BTY 001: Practical Gardening (Field Practice 6hrs)	
About the course:	It is a value added course intended to train students for developing gardening skills**.**
Course objective:	To train the students in setting up garden by providing hands-on-experience
Learning outcome:	On completion of the course, the students will acquire the skills of developing a garden, the challenges faced and solutions
1.	Introduction to gardening, outdoor and indoor gardens, its importance
2.	Land use, tillage, soil fertility, nutrient recycling, organic residues, organic manures, composting, soil biota and decomposition of organic residues, earthworms and vermicompost, weeding, diseases, insect pest management, irrigation
3.	Understanding the soil, light conditions, water availability, seasonal changes, space limitations, maintenance
4.	Choice of plants, Ornamental, medicinal, edible, trees, climbers, aquatic
5.	Hedges, lawns, ponds, selection of plants, pruning, fertilizing, propagating
6.	Naturally available resources, rocks, logs, dead trees, pebbles
7.	Arrangement, labelling, beautification, maintenance

BTY 5008: Organic Farming - A Do It Yourself Course for Self-Reliance (Credits 0; Theory 1 hr Practical/Practice 4 hrs)	
Objectives:	It is an open elective course, intended to train students for self-sustainable organic farming**.** • To study the various concepts in organic farming • To get a hands-on-experience of farming, agro-processing, sales, marketing and agro-economics.
Learning outcome:	On completion of the course, the students will be armed with farming skills, the know-how of agro-processing, and entrepreneurship. Starting from kitchen garden, the course will arm the students with know-how to scale up farming to commercial level.
1	Introduction to organic farming: Concept and definition, its relevance to Indian and global agriculture, its future prospects.
2	Land use and organic manure: Land use, tillage, soil fertility, nutrient recycling, organic residues, organic manures, composting, soil biota and decomposition of organic residues, earthworms and vermicompost, weeding, diseases and insect pest management.
3	Cropping systems: Crop rotation, multiple and relay cropping system, intercropping.
4	Marketing and Sales: Agro-processing, sales and marketing
	Practices: Intercropping and organic cultivation: • Soil testing • Selection of appropriate crops for cultivation and raising the seedlings in germination trays • Land preparation in parallel • Planting • Manuring at appropriate intervals • Pest control using organic method, if required Preparation of organic manure: • Raising earthworms • Collecting appropriate organic waste • Preparation of vermicompost and other organic manure Hands-on training for agro-processing, sales and marketing • Agro-processing • Marketing, sale and account maintenance of farm products and organic manure

Reference:

1. S.P. Palaniappan, K. Annadurai (2018) Organic Farming: Theory and Practice. Scientific Publishers, India.
2. S.R. Reddy (2017) Principles of Organic Farming, Kalyani Publishers, India.
3. P L Maliwal (2020) Principles of Organic Farming. Scientific Publishers, India.
4. Gangopadhyay, A. (2007) Crop Production Systems and Management. Gene Tech Books, India.
5. Ananthakrishnan, T. N. (ed.) (1992) Emerging Trends in Biological Control of Phytophagous Insects. Oxford & IBH.

6. Francis, C. A. (1986) Multiple Cropping system. McGraw Hill Higher Education, New York.
7. Joshi M and Parbhakarasetty, T.K. (2005) Sustainability through Organic Farming. Kalyani Publishers, India.

AY 2020-2021

Time Table for Second Semester M.Sc Botany

Day	Semester	9:30-10:30	10:30-11:30	11:30-12:30	12:30-1:30	1:30-2:30	2:30-5:30
Monday	S2	BTY 5206 CH	BTY 5206 AK/CH	BTY 5208 JA			BTY 5209 GA
Tuesday	S2	BTY 5209 GA		BTY 5207 AJ			BTY5206 AK and CH
Wednesday	S2	BTY 5209 (Tutorial	BTY 5207 AJ	BTY 5206 AK	BTY 5206 AK/CH (Tutorial)		BTY 5207 AJ
Thursday	S2	BTY 5207 (Tutorial	BTY 5209 GA	BTY 5208 JA	BTY 5208 JA (Tutorial)		BTY 5208 JA
Friday	S2	Elective	Elective	Elective	Elective		Elective

LUNCH

Semester II		
Course Code	**Course Title**	**Faculty**
BTY 5206	Plant Biochemistry and Plant Physiology	AK/CH
BTY 5207	Developmental Biology of the Plants	AJ
BTY 5208	Plant Biotechnology and Plant Genetic Engineering	JA
BTY 5209	Omics Approaches in Plant Science	GA
Elective		
BTY 5001	Plant Tissue Culture Techniques	DE

AK-Prof. K Arun Kumar

DE-Prof. Dennis Thomas T

AJ-Dr. Ajay Kumar

JAS-Dr. Jasmine M Shah

GA-Dr. Ginny Antony

CH-Dr. Chithra M

Head of the Department

(Prof.K. Arunkumar)

AY 2019-2020
Time Table for Second Semester MSc Plant Science

Day	Semester	9:30-10:30	10:30-11:30	11:30-12:30	12:30-1:30	1:30-2:30	2:30-5:30
Monday	S2	BTY 5206 AK/CH		BTY 5208 JA		LUNCH	BTY 5209 GA
Tuesday	S2	BTY 5209 GA		BTY 5207			BTY 5206AK and CH
Wednesday	S2	BTY 5209 (Tutorial	BTY 5207 AJ	BTY 5206 AK	BTY 5206 AK/CH (Tutorial)		BTY 5207 AJ
Thursday	S2	BTY 5207 (Tutorial	BTY 5209 GA	BTY 5208 JA	BTY 5208 JA (Tutorial)		BTY 5208 JA
Friday	S2	Elective	Elective	Elective	Elective		Elective

Semester II		
Course Code	**Course Title**	**Faculty**
BTY 5206	Plant Biochemistry and Plant Physiology	AK/CH
BTY 5207	Developmental Biology of the Plants	AJ
BTY 5208	Plant Biotechnology and Plant Genetic Engineering	JA
BTY 5209	Omics Approaches in Plant Science	GA
Elective		
BTY 5001	Plant Tissue Culture Techniques	DE

AK-Prof. K Arun Kumar
DE-Prof. Dennis Thomas T
AJ-Dr. Ajay Kumar
JAS-Dr. Jasmine M Shah
GA-Dr. Ginny Antony
CH-Dr. Chithra M

Head of the Department

Time Table for First (2018-20) and Third (2017-19) Semester MSc Plant Science

Day	Semester	9:30-10:30	10:30-11:30	11:30-12:30	12:30-1:30	1:30-2:30	2:30-4:30	4:30-5:30
Monday	**S1**	BPS 512 DE	BPS 515 JAS	BPS 513 AJ		LUNCH	BPS 511 and BPS 512 DE/AK	
	S3	Tutorial BPS 533	**BPS 532 GA**		*Dissertation BPS 542 AJ/GA/CH/JAS/DE/AK		BPS 533 CH	
Tuesday	**S1**	BPS 513AJ/CH	BPS 511 AK	514 GA/JAS			**BPS 514 JAS/GA**	
	S3	*Dissertation BPS 542 AJ/GA/CH/JAS/DE/AK		*Dissertation BPS 542 AJ/GA/CH/JAS/DE/AK	BPS 533 CH		BPS 531 AJ	
Wednesday	**S1**	Tutorial BPS 514/BPS 515	**BPS 514 GA/JAS**	BPS 511 AK			BPS 515 JAS	
	S3	*Dissertation BPS 542 AJ/GA/CH/JAS/DE/AK		BPS 533 CH			BPS 531 AJ	*Dissertation BPS 542 AJ/GA/CH/JAS/DE/AK
Thursday	**S1**	BPS 512-DE		BPS 515 JAS			**BPS 513AJ/CH**	
	S3	*Dissertation BPS 542 AJ/GA/CH/JAS/DE/AK	**BPS 532 GA**	BPS 531 AJ	*Dissertation BPS 542 AJ/GA/CH/JAS/DE/AK		BPS 532 GA	
Friday	**S1**	elective						
	S3	elective						

*Dissertation is to be submitted at the end of 4th semester, but the project work is to be started in the 3rd semester itself. Students are mandatorily required to meet their respective guides regularly.

Semester 1		
Course Code	**Course Title**	**Faculty**
BPS 511	Plant Diversity I (Algae, Fungi, Lichen and Broyophytes)	AK- Prof. K Arun Kumar
BPS 512	Plant Diversity II (Pteridophytes, Gymnosperms and Paleobotany)	DE- Prof. Dennis Thomas T
BPS 513	Ecology of Plants	AJ- Ajay Kumar/CH-Dr. Chithra M
BPS 514	Cell & Molecular Biology	GA- Dr. Ginny Antony/JAS-Dr. Jasmine M Shah
BPS 515	Genetics and Cytogenetics	JAS-Dr. Jasmine M Shah
Semester 3		
BPS 531	Developmental Biology of the Plants	AJ- Ajay Kumar
BPS 532	Plant-Pathogen Interactions	GA- Dr. Ginny Antony
BPS 533	Methods in Plant Biology	CH-Dr. Chithra M

Time Table for Second (2017-19) and Fourth (2016-18) Semester M.Sc. Plant Science

Day	Semester	9:30-10:30	10:30-11:30	11:30-12:30	12:30-1:30	1:30-2:30	2:30-5:30
Monday	S2	Seminar AJ/AK/DE/CH/JA/GA		BPS 522 AK	BPS 522 AK/CH	LUNCH	BPS 524 GA
	S4	BPS 542	BPS 542	BPS 541 AJ			BPS 542
Tuesday	S2	BPS 521 AJ		BPS 523 JA			BPS 522 AK CH
	S4	BPS 542		BPS 542			BPS 542
Wednesday	S2	BPS 524 GA	Tutorial GA	BPS 522 CH	BPS 521 DE/AK		BPS 521 AJ/DE/AK
	S4	BPS 542	BPS 542	BPS 542			BPS 542
Thursday	S2	BPS 524GA		BPS 523 JA	Tutorial JA		BPS 523 JA
	S4	BPS 542	BPS 541 AJ	BPS 542			BPS 541 AJ
Friday	S2	Elective	Elective	Elective	Elective		Elective
	S4	Elective	Elective	Elective	Elective		Elective

Semester II

Course Code	Course Title	Faculty
BPS 521	Plant Systematics	AJ/AK/DE- Ajay Kumar, K Arun Kumar, Dennis Thomas
BPS 522	Plant Biochemistry and Physiology	AK/CH- K Arun Kumar, Chitra
BPS 523	Recombinant DNA Technology and Plant Genetic Engineering	JA- Jasmine M. Shah
BPS 524	Omics Approaches in Plant Science	GA- Dr. Ginny Antony
BPS 502	Plant Tissue Culture (Elective)	DE- Dennis Thomas T.

Semester IV

Course Code	Course Title	Faculty
BPS 541	Economic Botany	Aj – Ajay Kumar
BPS 542	Dissertation	DE/AK/JA,GA/AJ/CH

DEPARTMENT OF PLANT SCIENCE, SCHOOL OF BIOLOGICAL SCIENCES
CENTRAL UNIVERSITY OF KERALA (2016-17)

Time table: Semester I (S1)

Time / Days	9.30-10.30 am	10.30-11.30 am	11.30 am-12.30 pm	12.30-1.30 pm	1.30-2.30 pm	2.30-3.30 pm	3.30-4.30pm	4.30-5.30 pm
Monday	BPS 514 Biophysics & Instrumentation (AJ/JAS) BPS 511		Cell and Molecular Biology (GA)		LUNCH BREAK	BPS 512 Lab Biochemistry (AK/DE)		
Tuesday	BPS 512 Biochemistry (AK)	BPS 513 Ecology and Environmental Biology (AJ)	BPS515 Genetics (DE)			BPS 513 Ecology and Environmental Biology (AJ/DE)		
Wednesday	BPS 513 Ecology and Environmental Biology (AJ)		BPS 511 Cell and Molecular Biology (GA)	BPS 514 Biophysics & Instrumentation (AJ/JAS)		BPS 514 Lab Biophysics & Instrumentation (AJ/JAS)		
Thursday	BPS 515 Biochemistry (AK)		BPS 515 Genetics (DE)			BPS 511 Lab Cell and Molecular Biology (GA/AK)		
Friday	ELECTIVE		ELECTIVE			ELECTIVE		

DE Dr. T. Dennis Thomas
AJ - Ajay Kumar
GA - Dr. Ginny Antony
JAS – Dr. Jasmine M. Shah
AK - Dr. K. Arun Kumar

Course coordinator: Dr. T. Dennis Thomas

Faculty advisor: Dr. Jasmine Shah

DEPARTMENT OF PLANT SCIENCE, SCHOOL OF BIOLOGICAL SCIENCES
CENTRAL UNIVERSITY OF KERALA

Time table: Semester 3(S3)

Time / Days	9.30-10.30 am	10.30-11.30 am	11.30 am-12.30 pm	12.30-1.30 pm	1.30-2.30 pm	2.30-3.30 pm	3.30-4.30 pm	4.30-5.30 pm
Monday	BPS 532 Diversification of Plants (AK)	BPS 533 Plant Genomics (JAS/AJ)		SEMINAR	LUNCH BREAK	BPS 531 Lab Genetic Engineering and Genetically Modified Organisms (JAS)		
Tuesday	BPS 531 Genetic Engineering and Genetically Modified Organisms (JAS)		BPS 532 Diversification of Plants (AK)			BPS 531 Lab Genetic Engineering and Genetically Modified Organisms (JAS)		
Wednesday	BPS 532 Diversification of Plants (AK)	BPS 533 Plant Genomics (JAS/AJ)		SEMINAR		BPS 505 Plant Microbe interaction (GA)		
Thursday	BPS 531 Genetic Engineering and Genetically Modified Organisms (JAS)		BPS 505 Plant Microbe interaction (GA)			BPS 533 Plant Genomics (JAS/AJ)		
Friday	Elective		Elective			Elective		
Saturday	Elective		Elective			SEMINAR/ LIBRARY		

AK- Dr. K. Arunkumar
JAS - Dr. Jasmine M Shah
GA - Dr. Ginny Antony
AJ - Ajay Kumar

Coordinator: Dr.T. Dennis Thomas
Faculty Advisor: Dr.Ginny Antony

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