



ST. ALBERT'S COLLEGE (AUTONOMOUS), ERNAKULAM

RESEARCH DEPARTMENT OF FISHERIES AND AQUACULTURE

Inauguration Ceremony of the
Certificate Programs

1. Aquarium Keeping and Ornamental Fish Rearing
2. Aquaponics Recirculatory Aquaculture Systems



Inaugural Address By:
Dr. Hari Krishnan M
Director, School of Industrial
Fisheries
CUSAT, Lakeside Campus



Presidential Address By:
Dr. M A Solomon
Principal, St. Alberts College
(Autonomous)
Ernakulam

Date : 13. July. 2021
Time : 2.00 PM
Venue : Google Meet



Head of the Department:
Dr. Bijoy V M

St. Albert's College (Autonomous)
Ernakulam
Research Department of Fisheries and Aquaculture

We cordially invite you to the Inaugural Ceremony of the
Certificate programs

**'AQUARIUM KEEPING AND ORNAMENTAL
FISH REARING'
&
'AQUAPONICS RECIRCULATORY
AQUACULTURE SYSTEMS'**

13 JULY 2021- 2.00PM

PROGRAM

PRAYER SONG : ANJALA
III B.Sc. AQUACULTURE

WELCOME : DR. BIJOY V M
HEAD OF THE DEPARTMENT
RESEARCH DEPARTMENT OF FISHERIES
AND AQUACULTURE

PRESIDENTIAL ADDRESS. : DR. M.A SOLOMON
PRINCIPAL
ST. ALBERT'S COLLEGE (AUTONOMOUS)
ERNAKULAM

INAUGURAL ADDRESS : DR. HARIKRISHNAN M
DIRECTOR
SCHOOL OF INDUSTRIAL FISHERIES, CUSAT

VOTE OF THANKS : SISLAVE K S
ASSISTANT PROFESSOR

RESEARCH DEPARTMENT OF FISHERIES AND AQUACULTURE



ST. ALBERT'S COLLEGE, ERNAKULAM CERTIFICATE PROGRAM IN AQUAPONIC RECIRCULATORY AQUACULTURE SYSTEMS

Program Objectives

- ✚ To introduce the concepts of aquaculture, hydroponics and recirculatory aquaculture systems.
- ✚ To generate a clear understanding of the integration of components through practical training.
- ✚ To skill the students to design, install and maintain any location specific aquaponics system.
- ✚ To be adept in RAS technology and economics of operation of aquaponics systems.

Program Overview

The program will be spread over six months with 64hours allotted for Theory Papers and 40hours for practical sessions, summing up to 104hours for the whole program. Total credits for the programme will be 7. The theory and practical sessions are spread over 20weeks. Two days in a week will be theory and practical sessions and on the third day the Trainees will be taken for visits to Farms, Hatcheries, Research Institutions, Fishing Harbours, Hydroponic, Aquaponic installations, RAS intallations etc. Assessment will be based on theory, practical examinations, student presentations and at the end of the program, students are required to design and demonstrate a prototype aquaponics system to exhibit the skills acquired.

Program Outcome

On successful completion of the program the students will have attained sufficient knowledge to work in the industry for Aquaponic, Hydroponic and Recirculatory Aquaculture System installations and gained self confidence for entrepreneurship in these fields.

Total Student Intake : 30

Eligibility : Plus 2 Pass with Biology as a subject of study

Scheme

Course Code	Course	Credits
AQPT01	Aquaculture & Hydroponics	1
AQPT02	Aquariculture	1
AQPT03	RAS Design Concepts	1
AQPT04	RAS Installation and Maintenance	1
AQPPR01	Aquaponics System Design, Installation and Maintenance	1
AQPPN01	Presentation for each Theory Course	1
AQPPS01	Prototype Setting	1
	Total	7

Examination

Theory

Examination will be conducted for the 5 courses offered having 1 credit each. Maximum Grade Points attainable for each course is 25.

For all courses (Theory and Practical)/overall programme, Letter grades and GPA/CGPA are given on the following scale

Range	Grade	Indicator
4.50-5.00	A+	Outstanding
4.00-4.49	A	Excellent
3.50-3.99	B+	Very Good
3.00-3.49	B	Good (Average)
2.50-2.99	C+	Fair
2.00-2.49	C	Marginal
Upto 1.99	D	Deficient (Fail)

Minimum C Grade is required for successful completion of the programme.

At First Stage Evaluation, Grade Points allotment for all courses will be as follows

Grade	Grade Points
A+	5
A	4
B	3
C	2
D	1
E	0

Presentation

Each student shall prepare and deliver a Powerpoint Presentation of not less than 15mins for each of the Theory courses offered.

Prototype Development and Report Submission

A working Prototype of the aquaponics system with all relevant components including the filtration component shall be demonstrated by each student on completion of the course along with the final practical examination.

Type of Questions

Objective type and short descriptive type questions will be asked for the final examination for each course.

Detailed Syllabus

AQPT01 Aquaculture & Hydroponics

16Hours

Expected Course Outcome

On completion of the course the students will have gained the following

- Comprehend the status of freshwater aquaculture in India.
- Demonstrate an understanding of basic principles of plant biology, entomology, plant nutrition and disorders, irrigation and fertilization, and environmental conditions necessary for growing greenhouse hydroponic vegetable crops.
- Understand the considerations involved with different types of greenhouses and structural components, control systems, and site selection in order to grow a successful crop.
- Describe the advantages/disadvantages of controlled environment agriculture and hydroponic crop production in the agricultural production of various food crops

1 Introduction

4hrs

History, definition, scope and significance of aquaculture, comparison of aquaculture with agriculture and commercial fisheries. Aquaculture - Global and Indian Scenario. Methods and classification of aquaculture practices. History; Present status of Hydroponics; Comparison with soil-based culture; Present applications; Developments

II Plant Growth, Nutrition and Disease Management **4hrs**

Plant composition; Essential mineral elements; Root morphology in soil and soilless culture; Nutritional disorders in plants; Disease infestations and control.

III Nutrient Solutions and Media **5hrs**

Inorganic salts (fertilizers); Macronutrients; Micronutrients; Formulating, monitoring, and analyzing; Impurities; Media requirements; Types; Water culture; Gravel culture; Sand culture; Sawdust and bark culture; Rock wool culture; Perlite, Vermiculture and Pumice

IV Plant Culture and Advances **4hrs**

Plant varieties; Planting schedules; Seeding and propagation; Transplanting; Hydroponic greenhouse technology.

AQPT02 Aquariculture **16Hours**

Expected Course Outcome

Upon completion of the course the students will have attained the following

- Expertise in the design and construction of home and public aquaria
- Knowledge on setting and maintaining aquariums in addition to water quality management.
- Knowledge on handling and transport of aquarium fishes for trade and research purposes.
- Gained know-how for aquariums plant management including their mass production techniques.
- Thorough knowledge of marine ornamental fishes, wild stock availability, transport and breeding for commercial gain.

I Introduction **3hrs**

Introduction to aquarium, ornamental fishes and aquarium accessories. World aquarium trade and present status. Design and construction of public freshwater and marine aquaria.

II Aquarium Management **5hrs**

Setting up of aquarium – under gravel filter, pebbles, plants, drift wood, ornamental objects and selection of fishes, Quarantine measures. Aquarium maintenance and water quality. Control of snail and algal growth. Handling, care and transportation of fish. Temperature acclimation, oxygen packing.

III Freshwater Ornamental Fishes

4hrs

Species of ornamental fishes; their taxonomy and biology- Live bearers, Gold fish and koi, Gourami, Barbs and Tetras, angel fish, cichlids. Freshwater plants – their taxonomy and morphology, multiplication of aquarium plants – different methods. Indigenous ornamental fishes of Kerala.

IV Marine Ornamental Fishes

4hrs

Marine ornamental fishes – varieties and their habitat. Method of collection of live fish. Use of anesthetics. Reef aquarium and live rocks. Other ornamental organisms – anemones, worms, lobsters, shrimps, octopus, starfish.

AQPT03 Recirculatory Aquaculture Systems and Design Concepts

18Hours

Expected Course Outcome

Upon completion of the course the students will have attained the following

- Able to list components of aquaponic system and explain their function.
- Able to explain how aquaponic system work
- Able to know different types of plant beds used in aquaponics.
- Able to explain when to introduce fish and plants into the system
- Students will know which water parameters are important in aquaponic system and how they affect living organisms.

I Aquaponics

3hrs

History and Developments in aquaponics around the world; Comparison of food production methods; Benefits of RAS;

II Aquaponics System Design

4hrs

Approaches to System Design; Media filled systems; Flood and drain; NFT; Floating Raft System;

III System Stocking, Component Ratios and Filter

3hrs

System stocking density; Component ratios; Water flow rate; Biofilter design and materials.

