

DEPARTMENT OF BOTANY

UNDERGRADUATE COURSE CURRICULUM 2023-24

PART-A: Introduction			
Program: <i>Diploma Course</i>		Class: B. Sc. Semester-III	Year: 2023 Session: 2023-2024
1	Course Code	BSC – 3T	
2	Course Title	Archegoniate and Paleontology	
3	Course Type	Discipline Specific Course (DSC)	
4	Pre-requisite(if any)	As per Government norms / Institutional scheme	
5	Course Learning Outcomes (CLO)	<p>After completion of this course, the students will be able to -</p> <ul style="list-style-type: none"> ➤ - understand the concept, nature, occurrence and diversity and evolution of Archegoniate plant (Bryophyta, Pteridophyta and Gymnosperm) ➤ - learn basic techniques of its collection, identification and preservation. ➤ -- become familiar with the common features, habitat, structure, mode of reproduction of the land plant and their economic importance with evolutionary significance. 	
6	Credit Value	03 (Credit = 15 Hours Teaching-learning)	
7	Total Marks	Max. Marks: 100	Min Passing Marks: 40

PART -B: Content of the Course

Total No. of Teaching-learning - Hours- 45		
Unit	Topics (Course contents)	No. of Hours
I	Bryophytes: Unifying features and concept of archegoniate; General characteristics, adaptations to land habit. Classification. Range of thallus organization. Gametophyte and Sporophyte with evolutionary concept. Morphology, anatomy and reproduction of <i>Riccia</i> , <i>Marchantia</i> , <i>Anthoceros</i> and <i>Funaria</i> (Developmental details not to be included). Ecology and economic importance of bryophytes with special mention of <i>Sphagnum</i> .	12Hours
II	Pteridophytes: General characteristics, classification, concept of Heterospory. Telome and stellar evolution. Morphology, anatomy and reproduction of <i>Psilotum</i> , <i>Lycopodium</i> , <i>Selaginella</i> , <i>Equisetum</i> and <i>Marsilea</i> (Developmental details not to be included). General idea of Ferns. Ecological and economic importance	11Hours
III	Gymnosperm: General characteristics, Classification. Morphology, anatomy and reproduction of <i>Cycas</i> , <i>Pinus</i> , <i>Taxus</i> , <i>Ginkgo</i> and <i>Gnetum</i> (Developmental details not to be included). Concept of living fossils. Ecological & Economic importance of Gymnosperms.	11Hours
IV	Paleobotany: Basic concept fossils. Geological time table; Process of fossilization and types of fossil; Concept of Paleocology and Paleopylanology; and Early land plants. Concept of Fossil-taxa - form species, genera and family; General account of Primitive vascular plants - Psilophytales (<i>Rhynia</i> , <i>Cooksonia</i> , <i>Psilophyton</i> & <i>Zosterophyllum</i>) and Calamitales (Calamites).	11Hours
Keywords: Bryophytes, Pteridophyta, Gymnosperm, Paleobotany and Plant Fossil		

Signature of Convener & Members of BOS:

① *AS*
 ② *AS*
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 ⑤ *AS*
 ⑥ *AS*
 ⑦ *AS*

PART-C (BSC - 3T)

Learning Resources: Text Books, Reference Books and Others

Text Books Recommended

1. Sporne, K. K. (1991) The Morphology of Pteridophytes, B. I. Publishing Pvt. Ltd. Bombay.
2. Stewart, W. N. and Ruthwell, G. W. (1993) Paleobotany and the Evolution of Plants. Cambridge Univ. Press.
3. Vashishtha, B. R. (2005) Pteridophytes S. Chand and Co., Delhi.
4. Vashishtha, B. R. (2005) Bryophytes S. Chand and Co., Delhi.
5. Vashishta, P.C., Sinha, A.K., Kumar, A., (2010). Pteridophyta, S. Chand. Delhi, India
6. Bhatnagar, S.P. and Moitra, A. (1996). Gymnosperms. New Age International (P) Ltd Publishers, New Delhi.
7. Parihar, N.S. (1991). An introduction to Embryophyta. Vol. I. Bryophyta. Central Book Depot.

