of Botany</p> <ul style="list-style-type: none"> • Basic concepts of Plant Biotechnology: Introduction of Plant Biotechnology, Interactive lecture on scope and application, Group discussion on uses in agriculture and floriculture, Timeline creation of major discoveries, Demonstration explaining Totipotency.
Week	Date	Topics
3	22/6/2026	<ul style="list-style-type: none"> • Basic lab skills: Lab safety training, Demonstration of do's and don'ts, Practice wearing PPE and handling materials
	23/6/2026	<ul style="list-style-type: none"> • Laminar airflow, autoclave, Nutrient media, stock solutions: Hands-on training using Laminar Airflow Cabinet and Autoclave, Preparation of Murashige and Skoog medium, Stock solution preparation, pH adjustment and sterilization
	24/6/2026	<ul style="list-style-type: none"> • Sterilization methods: Surface sterilization of explants, Sterilization of tools and vessels, Working in sterile conditions

	25/6/2026	<ul style="list-style-type: none"> • Initiation, multiplication, rooting, hardening: Demonstration of culture initiation, Subculturing practice, Root induction experiment. • Visit to Library: Students will be encouraged to visit Library to explore literature about Plant tissue culture
	26/6/2026	<ul style="list-style-type: none"> • Callus induction, organogenesis: Induction of callus from explants, Observation of shoot/root formation, Recording growth responses
	27/6/2026	<ul style="list-style-type: none"> • Transfer to greenhouse/field: Transfer plantlets to pots, maintain humidity conditions, Monitor plant survival
Week	Date	Topics
4	29/6/2026	<ul style="list-style-type: none"> • Ornamental plant propagation, startups: Propagation of orchids, Roses, etc., Brainstorming session on startup ideas, Presentation of business models
	30/6/2026	<ul style="list-style-type: none"> • Visit to Plant Tissue Culture facility in Department of Botany, Panjab University, Chandigarh (Tentatively)
	1/7/2026	<ul style="list-style-type: none"> • Evaluation and Internship Report Submission • Valedictory

Note: Internship report submission, viva voce and evaluation for Apiculture will be done on 10th day and for Plant Tissue Culture Techniques will be done on 20th day of the internship programme.

Industry Partner: Global Apiaries Limited, Dera Bassi, India.