IV System Plumbing Requirements

3hrs

Types of materials; Procurement options and cost considerations.

V Advances in Recirculatory Aquaculture Systems

5hrs

RAS design components; RAS system integration; RAS installation; RAS maintenance.

AQPT04 Aquaponic System Installation and Economics of Operation

13Hours

Expected Course Outcome

Upon completion of the course the students will

- Knowledge on basic equations and parameters for designing a simple aquaponic unit
- know basic equipment for constructing a simple aquaponic unit
- be able to explain what is the function of individual components and why are they constructed in a certain way
- be able to use at least some recycled materials when constructing a simple aquaponic unit
- know basic instructions on how to start a new aquaponic venture.

I System Components

3hrs

System configuration; Fish tank; Grow bed; Sump tank; Aeration system; Water Pump.

II System Powering and Back-up

3hrs

Powering considerations; Renewable Vs Non-renewable energy; Power back-up requirements.

III System Maintenance

3hrs

Temperature control; pH control; Water quality and debris control.

IV Economics of Operation

4hrs

Capital investment; Operational costs; Production income from plants and fish; Cost-benefit analysis.

Practical

AQPP01 Aquaponics System Design and Installation

Expected Course Outcome

Upon completion of the course the students will

- Knowledge on basic designing of a simple aquaponic unit
- Understand about various equipments used for constructing a simple aquaponic unit
- Expertise in the design and construction of glass aquaria
- Undemanding identification of fish species and aquarium plants.
- know basic instructions on how to start, operate and manage a new aquaponic venture.

1. Identification of selected fish species
2. Identification of selected Plants
3. Water quality parameters
4. Feeds, feed formulation and feed quality management
5. Glass aquarium construction
6. Model aquaponics system design
7. Aquaponics system integration
8. Prototype system installation
9. Aquaponics system operation and management

RESEARCH DEPARTMENT OF FISHERIES AND AQUACULTURE



ST. ALBERT'S COLLEGE(AUTONOMOUS), ERNAKULAM

CERTIFICATE PROGRAM IN

AQUARIUM KEEPING & ORNAMENTAL FISH REARING

PROGRAM OVERVIEW

The program will be spread over six months with 60hours allotted for Theory Papers and 60hours for practical sessions, summing up to 120hours for the whole program. Total credits for the program will be 7. The theory and practical sessions are spread over 20weeks. Assessment will be based on theory, practical examinations and student presentations.

PROGRAM OBJECTIVES

- ✓ To inculcate importance of ornamental fish farming in relation with entrepreneurship development.
- ✓ To give people knowledge about various techniques of ornamental fish breeding, rearing and it's marketing to make them self-sustainable.
- ✓ To teach techniques of construction of glass aquarium and its maintenance
- ✓ To teach peoples about fish food production and health related problems with ornamental fish.
- ✓ To understand status and the importance of ornamental industry.

PROGRAM OUTCOME

- ✓ Apply information and practical experience in aquarium decoration;
- ✓ Adept in the management, development, breeding and rearing of ornamental fish.
- ✓ The ornamental fish industry is highly lucrative industry and more skilled personnel confident to be an entrepreneur will be one of the most important outcomes.

Total Student Intake : 30

Eligibility : Plus 2 Pass with Biology as a subject of study

Scheme

Course Code	Course	Credits
AQRT01	Ornamental fishes and Plants	1
AQRT02	Construction and maintenance of Aquarium	1
AQRT03	Breeding and larval rearing	1
AQRT04	Fish feed and health management	1
AQRPR01	Fish and Plant identification and fish breeding	1
AQRPR02	Construction of aquarium and maintenance	1
AQRPR03	Water quality parameters, Feed preparation and health management	1

AQRT01: ORNAMENTAL FISHES AND PLANTS

15 hrs

Expected Course Outcome

On completion of the course the students will have gained the following

- Knowledge on different types of aquarium fishes which includes indigenous, exotic and marine ornamental fishes.
- Gained know-how for aquariums plant management including their mass production techniques.
- Understand collection methods and acclimatization.
- Knowledge on handling and transport of aquarium fishes.

I. Indigenous Ornamental Fishes

3hrs

Types ornamental fishes, Collection methods, acclimatization and transportation.

III. Freshwater Exotic Fishes

4hrs

Important freshwater exotic ornamental fishes- Live bearers, Gold fish, Koi carp, Anabantids, Barbs, Tetras, angel fish and cichlids, identification and sexual dimorphism

III. Freshwater Aquarium Plants

4hrs

Freshwater plants –their taxonomy and morphology-rearing and propagation methods

IV. Marine Aquarium Fishes

4hrs

Marine ornamental fishes –varieties and their habitats, major marine ornamental fish resources of India, methods of collection and transportation of fishes

AQRT02 : CONTRUCTION AND MAINTENACE OF AQUARIUM 15 hrs

Expected Course Outcome

Upon completion of the course the students will have attained the following

- Expertise in the design and construction of home and public aquaria
- Knowledge on setting and maintaining aquarium accessories.
- Expertise and gain knowledge in installation of equipments used in marine aquarium.
- Knowledge on decors used to add aesthetic beauty to aquarium.
- Knowledge on selection of species suitable for different aquarium.
- Technically skilled to develop commercial units for ornamental fish production.

I. Construction of Home / Public Aquarium 3 hrs

Construction of Frame less tanks, sealants and gums, gravel / pebbles and other materials / ornamental objects , selection of species.

2. Aquarium Accessories 4 hrs

Different types of aerators, lights, heater, different types of filters, power heads, air pumps and other equipments and its maintenance

3. Setting up of Freshwater Aquarium 4 hrs

Fresh water aquarium setting, aquarium stand, location of aquarium, bed laying, décor arrangements, planting, fixing accessories

4. Setting up of Marine Aquarium 4 hrs

Marine aquarium-FO, FWLR, Reef aquarium, Equipments used in marine aquarium, protein skimmer, maintenance of water quaility.

AQRT03 : BREEDING AND LARVAL REARING 15 hrs

Expected Course Outcome

On completion of the course the students will have gained the following

- In depth knowledge on the breeding of ornamental fishes.
- Gained know how larval rearing, mass production of aquarium fishes and its management.
- Knowledge on broodstock collection and maintenance.
- Understand and expertise indifferent breeding techniques.

1. Brood Stock Collection and Maintenance 4hrs

Collection and transportation of brood stock, anaesthetics used in transportation, Brood stock rearing, quarantine, rearing of brooders, sexual dimorphism, spawning tools

2. Breeding of Selected Fishes

4hrs

Breeding of gold fish, Koi carp, angel fish, gouramis, barbs, cichlids and live bearers, parental care in fishes

3. Mass Production of Aquarium Fishes

4hrs

Preparation of natural ponds for mass production, artificial ponds for mass production, mass production of aquarium plants.

4. Breeding Techniques

3hrs

Induced breeding techniques, use of artificial hormones, use of spawning equipments, mother basket and spawning mops.

AQRT04: FISH FEED AND HEALTH MANAGEMENT

15hrs

Expected Course Outcome

On completion of the course the students will have gained the following

- Sufficient technical know-how for ornamental fish nutrition and disease management.
- Understand nutritional requirements of aquarium fishes.
- Ability to manage feeds and feeding in aquariums.
- Clear understanding of disease management of aquarium fishes.

1. Larval Stages and Nutritional Requirements

3 hrs

Different larval stages, quality requirements and importance of larval feeds.

2. Nutritional Requirement of Fish

4hrs

Nutritional requirements of aquarium fishes. Protein and amino acid requirement, carbohydrate and lipid requirement, essential fatty acids, vitamin and mineral requirements, feed and feed additives, pigments for colour enhancement , chemoattractants.

3. Feeds

4hrs

Different kinds of feeds. Larval feeds and important live feeds. Live feeds and their nutritional value, phytoplankton and zooplanktons used as live feeds, diatoms, microalgae, artemia, infusoria and rotifers. Use of pigments for colour enhancement.

4. Common Fish Diseases and Management

4 hrs

Fresh water ornamental fish diseases- Infectious diseases, Bacterial- Cotton mouth disease, Mycobacteriosis, Dropsy, Fin and tail rot Viral diseases – Lymphocystis, Fungal diseases – Saprolegniasis, Ichthyosporidium protozoan diseases- Costiasis, white spot disease. Non

infectious diseases – Ammonia poisoning, Nitrite poisoning, gas bubble disease, constipation. Common parasites infecting ornamental fishes, Argulus, Lernaea, Flukes, Ergasilus.

PRACTICAL

AQRPR1- CONSTRUCTION OF AQUARIUM AND MAINTENANCE

Expected Course Outcome

On completion of the course the students will have gained the following

- Expertise in the design and construction of home and public aquaria
 - Knowledge on setting and maintaining aquarium accessories.
 - Understand the importance of water quality management in maintaining an aquarium
1. Construction of aquarium.
 2. Identification of common aquarium accessories.
 3. Setting up of freshwater aquarium
 4. Setting up of fresh water aquarium
 5. Water quality maintenance
 6. Setting up of a marine aquarium.

AQRPR2-IDENTIFICATION OF FISHS, PLANTS AND FISH BREEDING

Expected Course Outcome

On completion of the course the students will have gained the following

- Thorough knowledge on ornamental fishes.
 - Understand breeding behavior of different ornamental fishes.
 - Able to identify and gain sufficient particulars about aquarium plants.
 - Expertise in identification of common live bearers and egg layers.
1. Identification of common live bearing fishes.
 2. Identification of common egg layers.
 3. Identification of indigenous ornamental fishes
 4. Identification of aquarium plants
 5. Identification of marine ornamental fishes
 6. Breeding of live bearers.
 7. Breeding of egg layers.
 8. Breeding of clown fishes
 9. Breeding of damsel fishes

AQRPR03: WATER QUALITY PARAMETERS, FEED PREPARATION AND HEALTH MANAGEMENT

Expected Course Outcome

Upon completion of the course the students will

- Expertise in identifying fish diseases and monitoring fish health
- Knowledge on artemia cyst hatching and decapsulation.
- Hand on training in culture of live feeds.

1. Estimation water quality parameters
2. Identification of fish diseases and monitoring fish health
3. Disease treatment and chemicals
4. Artemia cyst hatching
5. Artemia decapsulation
6. Infusoria culture
7. Culture of alternate live feeds
8. Culture of live feeds



St. Albert's College (Autonomous)

Banerji Road, Ernakulam, Kochi - 682018 Kerala, India

Certificate program in **VENTURE MANAGEMENT**

01 JULY, 2021-

03 SEPTEMBER, 2021



Contact Details:

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**ST. ALBERT'S COLLEGE
(AUTONOMOUS),
ERNAKULAM**



**Certificate Course in
Venture Management**

Certificate Course in Venture Management

Department : Department of Business Administration (BBA)

Credit : 3

Hours : 30 (23 Theory and 7 Practical)

Course Objective:

- To develop young BBA aspirants into professional managers who can contribute to the growth of business and industry.
- To nurture entrepreneurial skills among the young generation and make them effective change agents.
- To encourage students to turn into young entrepreneurs. To contribute towards better management practices in the country and the world by offering quality management education.

Evaluation Process

1. Written Examination 2 hrs for 60 marks.
2. Multiple Choice Questions 15 Min for 20 Marks.
3. 1 Practical Real time Problems from industry (20 marks)

SYLLABUS

MODULE I : Business Organization (5 hours)

Nature and scope of Business, Forms of business, Types of organizational structure, Departmentation: Centralization and Decentralization and Business promotion

MODULE II : Opportunities in Business (10 hours)

Identification of business opportunities for small business: Business plan preparation: screening of project ideas; Environment scanning: Institutions supporting small business enterprise, Government regulatory framework for small business.

MODULE III : Financing of Business and Listing I'm Stock Exchanges (3 hours)

Methods of raising finance and listing in stock exchanges

MODULE IV : Computer skills and Digital Marketing (12 hours: 5 theory Class and 7 Practical classes)

Basics of MS. Word, Excel, and Web designing: Marketing product or service through online

Department of Botany

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St Albert's College (Autonomous) Ernakulam, Kerala, India

CERTIFICATE COURSE IN HERBARIUM METHODOLOGY

(Herbarium preparation and Management)

Course type: Short term (Area Elective Course)

OBJECTIVES

- To equip the students for field collection of plants for Herbarium.
- To acquire the skill to preparation a Herbarium of different plant groups.
- To Management of Herbarium

COURSE OUTCOMES

Knowledge and understanding of:

- Herbarium preparation and management of different plant groups
- Scientific methods of plant preservation.

Practical skills:

- Practical Knowledge in plant collection.

- Processing of Herbarium
- Curation of Herbarium

Programme Outcome

To acquire knowledge and scientific methods of plant preservation, management of herbarium, working rules in an international herbaria.

Programme Specific Outcome: By the end of this course, students will be able to prepare Standard Herbarium of different plant groups.

WHOM IS THE COURSE DESIGNED FOR?

This course provides an ideal opportunity for Herbarium Keepers, Herbarium Assistants, Graduates, Post Graduates, Research Scholars in Botany to gain or review skills and experience that will enable them to develop and make use of their own herbaria. Candidates should be well motivated, have a genuine and practical interest in herbarium management, and preferably be employed by a recognized institution.

There are no restrictions or formal qualifications, but English proficiency is desirable including some knowledge of the appropriate technical terms.



St. Albert's College (Autonomous)
Ernakulam, Kerala, India

CERTIFICATE COURSE IN

HERBARIUM METHODOLOGY

(Herbarium Preparation and Management)

Course type: Short term (Area Elective Course)

Credits : 2 Hours : 30



Department of Botany

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ST. ALBERT'S
COLLEGE HERBARIUM

Reg. to INDEX HERBARIORUM
U.S.A

OBJECTIVES

- To equip the students for field collection of plants for herbarium.
- To acquire the skill to prepare a herbarium of different plant groups.
- To manage a herbarium.

COURSE OUTCOMES

Knowledge and understanding of:

- Herbarium preparation and management of different plant groups.
- Scientific methods of plant preservation.

PRACTICAL SKILLS

To acquire practical knowledge:

- In plant collection.
- Processing of herbarium.
- Curation of herbarium.

- By the end of this course, students will be able to prepare standard herbarium of different plant groups, to acquire knowledge and scientific methods of plant preservation, management of herbarium, working rules in an international herbaria.

WHOM IS THE COURSE DESIGNED FOR?

This course provides an ideal opportunity for herbarium keepers, herbarium assistants, graduates, post graduates, research scholars in Botany to gain or review skills and experience that will enable them to develop and make use of their own herbaria. Candidates should be well motivated, have a genuine and practical interest in herbarium management, and preferably be employed by a recognized institution.

To help our student community during this COVID-19 critical time, we're launching this new course for

FREE

Maximum capacity : 10

Tutor

*Mr. Arjun Thomas, M.Sc.,
Herbarium Methodology (B.S.I)
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For more details

Dr. Siju. M. Varghese (HoD)

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Starts
August 2
2021



St. Albert's College (Autonomous) Ernakulam



Department of Botany

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Inauguration of

CERTIFICATE COURSE IN HERBARIUM METHODOLOGY

by

Dr. M. A. Solomon

Principal, St. Albert's College (Autonomous)

August 2, 2021

2:00 PM

Department of Botany



St. Albert's College Herbarium (SAC)

SYLLABUS

HERBARIUM METHODOLOGY

(Herbarium preparation and Management)

Credits: 2 (30hrs)

Theory:

18hrs

1. INTRODUCTION TO HERBARIUM:

2hrs

What is Herbarium? Origin of Herbaria, Objectives of Herbarium. Important Herbaria of the world, Major Herbaria in India, What is Acronym, Types of Herbaria.

2. HERBARIUM AND ITS FUNCTIONS:

1hr

Uses of Herbarium: Basic Function, Research, Education and Training.

3. MATERIALS REQUIRED FOR DEVELOPING A HERBARIUM:

2hrs

Herbarium building, Herbarium storage cabinet, Mobile Storage units (Compactors), Microscopes, Microtomes, Mounting boards, Genus Cover, species cover, Herbarium Boxes etc. Instruments: Microwave oven, Deep Freezer. Chemicals.

4. COLLECTION:

4hrs

What is plant collection, Purpose of plant collection, Field equipments, Source of materials, Kinds of field work, Preparations for collections, General hints and precautions, Collection work, General collection, Numbering, Field note book (Field diary). Different types of collections, Collection of special type of plants: succulents, minute plants, aquatic, marsh plants, Large plants, Collection and processing of Lower groups of plants: Algal, Bryophytes, Pteridophytes, Fungi, Lichen. Liquid preservation, Fixation and fixatives, Special type of preservations. Storage, Liquid nitrogen storage, Freeze drying.

5. PLANT NOMENCLATURE

2hrs

Botanical nomenclature, Principles of Nomenclature, Scientific names, Ranks and position, Genus and species, Author citation, Nomenclature types, Valid Publication of names, Synonyms.

6. PROCESSING OF SPECIMENS

4hrs

Poisoning, Pressing, Drying, Mounting, Gluing & Stitching, Labeling, Identification of plants, Incorporation, Arrangement of specimens, Accessioning, Filing or incorporation.

7. METHODS OF PLANT PRESERVATION

2hrs

Insect's pests, Management, Control, Preservation of specimens: Dry preservation, Liquid preservation, Poisoning, Decontaminating methods.