Online Resources-

❖ e-Resources / e-books and e-learning portals

- <https://www.amazon.in/Introduction-Bryophytes-Alain-Vanderpoorten-ebook/dp/B007NFWQK>
- [https://books.google.co.in/books/about/Introduction to Bryophytes.html?id=sgqQ2YZt6Q4C&redir_esc=y](https://books.google.co.in/books/about/Introduction%20to%20Bryophytes.html?id=sgqQ2YZt6Q4C&redir_esc=y)
- [https://books.google.co.in/books/about/Botany for Degree Students Bryophyta.html?id=bgF1ngEACAAJ&redir_esc=y](https://books.google.co.in/books/about/Botany%20for%20Degree%20Students%20Bryophyta.html?id=bgF1ngEACAAJ&redir_esc=y)
- https://www.junkvbooks.com/?gad_source=1&gclid=CjwKCAiAsIGrBhAAEiwAEzMIC5h664baQJnJBjbmQaqdXnDjK-gIatPWrmzerPKuJkvmL5uxj7dQRoCBloQAvD_BwE
- <https://link.springer.com/book/10.1007/978-3-662-13164-0>
- [https://books.google.co.in/books/about/The Gymnosperms.html?id=FG3rCAAAQBAJ&redir_esc=y](https://books.google.co.in/books/about/The%20Gymnosperms.html?id=FG3rCAAAQBAJ&redir_esc=y)
- <https://en.wikipedia.org/wiki/Paleobotany>
- [https://hdjaincollege.org/fileupload/uploads/5f0ec52e7e16520200715085822Scan%2015%20Jul%202020%20\(3\).pdf](https://hdjaincollege.org/fileupload/uploads/5f0ec52e7e16520200715085822Scan%2015%20Jul%202020%20(3).pdf)
- <https://www.encyclopedia.com/plants-and-animals/botany/botany-general/psilophytales>
- Use of following sites
 - <https://uou.ac.in/sites/default/files/slm/BSCBO-103.pdf>
 - <https://uou.ac.in/sites/default/files/slm/MSCBOT-503.pdf>
 - [https://www.uou.ac.in/lecturenotes/science/MSCBOT-17/UNIT-PTERIDOPHYTA%20\(BOT-502\).pdf](https://www.uou.ac.in/lecturenotes/science/MSCBOT-17/UNIT-PTERIDOPHYTA%20(BOT-502).pdf)
 - <https://www.scribd.com/document/522625106/Bryophyta-by-O-P-Sharma>
 - <https://www.perlego.com/book/3099288/textbook-of-bryophytes-pdf>

Part - D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:

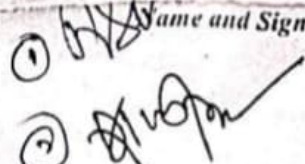
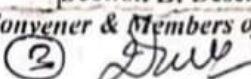
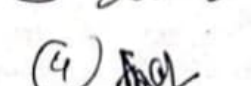
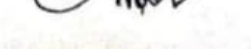

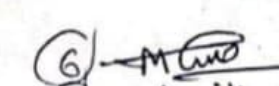
Maximum Marks: 100 Marks

Continuous Comprehensive Evaluation (CCE): 20 Marks

Semester End Exam (SEE): 80 Marks

Internal Assessment: Continuous Comprehensive Evaluation (CCE)	Internal Test - 02 of 10 Marks each Assignment -01 of 10 Marks	The best obtained marks of both test exam and marks of Assignment shall be considered against 20 Marks
Semester End Exam (SEE):	Paper – Two section – A & B Section A: Objective and Short answer type questions – 10 + 30 = 40 Marks Objective-10 x 1=10; Short Answer Type Questions- 10 x 3=30 Section B: Descriptive answer type questions unit wise – 4 x 10 = 40 Marks	

Name and Signature of Convener & Members of BOS:

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