<table>
<tr><td>Course Code</td><td colspan="6">BYU3500</td></tr>
<tr><td>Course Title</td><td colspan="6">Diversity of plants</td></tr>
<tr><td>Credit value</td><td colspan="6">05</td></tr>
<tr><td>Core/Optional</td><td colspan="6">Core</td></tr>
<tr><td>Prerequisites</td><td colspan="6">3 passes in A/L Biology/ Pass in OUSL Foundation in Biology courses</td></tr>
<tr><td rowspan="2">Hourly breakdown</td><td colspan="2">Theory</td><td>Practical</td><td>Independent Learning</td><td>Assessment</td><td>Total</td></tr>
<tr><td>76 hrs
(38 Sessions)
2 x 38 = 76</td><td>21 hrs
(7 DS)
3 x 7</td><td>34 hrs
(4 days x 6+ 4 hrs 5th day Lab) =28
+field visit 6 hrs</td><td>130 hrs
(Sessions [114hrs) ie 3 x 38 sessions + + Online [02hrs] + recommended readings [02hrs]) +[3 x 4hrs] independent / group learning for practical</td><td>4 hrs
(3 CAT x 1hr) + (1 Practical test x 1hr)</td><td>265 hrs</td></tr>
<tr><td>Course Aim/s.</td><td colspan="6">To provide knowledge on the heterogeneity of plant life on earth and clustering into Kingdoms based on certain similarities/ dissimilarities; awareness about the evolutionary sequence of plant life on earth</td></tr>
<tr><td>PLOs addressed by course</td><td colspan="6">PLO1: Knowledge: Explain the fundamental, principles and broader knowledge pertaining to the chosen science disciplines offered for the BSc degree.
PLO2: Practical Knowledge and Application. Acquire competency in practical skills and the necessary knowledge to appropriately use these skills.
PLO3: Communication: Communicate reliably, efficiently and effectively to present information, ideas and concepts to the scientific community as well as to the wider society.
PLO4: Individual Work, Team Work and Leadership: Function effectively as an individual, and as a team member, sharing work and experiences, leading and managing assigned tasks to completion on time, demonstrating leadership to address situations in diverse and multi-disciplinary environments in day to day life.
PLO5: Creativity and Problem Solving: Identify problems and argue out and analyze such problems using qualitative and/or quantitative practical approaches in scientific methodology to provide valid conclusions
PLO9: Lifelong Learning: Foresee new trends and recognize their impact, and update knowledge and develop new skills to meet future changes and challenges.</td></tr>
<tr><td>Course Learning Outcomes (CLO)</td><td colspan="6">The students should be able to:

CLO1- Evaluate and scientifically discuss the evolutionary adaptations shown by plants when coming to a terrestrial habitat; discuss the limitations seen in early land plants and the features of higher plant that made them successful as terrestrial plants (PLO 1,5)
CLO2- Compare prokaryotic and eukaryotic organisms (PLO1, 5)
CLO3- Describe the morphological diversity seen in viruses, cyanobacteria, bacteria (PLO1)
CLO4- Discuss giving examples the morphological, biochemical, reproductive diversity and diversity in life cycles seen in Fungi (PLO 1, 5)
CLO5- Analyze the morphological, biochemical, physiological diversity in Algae along with the diversity in life cycles (PLO 1,5)
CLO6- Evaluate the adaptations shown by non-vascular plants (the amphibians of the plant kingdom) and primitive vascular plants to a land habitat and their short comings which make them only partially successful in their habitat (PLO1,5)
CLO7- Analyze the economic and environmental importance of cyanobacteria, bacteria, algae, fungi and non vascular and lower vascular plants (Plo1, 5)
CLO8- Assess and differentiate the morphological, anatomical and reproductive diversity in angiosperms and gymnosperms; comment on the evolutionary advancements shown in reproductive features for success in a land habitat (PLO1,5)
CLO9- Discuss the primary structure, secondary structure and anomalous growth of angiosperms along with special adaptations for seed dispersal (PLO1,5)
CLO10-Apply the knowledge gained from theory lessons to solve problems at practical sessions (PLO s 1, 2, 3, 4, 5 and 10)</td></tr>
<tr><td>Content
(Main topics, sub topics)</td><td colspan="6">Viruses, bacteria and cyanobacteria- origin and diversity of life, viruses, bacteria morphology and structure, bacteria-physiology, growth and reproduction, cyanobacteria

Fungi- general features of fungi, myxomycotina and mastigomycotina, zygomycotina, ascomycotina, basidiomycotina, deuteromycotina, special microbial relationships

Algae – the algae, green algae, brown algae, red algae, evolutionary trends and the economic importance of algae

Nonvascular land plants – non vascular land plants-bryophytes, liverworts, hornworts and mosses

Seed less vascular land plants – vascular plants, psilopsida, lycopsida, horse tails, ferns, higher ferns, the</td></tr>
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<tr><td></td><td colspan="2">most advanced ferns

Gymnosperms and angiosperms – the gymnosperms, coniferophyta, flowering plants (angiosperms), the flower, development of gametophyte, pollination and fertilization, fruits, seeds and germination, the cell and tissues, the structure of the primary plant body, the root, the shoot, secondary growth</td></tr>
<tr><td>Teaching Learning methods</td><td colspan="2">• Self- learning, Independent learning
* Instructional material (IL)
* Online activities (OL)
* Reference Work (RE)
• Compulsory contact sessions
* Practical sessions (PR)
* Assignments (A)
* MCQ, Structured essay (SEQ), Essay questions (ES)
* Practical tests (PT)
• Non-compulsory contact sessions
* Day Schools (DS)
* Field Trip (FT)</td></tr>
<tr><td rowspan="2">Assessment strategy</td><td>Overall CA Mark (OCAM): 40%</td><td>Final Assessment: 60%</td></tr>
<tr><td>CAT I (OBT) – 1 h, CAT II (NBT I) 1h, CAT III (NBTII) 1 h, PT 1 h
Minimum 30 marks and attendance compulsory for PT

Overall CA Mark (OCAM): 50% best (OBT/NBT-I/ NBT-II/ PT) + 50 % (second best OBT/NBT-I/ NBT-II/ PT)</td><td>Theory:
Structured essay- (SE) – 1 hour 200%
+ Essay type – 2 hrs – 400%
200 %/ 2= 100% + 400/4= 100 %
$\frac{100\ \% + 100\ \%/}{2}$ = 100 %</td></tr>
<tr><td>Recommended Readings:</td><td colspan="2">Latest editions of:

1. Tortora, G.J., Funke, B.R. and Case, C.L. (2004) Microbiology An Introduction (8th Edition), Pearson Education (Singapore) Pte. Ltd., India.
2. Peter Bell, Christopher woodcock. (1978).The Diversity of Green Plants - 2nd Edition, Whitstable litho Ltd., Britain.
3. Prem Puri. (1986). Bryophytes; Morphology, Growth and Differentiation. Atma Ram & Sons Delhi
4. Chamberlain, C. J., Gymnosperms: Structure and Evolution. University of Chicago Press, Chicago, 1935.
5. Sporne, K. R., The Morphology of Pteridophytes, Hutchinson, London, 1975.</td></tr>
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