8. MANAGEMENT OF HERBARIA

1hrs

Herbarium organization, Arrangements of specimens in the Herbarium: Systems of arrangements. Special Collections, Herbarium Loans.

PRACTICALS

12hrs

Plant collection, Herbarium preparation (Algae, Lichen, Bryophytes, Pteridophytes, Gymnosperms, Angiosperms), Genus cover preparation. Arrangement of herbarium. During the course each student shall undertake one day field trip under the guidance of the teacher in charge. A Minimum of 20 herbarium specimens should be presented for valuation agreeing to the parameters of standard herbarium preparation, Which should be accompanied by field notes.

REFERENCE :

- Singh, H.B & Subramaniam. 2008. Field manual on Herbarium techniques, National Institute of Science Communication and Information Resource, New Delhi.
- Manual of Training in Herbarium Methodology. 2013. Botanical Survey of India, Southern regional centre, Coimbatore.
- Janine E. V., Marinda Koekemoer, Lyn Fish, Shirley J. S. & Marthina Mössmer. 2004. Herbarium essential, The Southern African Herbarium User Manual, National Botanical Institute, Pretoria, South Africa.

- **ASSESSMENT METHODS: Written test and course viva**

- **Fee: 1000Rs:**The fee covers the cost of tuition, Field Book, Herbarium sheets, Herbarium preparation items.Field trip not included.



St. Albert's college, Kacheripady, Kochi, Kerala 682018, India

Kochi
Kerala
India

30°C
86°F

2021-08-02(Mon) 02:20(pm)





CPWQM: Certificate Course on Water Quality Management

This course contains modules which focus on employability and skill enhancement

Syllabus

Credits -2

Hours 30

Learning objectives:

- To create awareness on the different sources of water and their pollution
- To provide a knowledge on water quality parameters and their relevance
- To expertise the learners in sampling and analysis of potable water samples
- To familiarize the various treatment methods – conventional and modern methods
- To focus on the recent advances in water quality management.

Expected outcomes:

By the end of this course, the student will be able to

- Know water quality characteristics of water sources including: Groundwater sources, Aquifers, Surface Water sources etc.
- Describe the sampling procedures for different parameters
- Analyze water samples and interpret the results to ensure adequate water quality
- Apply the various treatment methods to required samples to maintain water quality

Theory paper - Water Quality Management for Sustainable Development (15 hours)

Module I- Water Quality Management (3 hours)

Surface water, water quality evaluation and criteria- Ground water - ground water contamination-Principal sources- harmful effects in man, Soil- Groundwater Protection- Source control and regulatory measures, Recent advances in water quality management.

Module II- Water Quality Parameters and its Assessment (6 hours)

Water Sampling and preservation, Sampling methods , Water quality parameters- temperature, pH, EC, Colour, turbidity, total dissolved solids(TDS), acidity, alkalinity, total hardness,chloride, fluoride, sulphate, phosphate, nitrate, DO, BOD, COD, Total Coliforms.

Module III- Water Treatment (6 hours)

Introduction, traditional methods of water treatment, modern treatment methods- separation of suspended matter, Decolourisation of water, Removal of iron and manganese - ion exchange,

oxidation, chlorination, aeration, flotation. Sedimentation, filtration, ion exchange, desalination, reverse osmosis, electrodialysis. Disinfection- boiling and chlorination, UV light disinfection, ozone in water treatment, wastewater reuse.

Practical paper - **Water Quality Analysis**

(15 hours)

Analysis of water quality parameters-temperature, pH, EC, Colour, turbidity, total dissolved solids(TDS), acidity, alkalinity, total hardness, chloride, fluoride, sulphate, phosphate, nitrate, DO, BOD, COD, total coliform.

References:

1. APHA (American Public Health Association, American water works Association and water pollution control federation). (1992), Standard methods for the examination of water and waste water, Am. Publication Health Association, Washington, DC, USA.
2. NEERI, Manual on water and waste water Analysis, National Environment Engineering Research Institute Nagpur, (3402) (1986).
3. WHO, guideline for drinking water quality Geneva (1984).
4. Environmental Protection Agency (EPA). 1990. Fact sheet: drinking water regulations under the Safe Drinking Water Act. Washington, DC: EPA Office of Drinking Water Criteria and Standards Division.
5. American Water Works Association (AWWA). 2001. Reinvesting in drinking water structure: dawn of the replacement era. Denver, CO: AWWA.

Method of Evaluation:

Written Examination – Objective Type Questions

(1 hour - 30 Marks)

Skill Test – Analysis of any one water quality parameter

(30 minutes – 20 marks)

CPCSF21: Certificate Program in Cosmetics and Sanitary Formulations

The Certificate Program in Sanitary and Cosmetic Formulations teaches the essentials of advanced cosmetic science, sanitary formulations and formulation skills to ensure the development of safe, stable and efficacious formulations along with essential quality checks.

Duration

The course will be conducted within a Maximum of six months duration consisting of a total of 30 hours contact/online classes

Expenditure

The expenditure related to the programmes (Resource person fee, Expenditure for Chemicals) will be generated from the students as Course Fee (1500/student)

PROGRAM OUTCOMES

PO1: Classify and define Cosmetics and Cosmeceuticals as per Indian and EU regulations

PO2: Describe the role of ingredients in the formulation of cosmetics

PO3: Explain the fundamentals of soaps and detergents.

PO4: Better understanding of Floor cleaners and Toilet cleaners

PO5 Understand basic tests and how to create some basic formulations

SYLLABUS THEORY (20 HOURS)

Module 1: Soaps and Detergents

History of Soap, Different types of soaps, cleansing action of soap

Detergents, Classification,

Advantageous of detergents over soaps

Environmental effects of detergents

Module 2: Pain Balm, Shampoos, Face cream, lip balm

Composition of Sanitizer, pain balm, Face cream, lip balm

and Shampoos

Different types of shampoos

Module 3: Fabric Stiffener, Dish Washes and Hand Washes

Composition of fabric stiffener, Dish washes different types and its formulations,

Module 4: Toilet Cleaner, Floor Cleaner

Composition of toilet cleaner, Different types,

Different types of floor cleaner

Chlorine based, Solvent based, Phenol based and Pine oil based floor cleaner

Module 5: Testing, Toxicology Effects Of Cosmetics

Basic characterization of Soaps

TFM Value, Acid value, Iodine value, Saponification Value

PRACTICALS ((10 HOURS))

Hands on training for the preparation of the following formulations

- Different types of Soaps and Detergents
- Pain Balm ,Shampoos, Lip balms, Face creams,
- Fabric Stiffener, Dish Washes And Hand Washes
- Toilet Cleaner, Floor Cleaner



St. Albert's College (Autonomous), Ernakulam
Department of Chemistry and Research Centre

CERTIFICATE

This is to certify that Miss. **PARVATHY V.R.** has completed the **Certificate Programme** in *Water Quality Management* conducted by the Department of Chemistry and Research Centre, St. Albert's College (Autonomous), Ernakulam in the academic year 2019-2020.

Dr. Nelson Rodrigues
Principal

Dr. Nify Benny
Coordinator

Dr. Vijay John Gerson
Head of the Department



St. Albert's College (Autonomous)
Banerji Road, Ernakulam, Kochi - 682018 Kerala, India
Department of Commerce and Research Centre

Certificate Programme

ONLINE TRADING AND MUTUAL FUND MANAGEMENT

Duration: 30 Hours

Period: August to October 2021

Head of the Department

Dr. Tia Mathews

Coordination: Mr. Sharan Hilary
Assistant Professor
9895753510

Ms. Neeraja T S
Assistant Professor
9745880035



St. Albert's College (Autonomous), Ernakulam
Department of Commerce
Inauguration of Certificate Programmes
2021-2022

- 1. Certificate Course in Taxation**
- 2. Certificate Course in Computerised Accounting**



Inauguration
CA. Renjith R. Warriar
Chairman, Ernakulam Branch
of SIRC of ICAI
Partner, M/s. Ramachandran
& Associates, Kochi.



On 31st July, 2021
at 11:00 AM

Course Coordinators:

Jeferin Johnson: 9496461683

Aswathy K A: 9645134800

Amrutha Santhosh: 9446487843

Student Coordinators:

Soorya Gayathry V R : 85907 96728

Adithyan K S : 6282362388

CERTIFICATE PROGRAMME DETAILS
ST ALBERT'S COLLEGE (AUTONOMOUS)
ERNAKULAM

DEPARTMENT DETAILS: POST GRADUATE DEPARTMENT OF
COMMERCE AND RESEARCH CENTRE
ST ALBERT'S COLLEGE (AUTONOMOUS)
ERNAKULAM

PROGRAMME TITLE:
CERTIFICATE PROGRAMME IN ONLINE
TRADING AND MUTUAL FUND MANAGEMENT

CERTIFICATE PROGRAMME IN

“ONLINE TRADING AND MUTUAL FUNDMANAGEMENT”

SYLLABUS

Module 1:

The Indian Financial System – Meaning – Features – Components – Role and Functions of SEBI

(2 Hours)

Module 2:

Primary market – Meaning – Functions of New Issue Market – Listing – Methods of floating new issues – Public issue – Bonus issue – Rights issue – Private placement – Buy back of shares - Book Building – Intermediaries in new issue market.

(3 Hours)

Module 3:

Secondary market – Meaning – Role and functions of stock exchanges – Method of trading in stock exchanges – Screen based trading – Online trading - Market players and speculators – Depository system – Dematerialization and Rematerialization – Fundamental base to derivatives - Stock Exchanges in India (BSE , NSE) and other countries. (Including Practicals How to open a demat account, procedure of trading through demat account, list of certificates to be filed to depository system, how to apply for demat and remat online)

(15 Hours)

Module 4:

Mutual Funds – Structure – objectives -Units of a fund, face value & ongoing value - Benefits - SEBI guidelines for setting up of mutual funds – appointment – trustee, Asset Management Company – sponsor

(3 Hours)

Module – 5:

MF (Investors & Distributors Operations – Types of investors – Portfolio process – Dividend declaration – Function of ISC – PAN & KYC – Documentation

(7 Hours)

PROGRAMME OVERVIEW

Capital market is an organized market mechanism for effective and efficient transfer of money capital or financial resources from the investing class to the entrepreneur class in the private and public sectors of the economy.

This certificate programme in capital market course describes how capital markets and mutual fund transactions operate and thoroughly examines the features and characteristics of the wide array of instruments traded in the market. It covers the study of capital market instruments mutual fund operations, elements of capital market, different participants in capital market and mutual funds, and finally trading mechanism and working of stock exchanges.

CREDITS AND HOURS

Total Credit: 2

Total Hours: 30 (THEORY – 20, PRACTICAL – 10)

Hour Structure

- **2 Hours** in a **Week** (**Tuesday** and **Thursday**)
- **Total Hours** in a **Month** – **8**
- **Estimated Course Duration** – **3.5 Months**

SCHEME OF EXAMINATION

The evaluation scheme for the course is mainly based on internal evaluation which comprises of the following:

- | | |
|----------------------------|--------------------------|
| ● Attendance | 5 Marks |
| ● Assignment/ Seminar/viva | 5 Marks |
| ● Intermediate Tests (2) | 10 Marks (5+ 5) |
| ● Written Test Main | 60 Marks |
| ● Practical | 20 Marks |

KEY POINTS

- 75% attendance is compulsory for appearing the main exam
- Course certificates will be issued to students only if they
 - a) Strictly stick on to the programme.
 - b) Attends the Intermediate Exams and the Main Exam without fail.

FEE STRUCTURE

● Registration Fees	Rs 500 per Student
● Remuneration to Teaching Staff	No Remuneration for Internal Staff Rs 500 per Hr for External Staff = 5,000 (500 × 10)
● Lab Fee	Rs 25 per Student per Hr – (25 x 10 x 30) = 7,500
Balance Amount	= 2,500 (15000 – 5000 – 7,500)

(Expecting 30 Students)

PROGRAMME OBJECTIVES

- *To enable the students to acquire knowledge in capital market and mutual funds.*
- *To enable the students to attain required skill in capital market and mutual fund transactions.*
- *To enhance the professional competency of the students in effectively managing the future stock market dealings.*

PROGRAMME OUTCOMES (By the completion of this Course, Participants will be able to)

- *Explain how the capital markets and mutual fund companies operate.*
- *Identify the main participants.*
- *Discuss the impact of capital market functioning over the economy.*
- *Distinguish between the various market instruments.*
- *Evaluate the profitability of shares and mutual funds.*
- *Explain and demonstrate the use of share instruments.*



ST. ALBERT'S COLLEGE (AUTONOMOUS) ERNAKULAM

DEPARTMENT OF COMMERCE

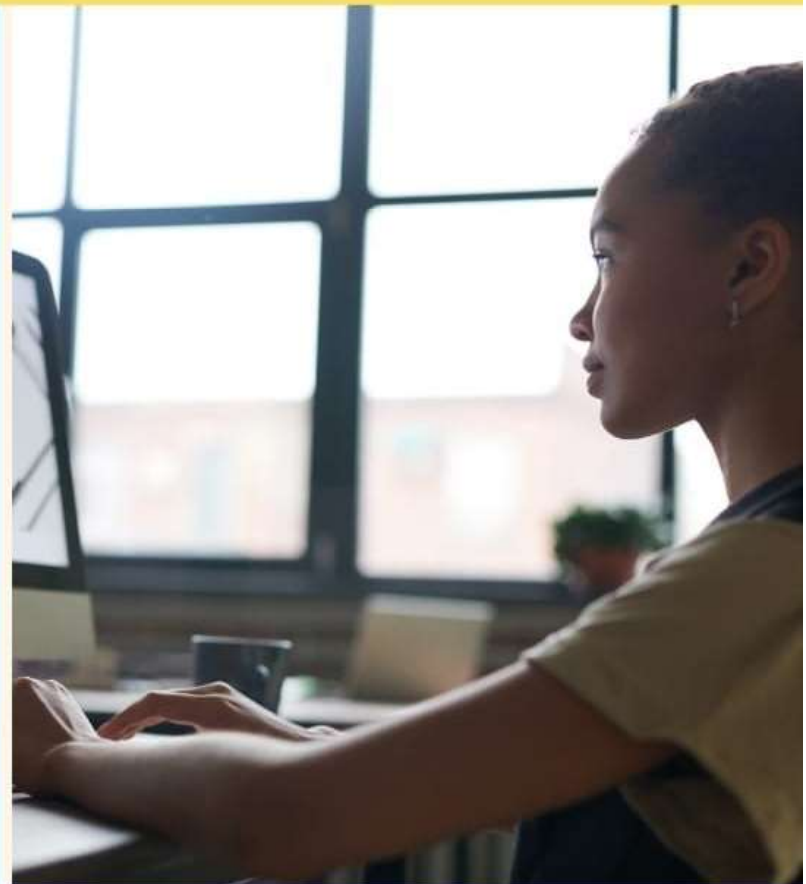
OFFERS

CERTIFICATE COURSE IN
COMPUTERISED ACCOUNTING

CAREER PATH

- ACCOUNTING CLERK
- ACCOUNTS OFFICER
- TALLY OPERATOR
- TALLY ACCOUNTANT
- BOOKKEEPER
- INVESTMENT BANKER
- FINANCIAL TALLY ANALYST etc..

***Enroll the course by filling
the e-form provided***



For more details contact:

Assistant Prof. Amrutha Santhosh: 9446487843

St Alberts College (Autonomous) ,Ernakulam

Certificate Course In Computerised Accounting

SL.NO	REGISTER NO	NAME	COURSE
1	2001330003	ABHINAV UNNIKRISHNAN	B.COM TAX (SF)
2	2001330006	ALLEN ANTONY	B.COM TAX (SF)
3	2001330020	EVELYN V BEJOY	B.COM TAX (SF)
4	2001330037	SREELAKSHMI GIGENDRAN	B.COM TAX (SF)
5	2001330039	T P GOPIKA RADHA	B.COM TAX (SF)
6	2001710005	AMAL MADHU	B.COM COOPERATION (SF)
7	2001710019	JUSTINE ANTONY	B.COM COOPERATION (SF)
8	2001710020	K R GAUTHAM	B.COM COOPERATION (SF)
9	2001710024	MALAVIKA SHIBU	B.COM COOPERATION (SF)
10	2001710025	MARIYA KURIAKOSE	B.COM COOPERATION (SF)
11	2001710032	PAUL MANN GEORGE	B.COM COOPERATION (SF)
12	2001710036	SHIFA MEHRIN	B.COM COOPERATION (SF)
13	2001710037	SREELAKSHMI V	B.COM COOPERATION (SF)
14	2001710039	STEBIN SUFFIN	B.COM COOPERATION (SF)
15	2001710041	SURYANARAYANAN T D	B.COM COOPERATION (SF)
16	2001710042	VARUN BABU C B	B.COM COOPERATION (SF)
17	2001710045	VISHNU SANKAR M	B.COM COOPERATION (SF)

Certificate Course in Computerised Accounting

SYLLABUS

Credit : 3

Hours : 45 (21 Theory and 24 lab)

Course Objective :

To make an accountant with strong conceptual knowledge in accounting and its practical side.

Learning Outcomes :

1. To equip the students to meet the demands of the industry by mastering them with industry sought after computerized accounting packages.
2. To expose the students to computer applications in the field of accounting.
3. To develop practical skills in the application of Tally Accounting Package.

Module 1: Accounting - Basic accounting principles- concepts- conventions – standards- accounting equation- golden rules – journal – Ledger- profit & loss a/c- balance sheet

Computerized accounting – meaning-merits & demerits- Uses- differences between computerized accounting & manual accounting. (8 hours)

Module 2: Company Information: - company creation- select a company- alter company- shut company- Delete Company

Ledger groups, Create Ledger, Journal entries, F11 features (debit note & credit note, sales order, purchase order) (10 hours)

Module 3 : Inventory, F11 features, Pure Inventory Vouchers, F11 features, Godown management, Goods and Services Tax (GST),

Manufacturing journal, F12 Features, Cost Centre & Cost Category. (12 Hours)

Module 4 : Payroll, Point Of sale (POS), Physical Stock, Bank Reconciliation, Job costing (Theory), Common Problem(Including stock, pure inventory, Godown, GST, cost centre & cost category) (15 Hours)



St. Albert's College (Autonomous) Ernakulam

Post Graduate Department of Economics

Certificate Course on Entrepreneurship Development



**Inaugural Address by Dr. Rosalind Gonzaga
Vice Principal of St. Albert's College (Autonomous)**

Date : 8 June 2021

Time : 2 P.M.

Venue : Google Meet

<https://meet.google.com/ado-bnpgk-pso>

Course Coordinator : Dr. Neeraja James

Head of the Department : Dr. Jincy Joseph K



AMDG

ST. ALBERT'S COLLEGE (Autonomous)

ERNAKULAM

**CERTIFICATE PROGRAM IN
ENTREPRENEURSHIP DEVELOPMENT**

ADD ON COURSE for Undergraduate Program

30 Hours Duration – credits: 2

CERTIFICATE PROGRAM IN ENTREPRENEURSHIP DEVELOPMENT

SYLLABUS

Objectives of the course

- Provide the insight into the economics of entrepreneurship
- Prepare a ground where the students view entrepreneurship as a desirable and feasible career option.
- Equip the students to prepare feasible entrepreneurial project plans.

Module I

Entrepreneurship – entrepreneurship development program – project identification and formulation – feasibility analysis – network analysis – project life cycle – project report and appraisal

(9 hours)

Module II

Micro, Small and Medium (MSME) sector – cluster approach – management levels and functions – quality circle – innovation -

(6 hours)

Module III

Internship / practical training /Industrial visit

(15 hours)

Classes: 30 hours

Date	Day	Session Incharge	Module	Topics	Class hours	Total Hours
08/06/2021	Tuesday	Dr. Neeraja James	I	Entrepreneurship	1	
11/06/2021	Friday	Dr. Jincy Joseph	I	Entrepreneurship Development Program	1	
15/06/2021	Tuesday	Prof. Francis M C	I	Project Identification and Formulation	1	
18/06/2021	Friday	Prof. Linda George	I	"	1	
22/06/2021	Tuesday	Dr. Neeraja James	I	Feasibility Analysis	1	
25/06/2021	Friday	Dr. Jincy Joseph	I	Network Analysis	1	
29/06/2021	Tuesday	Prof. Francis M C	I	Project Life Cycle	1	
02/07/2021	Friday	Prof. Linda George	I	Project Report and Appraisal	1	
06/07/2021	Tuesday	Dr. Neeraja James	I	"	1	Module I = 9 Hours
09/07/2021	Friday	Dr. Neeraja James		Interactive Session	1	
13/07/2021	Tuesday	Prof. Francis M C	II	Micro, Small and Medium (MSME) sector	1	
16/07/2021	Friday	Prof. Linda George		"	1	
23/07/2021	Friday	Dr. Neeraja James	II	Cluster Approach	1	
27/07/2021	Tuesday	Dr. Jincy Joseph	II	Management levels and functions	1	
30/07/2021	Friday	Prof. Francis M C	II	Quality Circle	1	
03/08/2021	Tuesday	Prof. Linda George	II	Innovation	1	Module II= 6 Hours
06/08/2021	Friday	Dr. Neeraja James		Interactive Session	1	
10/08/2021	Tuesday	Dr. Neeraja James	III	Internship/ Practical Training/ Industrial Visit		Module III- 15 Hours
13/08/2021	Friday			External Talk	1	
03/09/2021	Friday	Dr. Neeraja James		Interactive Session	1	
10/09/2021	Friday			Online Exam		



St. Albert's College (Autonomous), Ernakulam

DEPARTMENT OF ENGLISH

TEA (THE ENGLISH ASSOCIATION)



INTRODUCTION TO MEDIA STUDIES

Expert Talk

SEP 11, 2021 | @ 10 AM | VIA GOOGLE MEET



DR. APPU JACOB
JOHN

*Assistant
Professor,
Institute of
English,
University of
Kerala*



FACULTY COORDINATOR

DR. MARY SAPNA MIRANDA
7034786125

STUDENT COORDINATOR

LYDHIYA MARY
7994212302



St. Albert's College (Autonomous), Ernakulam

DEPARTMENT OF ENGLISH

TEA (The English Association)

Expert talk

on

[Media Ethics]



Dr. Monali Chatterjee

Assistant Professor,
Institute of Management,
Nirma University,
Ahmedabad

14:30



25/09/2021

 teaatalberts

Dr. Mary Sapna Miranda
7034786125

Coordinators
<- Faculty | Student ->

Anila Mariya
7907413744

ST. ALBERT'S COLLEGE (AUTONOMOUS)

ERNAKULAM

CERTIFICATE COURSE IN MEDIA STUDIES

Offered by the Department of English (Aided)

1. Name of the Program
CERTIFICATE IN MEDIA STUDIES
2. Level of the program
Undergraduate
3. Course Outcome

The following are the expected learner-outcomes of this course:

- The learners develop media literacy and learn to analyze, interpret, and evaluate/judge print and visual news items and their persuasive role in a democratic polity.
- They master the basic skills of reporting, writing and presenting for the media - print and broadcast journalism and apply media writing. They learn the theory and praxis of media studies.
- They grasp proficiency in cohesion, comprehensiveness, data interpretation, attractive presentation, style and information transfer.
- They develop an ethical and judicious outlook towards media and become ethically discerning consumer and creator of media content.

4. Trade / Sector Council

Media and Academics

5. Detailed Syllabus

MODULE I: The Rise of Mass Media

(6 hours)

- a. Introduction – Mass Communication - Theories of mass communication – Different types of Mass Media – Freedom versus Control – Need for social control
- b. The Print Media – Different types – Editorials - Feature articles - Interviews - Letters to the editor

Lead: datelines - - By lines - Credit line - Headlines - Nut graph - Reporting - News reporting - Specialized reporting - Business reports - Sports reports - Obituary writing - Analyzing newspaper articles.

c. Editing: - Proofreading - Freelancing.

MODULE II - Magazines and Periodicals (6 hours)

a. Nature of periodical articles - feature writing and article writing - Angle, structure and organization - Types of articles included in magazines - Writing for magazines - Action, angle and anecdote.

b. Composing magazine covers - Planning the contents of a magazine - Planning a photo shootout - Planning and writing a true-life story.

MODULE III- Electronic and Digital Media (6 hours)

a. Radio - Understanding the language of radio presenters - Radio skills - Understanding the process of broadcasting - Broadcast writing - Giving post-production feedback - Radio jockeying.

b. Visual media - Television skills - Understanding the pre-production process - Writing for the media - Interviews - Reviews - Profiles - Travel writing - Scripting for TV programmes - Preparing a film schedule - Editing a TV Documentary – Anchoring - Presentation for the Media - Presenting with and without script.

c. Digital Media - E-books, E-magazines, E-mail - Blog - Planning and writing a Blog - Web page Designing - Creating a pod cast - Technical writing

MODULE IV – Advertising (6 Hours)

a. Introduction to advertising - Advertisements in different media - Classified ads - Texts – Captions - Logo design - Storyboard of advertisements

b. Copy editing Process - Guiding principles of editing - Selling your services to a potential client - Creating print ad, Screen ad - Presenting a finished ad

MODULE V -- Media Ethics (6 hours)

a. Introduction to media ethics - Guiding principles - Accuracy - Reliable Sources - Avoiding Bias, Distortions, Conflicts of Interest - Information-gathering methods - honesty and justice

b. TRP battles, sensationalism and propaganda - Leveraging the media for common social good - Engagement at the individual, management and the corporate levels - Media Social Responsibility

c. Copyright regulations and framework - OER Commons - legal dimensions - false/fake news - identifying fake news - reverse searches – sites



**ST. ALBERT'S COLLEGE (AUTONOMOUS)
ERNAKULAM**

DEPARTMENT OF PHYSICS

CERTIFICATE PROGRAM IN

LATEX

Who is this for?

