University of Kerala

Discipline	**BOTANY**				
Course Code	**UK4DSCBOT202**				
Course Title	**ARCHEGONIATES AND PALEOBOTANY**				
Type of Course	**DSC**				
Semester	**IV**				
Academic Level	**200 - 299**				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	04	03 Hours	-	02 Hours	05 Hours
Pre-requisites	UK3DSCBOT201				
Course Summary	To familiarize students with the characteristic features and evolutionary significance of archegoniates. To impart knowledge about fossil formation and its significance To give a basic outlook towards the ecological and economic significance of Archegoniate.				

Detailed Syllabus:

Module	Unit	Content	Hrs
		Bryophytes	
I	1	**Bryophytes**- General characters and classification by Proskauer (1957)	**08**
	2	Study of habit, thallus organization, vegetative and sexual reproduction and alternation of generation of the following types (Developmental details are not required) *Riccia, Polytrichum*	
	3	Economic Importance of Bryophytes.	**08**
		Pteridophytes	
II	4	Introduction: General characters. Classification as proposed by Smith(1959)	
	5	Study of the habitat, habit, internal structure, reproduction and life cycle of the following types (Developmental details not required). *Selaginella* and *Pteris*	
	6	Economic importance of Pteridophytes	
		Gymnosperms	
III	7	Introduction –General characters and classification by Sporne,(1965).	**10**
	8	Study of the habit, anatomy, reproduction and life cycle of the following types (Developmental details are not required) *Cycas*, *Pinus* and *Gnetum*	
	9	Economic importance of Gymnosperms	
		Paleobotany	
IV	10	Fossil formation, types of fossils.	**04**
	11	Fossil Pteridophytes- *Rhynia*,	

		Fossil gymnosperms-*Lyginopteris*	
V	**Identification, collection and preservation of archegoniates**		**15**
	12	Archegoniates,-Features, Transition to land habit, Collection and preservation methods, Conservation studies	
	13	Alternation of generations, lifecycle Patterns, eusporangiate and leptosporangiate sporangia	
	14	Field Visit to collect bryophytes, pteridophytes and gymnosperm specimens and submit a detailed report with geotagged photos for evaluation.	

Practicals		
	1. *Riccia*- Internal structure of thallus 2. *Polytrichum*- Morphology - archegonial cluster, Antheridial cluster, SporophyteV.S 3. *Selaginella* – T.S of stem and rhizophore, T.S of Strobilus, *4. Pteris* - T.S of Rachis, T.S of Sporophyll, Prothallus 5. *Cycas*- T.S of leaf, coralloid root (morphology). Micro and megasporophyll 6. *Pinus*- spur shoot, T.S. of needle, male and female cone. 7. *Gnetum*- T.S of stem and leaf, male and female cone (morphology) 8. Permanent slide/ images of Fossils – *Rhynia*, *Lyginopteris*	**30**

Suggested Reading

1. Pandey B.P.2010. College Botany Vol II, Chand Publications, New Delhi
2. PariharN.S.2015. An Introduction to Embryophyta- Pteridophytes Surjeet Publications
3. Rashid.A.2012. An introduction to Bryophytes, Vikas Publishers N Delhi
4. Chopra RN and Kumra P K.2005.Biology of Bryophytes –New age international Publ.
5. Cutler. J. M. - and Chamberlain C.J.958.Morphology of Gymnosperms -Central Book Depot ,Allahabad
6. Gupta V .K. and Varshneya U.D.1967. An Introduction to Gymnosperms–Kedarnath,
7. Pandey.B.P.1972.College Botany Vol I, Chand Publications, New Delhi

References

1. Sambamurthy A.V.2005.A textbook of Bryophytes, Pteridophytes, Gymnosperms
1. and Palaeobotany I K International PVT LTD.
2. Sharma A K and Rajeswari Sharma.2010. Palaeobotany and Gymnosperms
3. Sharma OP.2016.Gymnosperms. Pragathi Prakashan. Meerut
4. Smith G.M.1955.Cryptogamic Botany – Vol.II – Mc Graw Hill Co. NewDelhi
5. Sporne K.R.1966. Morphology of Pteridophytes - Hutchin UniversityLibrary, London

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed