

KONGUNADU ARTS AND SCIENCE COLLEGE(AUTONOMOUS)

Re-Accredited by NAAC with 'A⁺' Grade (4th Cycle)

College of Excellence awarded by UGC

Coimbatore - 641 029.



LESSON PLAN

Department of Biotechnology

Batch: 2020-2022

Semester: 4

Name of the Staff: Dr. M. Gogul Ramnath

Name of the Subject: Natural Products and Research Methodology

S.NO	HOUR	PORTIONS TO BE COVERED	MODE OF INSTRUCTIONS/DELIVERY (CHALK & TALK/PPT/FLIPPED CLASS etc
Unit -1 (15 hours)			
1	3	Sources of crude drug: Biological, marine, Mineral and plant tissue culture as source of natural products	Chalk & Talk/PPT
2	3	Various methods of extraction and isolation of phytopharmaceuticals namely infusion, decoction	Chalk & Talk/PPT
3	2	Maceration, Percolation, Hot continuous extraction	Chalk & Talk/PPT
4	2	Successive solvent extraction, Supercritical fluid extraction	Chalk & Talk/PPT
5	3	Steam distillation, Counter-current Extraction, Ultrasound Extraction	Chalk & Talk/PPT
6	2	Parameters for selection of suitable extraction process	Chalk & Talk/PPT
Unit -2 (15 hours)			
7	2	Phytochemical Screening: Screening of alkaloids, saponins	Chalk & Talk/PPT
8	2	Cardenolides and Bufadienolides	Chalk & Talk/PPT
9	2	Flavonoids and Leucoanthocyanidins	Chalk & Talk/PPT
10	2	Tannins and polyphenols	Chalk & Talk/PPT
11	2	Anthraquinones, Cynogenetic glycosides, Amino acids in plant extracts	Chalk & Talk/PPT
12	1	Nutraceuticals and Health Foods: Classification of Nutraceuticals	Chalk & Talk/PPT
13	4	Health foods: Source, Chemical constituents, uses, actions and commercial preparations of following health foods, Alfalfa, Bran, Angelica, Chamomile, Corn oil, Fenugreek, Ferverfew, Garlic, Ginseng, Ginkgo, Honey, Hops, Safflower oil, Soyabean Oil, Turmeric	Chalk & Talk/PPT
Unit -3 (15 hours)			
14	4	Herbal cosmetics: Importance of herbals as shampoos (soapnut), conditioners and hair darkeners, (amla, henna, hibiscus, tea)	Chalk & Talk/PPT
15	2	Skin care (aloe, turmeric, lemon peel, vetiver)	Chalk & Talk/PPT
16	2	Colouring and Flavouring agents from plants	Chalk & Talk/PPT
17	3	Quality control of herbal drugs as per WHO, AYUSH and Pharmacopoeial guidelines-Extractive values, ash values	Chalk & Talk/PPT

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LESSON PLAN

Department of Biotechnology

Batch : 2021-2023

Semester : II

Name of the Staff: Dr. S. Dinesh Kumar

Name of the Subject: Lab in Genetic engineering and Immunotechnology

S.NO	HOUR	PORTIONS TO BE COVERED	MODE OF INSTRUCTIONS/DELIVERY (CHALK & TALK/PPT/FLIPPED CLASS etc
1.	2	Phage titration	CHALK & TALK + manual
2.	4	Restriction digestion	CHALK & TALK
3.	4	Restriction ligation	CHALK & TALK
4.	2	Non radioactive labeling of DNA	CHALK & TALK
5.	6	Southern Blotting	CHALK & TALK
6.	6	Northern Blotting	CHALK & TALK
7.	6	Western Blotting	CHALK & TALK
8.	6	Primer designing	CHALK & TALK
9.	6	Amplification by PCR	CHALK & TALK
10.	6	cDNA synthesis	CHALK & TALK
11.	1	<i>In vitro</i> site directed mutagenesis	CHALK & TALK
12.	1	Gene expression	CHALK & TALK
13.	4	Production and purification of IgG	CHALK & TALK
14.	2	Immunoassay of particulate antigen	CHALK & TALK
15.	4	Qualitative and Quantitative hemagglutination	CHALK & TALK
16.	1	Radial immunodiffusion	CHALK & TALK
17.	1	Ouchterlony double diffusion	CHALK & TALK
18.	1	Immunoelectrophoresis	CHALK & TALK
19.	1	Rocket immunoelectrophoresis	CHALK & TALK
20.	2	ELISA	CHALK & TALK
21.	2	DOT BLOT	CHALK & TALK
22.	2	Immunohistochemistry	CHALK & TALK
Total 70 hours			

S.D.
Dr. S. Dinesh Kumar

Approved

9.3.22

R. Jeyaraj

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LESSON PLAN

Department of Biotechnology

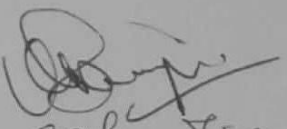
Batch : 2019-22

Semester : VI

Name of the Staff: Dr B Vishnupriya and Mrs. S Bhargavi

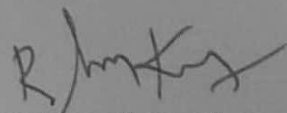
Name of the Subject: Core Practical - IV: Lab in Bioprocess Technology and Biopharmaceuticals

S.NO	HOUR	PORTIONS TO BE COVERED	MODE OF INSTRUCTIONS/DELIVERY (CHALK & TALK/PPT/FLIPPED CLASS etc
		BIOPROCESS TECHNOLOGY	
1	6	Isolation of alpha amylase producing bacteria	CHALK & TALK
2	12	Optimization of culture condition (Substrate, pH and Temperature)	CHALK & TALK
3	3	Bacterial amylase - Ammonium sulphate	CHALK & TALK
4	3	Dialysis	CHALK & TALK
5	6	Size exclusion chromatography	CHALK & TALK
6	3	Drying of solids by heat sources	CHALK & TALK
7	6	Wine production and analysis	CHALK & TALK
8	6	Sauerkraut preparation for lactic acid fermentation and analysis	CHALK & TALK
9	3	Immobilization of enzymes - gel entrapment	CHALK & TALK
10	7	Vermicompost preparation	CHALK & TALK
		BIOPHARMACEUTICALS	
11	6	Determination of antibacterial spectrum of drugs/Antagonist	CHALK & TALK
12	3	Preparation of herbal hydrogel	CHALK & TALK
13	3	Conversion of herbal oil to gel	CHALK & TALK
14	3	Testing haemagglutination and haemolytic activity of a drug formulation	CHALK & TALK
		Total hours	70


 Signature of the Staff

Approved


 09.3.22


 Signature of the HoD