- Students
- Teachers
- Professionals

What will you learn?

- Familiarization with LATEX
- Write articles, presentations and even letters using LATEX

Duration of Course: 30 hrs

From: 15th Jan 2021 to 30th March 2021

Course Fee: Rs. 500/-

Certificates will be provided to those who register and score greater than 40% in the final exam

For more details, contact: physics@alberts.edu.in

Department of Physics St. Albert's College (Autonomous), Ernakulam

Syllabus For Certificate Course in L^AT_EX

Course Title	:	Introduction to L ^A T _E X
Credit	:	1
Lecture Hours	:	30
Lab Hours	:	0 (No Separate Lab Sessions)
Batch	:	Maximum 15 Students per Batch (Minimum 5)
Course Fee	:	Rs. 1000 (Including Final examination and Certification)

Prerequisites

Basic computer skills i.e. familiarity with using a keyboard and mouse. No prior knowledge of L^AT_EX will be assumed but some familiarity with Windows or Linux will be useful for following the demonstrations.

Objectives

L^AT_EX is a powerful document description language built on top of TeX. It is available on Unix, Windows and Macintoshes. It can be used for the presentation of plain text (including accented characters and letters outside the English alphabet), the typesetting of mathematics, the generation of tables, and producing simple diagrams. It is particularly suited for the writing of theses, papers and technical documents. This course is intended to provide the basic knowledge of the most important commands of L^AT_EX .

Course Objectives and Outcomes

Upon successful completion of the class a student will be able to:

- successfully install L^AT_EX and its related components on a home/personal computer;
- use L^AT_EX and various templates acquired from the course to compose Mathematical documents, presentations, and reports;
- access CTAN and other resources to obtain additional L^AT_EX packages.

Instructional Strategies

- Lecture
- Group work
- In class lab activities

Assessment Strategies

Addressing each course outcome:

- Successfully install \LaTeX and its related components on a home/personal computer: students are required to submit a \LaTeX document with its output. This establishes successful installation.
- Use \LaTeX and various templates acquired from the course to compose Mathematical documents, presentations, and reports: Submitted weekly assignments are used to gauge this outcome.
- Access various resources, such as <http://ctan.org>, to obtain additional \LaTeX packages: At least one assignment requires students to use online resources; explicit guidance is purposely omitted from that part of the lesson so that students will need to research and use these resources first hand.

Syllabus and Course Plan

Hour	Topic	Mode of Teaching	Evaluation Method
1	Introduction- What is \LaTeX - Installation- Installing \LaTeX and related software, and an integrated development environment- \LaTeX Source File- Document Classes and Options- Using Packages -Commands	Lecture, Real time Demonstration.	Offline /Online Assignment
2	Creating and generating a Document-Document Class Declaration-Document Class Options- \LaTeX Environments-The Document Environment. -Titling-Abstract and Summaries	Lecture, Real time Demonstration	Offline /Online Assignment
3	Formatting Text – Font styles and sizes-Superscripts and subscripts- Symbols and Special characters- Ordinary Paragraph-paragraph alignment- Indents-line spacing- Sections	Lecture, Real time Demonstration	Offline /Online Assignment
5	Lists-Itemized list-Enumerated Lists-Descriptive Lists-Inline Lists-Nested Lists- Customising Lists.-Footnots- Margin Notes	Lecture, Real time Demonstration	Offline /Online Assignment
6	Floats- Tables-Tabular Matter-Tabular environment for text alignment	Lecture, Real time Demonstration	Offline /Online Assignment

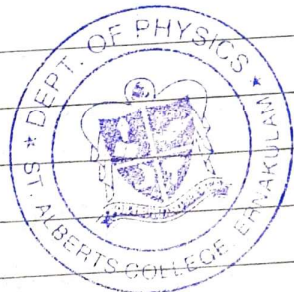
8	The Picture Environment- Picture objects-lines-arrows- stacks-Circles-Ovals-rounded corners-Grids- Repeated Pat- terns	Lecture, Real time Demonstration	Offline /Online As- signment
10	The Graphicx package- im- age formats-Including graph- ics command and options- boarders- graphics storage- Figure environment-Captions	Lecture, Real time Demonstration	Offline /Online As- signment
11	Page Layout- Page dimen- sions – Geometry package- Page orientation- Page styles- Fancyhdr package-different options-Multicolumn packages.	Lecture, Real time Demonstration	Offline /Online As- signment
13	Math environment-Inline and dis- played formulas-Symbols- Greek letters- Set letters-fractions- roots- brackets-arrays-Changing text size of equations.	Lecture, Real time Demonstration	Offline /Online As- signment
16	AMS math package- text and dots in formulas-Different for- mula displaying styles-centred formula(s) with and without label-Splitting long formulas- Ma- trix -Integrals and Sums	Lecture, Real time Demonstration	Offline /Online As- signment
19	Colour package-Labels and Cross referencing-The hyperref package-Indexing (Basic Ideas)	Lecture, Real time Demonstration	Offline /Online As- signment
22	Packages- package list- Installing extra packages-	Lecture, Real time Demonstration	Offline /Online As- signment
24	Preparing a Journal paper using elsarticle template	Demonstration-HOT	Offline /Online As- signment
26	Preparing a multi chapter thesis	Using any freely available thesis style- Demonstration and HOT	Offline /Online As- signment
30	Examination	–	Multiple choice exam- ination - 20Minutes L ^A T _E X Document preparation (Online using Overleaf)- 40 Minutes

Instructor

Dr. Louie Frobel P G
Assistant Professor, Department of Physics
louiefrobel@alberts.edu.in

Acad year 2020 - 21

No	Name	Dept.	class no	Fee paid Y/N
1	LAYA LALITHAKUMAR	PHYSICS	3003	YES
2	ANU M.S.	"	3006	"
3	AITHIRA K MENON	"	3008	"
4	MEGHA SUNIL	"	3012	"
5	ANEENA ELIZABETH GEORGE	"	3027	"
6	CHINNU SABU	"	3028	"
7	ANTONY DINIL	"	3029	"
8	ANGEL MARY ANDREWS	"	3030	"
9	ASHIK LAL KRISHNA	"	3033	"
10	SREYA BABU	"	3034	"
11	NIKHIL VIJAY A.V.	"	3035	"
12	SONA K SUNIL	"	3037	"
13	AJAY SURENDRAN	"	3039	"
14	ALFA MANAF	"	3044	"
15	ANFY FRANCIS	"	3058	"








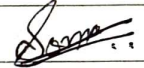

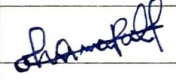




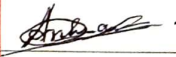


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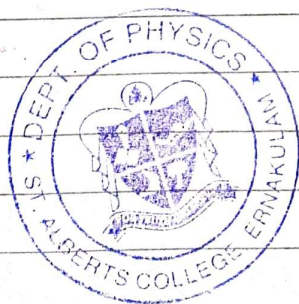
Dr. LOUIE FROBEL P.G
ASSISTANT PROFESSOR & HEAD
DEPARTMENT OF PHYSICS
ST. ALBERT'S COLLEGE (AUTONOMOUS)
ERNAKULAM

Certificate Course in Latex.

Certificate Issue Register

(2020 Admn.)

S/No	Name of Student	Class No	Date	Sign
1	ALFA MANAF	3044	12/4	
2	ANU M S	3006	12/04	
3	LAYA LALITHA KUMAR	3003	12/04	
4	ANFY FRANCIS	3058	12/04	
5	MEGHA SUNIL	3012	12/04	
6	SONA K SUNIL	3037	13/04	
7	ATHIRA K MENON	3008	13/04	
8	CHINNU SABU	3028	13/04	
9	NIKHIL VIJAY A V	3035	13/04	
10	ANGENA ELIZABETH GEORGE	3027	15/04	
11	AJAY SURENDRAN	3039	15/04	
12	SREYA BABU	3034	15/04	
13	ANTONY DINIL	3029	16/04	
14	ANGEL MARY ANDREWS	3030	16/04	
15	ASHIK LAL KRISHNA	3033	16/04	





Dr. LOUIE FROBEL P.G
ASSISTANT PROFESSOR & HEAD
DEPARTMENT OF PHYSICS
ST. ALBERT'S COLLEGE (AUTONOMOUS)
ERNAKULAM



ST. ALBERT'S COLLEGE (AUTONOMOUS) ERNAKULAM

DEPARTMENT OF RENEWABLE ENERGY

CERTIFICATE PROGRAMME IN

ENTREPRENEURSHIP IN SOLAR PHOTOVOLTAIC SYSTEM

Organized By

Department of Renewable Energy

ST.ALBERT'S COLLEGE (AUTONOMOUS) ERNAKULAM

**Starts on
24 - 07 - 2021**

**HOD: Prof. Milna MJ
Co-ordinators
Prof. Greeshma S
Prof. Neethu Varghese**

**Total Credits: 2
Total Hours: 30 Hrs
(Theory-18 Hrs Practical-12 Hrs)
Course Duration: 3 Months**

REGISTER SOON!!!!

Dept. of Renewable Energy is happy to inform you that we are starting the first batch of our certificate course "Entrepreneurship in Solar Photovoltaic System" on 11 AUGUST 2021.

This course will teach participants how solar photovoltaic systems and backup (inverter) systems work, and how systems are installed.

This program covers installation, safety practices, system maintenance, and solar entrepreneurship.

Course include lectures by successful industrialist and professors to inspire students.



VISIT US

Dept. of Renewable Energy
St. Albert's College (Autonomous)
Ernakulam



TALK TO US

Asst. Professor
Neethu Varghese: 9746290778
Greeshma .S: 7994921550



EMAIL

re@alberts.edu.in

ENTREPRENEURSHIP IN SOLAR PHOTOVOLTAIC SYSTEM



ABOUT COURSE:

- Interested Students can register through the given google form .
- <https://forms.gle/UcTqYncFEGX5qjDn8>
- No Application Fees.
- First 20 registration will be preferred for first batch.
- Course include 3 modules .
- Course will be of 30 hours duration of which 18 hours of lecture sessions AND 12 hours of practical sessions.
- After each module participants has to submit online assignments In Google Class room.
- Certificate will be Issued only If the participants pass the final exam and need 100% attendance for the course.



SYLLABUS:



Module 1:

(4 hrs)

Solar Cells Fundamentals Basics of solar PV system – assessment of quality of solar module – Identifying the key technical parameters of solar module – components of PV system – Identification of market price of components.

Module 2:

(8 hrs)

Policies and Estimation Identification of policy, regulation and procedures for solar rooftop sectors – Identification of optimum location of Installation – estimation of capacity of solar PV power plant – decide on battery backup – prepare an estimate cost of solar project – cost benefit analysis for a rooftop solar PV- Interpret the bill of material – prepare a draft project activity Implementation plan and preparation of maintenance schedule.

Module 3:

(6 hrs)

Entrepreneurship Skills Identify the characteristics of entrepreneur – good etiquette and manners required to communicate with the client – the Importance of time management – preparation of workable presentation – marketing and business development – Identifying the challenges and risk for a new entrepreneur – health and safety standards and regulations for solar PV Installation – fund raising methods.





ST. ALBERT'S COLLEGE (AUTONOMOUS) ERNAKULAM

DEPARTMENT OF RENEWABLE ENERGY
INAUGURATION OF CERTIFICATE PROGRAMME
2021-2022

ENTREPRENEURSHIP IN SOLAR PHOTOVOLTAIC SYSTEM

Felicitation



Dr. Rosalind Gonzaga

Vice Principal
St. Albert's College
(Autonomous)
Ernakulam

Inauguration



Pearl Antonette Mendez

Assistant Professor
Dept of Electronics
Albertian Institute of Science & Technology
Kochi, Kerala



**On 24th July 2021
At 11am**

Co-ordinators :

**Prof. Greeshma S
Contact : 85472 40341**

**Prof. Neethu Varghese
Contact : 97462 90778**

Entrepreneurship in Solar Photovoltaic System

Total : 30 hours

Credit : 2

Module 1

(4 hrs)

Solar Cells Fundamentals

Basics of solar PV system – assessment of quality of solar module – identifying the key technical parameters of solar module – components of PV system – identification of market price of components.

Module 2

(8 hrs)

Policies and Estimation

Identification of policy, regulation and procedures for solar rooftop sectors – identification of optimum location of installation – estimation of capacity of solar PV power plant – decide on battery backup – prepare an estimate cost of solar project – cost benefit analysis for a rooftop solar PV- interpret the bill of material – prepare a draft project activity implementation plan and preparation of maintenance schedule.

Module 3

(6 hrs)

Entrepreneurship Skills

Identify the characteristics of entrepreneur – good etiquette and manners required to communicate with the client – the importance of time management – preparation of workable presentation – marketing and business development – identifying the challenges and risk for a new entrepreneur – health and safety standards and regulations for solar PV installation – fund raising methods.

Practical

Industrial Training – 8 hours (2 days)

Familiarization of solar PV and grid tied system – 4 hours



Why R?
Free & Open Source Tool

Gateway to Lucrative Career

Latest Cutting Edge
Technology

Language for Statistics and
Data Science

Used in Almost all Industries

30-Hour Certificate Programme

INTRODUCTION TO **R PROGRAMMING**

Batch Starting on August 30, 2021

Offered by the
Department of Computer Science

Course Coordinators

Prof. Bruce Mathew, Head-in-charge Mob: 9447209932 | Prof. Sreelakshmi H Mob: 8129369122

INTRODUCTION TO R PROGRAMMING

Type of Course	Certificate Programme
Credits	2
Course Duration	30 Hours
Modules	4
Organizing Department	Department of Software Development

COURSE OUTCOME

Upon Successful completion of the certificate program, the learner will be able to

1. **Get familiarized with the basic commands of R programing**
2. **Recognize the use of R programming in various decision-making Tasks**
3. **Make inference from the available data using the concepts of R**

COURSE OUTLINE

Any scientific task without the knowledge of software is difficult to imagine and complete in the current scenario. R is a free software that is capable of handling mathematical and statistical manipulations. It has its own programming language as well as built-in functions to perform any specialized task. The intend to learn the basics of R software in this course.

PREREQUISITES

Mathematics background up to class X is essential. Preliminary knowledge of statistics will be helpful but not necessarily mandatory.

INTENDED AUDIENCE

Degree Students of Science, Engineering and Humanities.

Working professionals in the area of analytics and any others involved in programming, mathematical and statistical computations, simulations and data analysis can join for the course.

COURSE PLAN

Module I

8 hours

Introduction to R, The CRAN, Installing R from CRAN, Console and Editor Panes, Comments, Working Directories, R Packages, Installing and Loading R Packages, Workspaces, Script, RStudio, Coding Conventions, Math and Equation References.

Module II

8 Hours

Decision making-if statement, if-else statement, switch statement, Looping- repeat loop, while loop, for loop, break and next statements, Functions-Built-in functions and user-defined functions. Exploratory data analysis- Measures of central tendency & measures of dispersion

Module III

7 hours

Basic of visualization, Pie chart, Bar chart and Histogram, Box plot, Scatter plot, Understanding ggplot2 package. Correlation, introduction to family of regression & simple linear regression, Multiple linear regression

Module IV

7 Hours

Data frame, data reshaping, transpose of a matrix, joining rows and columns, merging of data frames, melting and casting, Import of external data in various file formats, Compilation of data

References

1. *Hands-On Programming with R, Golemung & Garrett*
2. *Beginning R : The Statistical Programming language, Mark Gardener*
3. *The Official CRAN Archive website.*

ASSESSMENT

Quizzes, Assignments and Written Examinations.

Upon successful completion of the programme, certificate will be issued by the Institution.



St. Albert's College (Autonomous)

Banerji Road, Ernakulam, Kochi – 682018 Kerala, India

CERTIFICATE

This is to certify that Catherin Christy M J
of St. Albert's College
has successfully completed the Certificate Programme in Introduction to R
for 30 hours duration
from August to October 2021, offered by the Department of Software Development,
St. Albert's College (Autonomous).

Head - in - Charge

Principal



St. Albert's College (Autonomous)

Banerji Road, Ernakulam, Kochi – 682018 Kerala, India

CERTIFICATE

This is to certify that Theja Theres Tomy
of St. Albert's College
has successfully completed the Certificate Programme in Introduction to R
for 30 hours duration
from August to October 2021, offered by the Department of Software Development,
St. Albert's College (Autonomous).

Head - in - Charge

Principal



**St. Albert's College (Autonomous)
Ernakulam**

Department Of Zoology



**Certificate Program in
BASIC MICROBIAL TECHNIQUES**

(For Both UG & PG Science Students)



Inauguration
By

Prof. K J Benny

Former Head of the Department
&
Controller of Examinations
St. Albert's College (Autonomous)
Ernakulam



**On 27/07/2021
@ 2.00 PM**

Via Google Meet



**Student Coordinator
Athulya Devassy
6282156519**

**Faculty Coordinator
Dr. Deepthi Augustine
9496428328**

CERTIFICATE PROGRAMME IN BASIC MICROBIAL TECHNIQUES: B. Sc. ZOOLOGY

Course Information

Credit-2

Duration- 30 hrs- 1 month

Eligibility: Students undergoing UG or PG in any discipline.

Course Evaluation

Written test - 40 Marks

Practical test - 40 Marks

Viva-voce - 20 Marks

PO No	PROGRAMME OUTCOMES <i>Upon completion of the the Certificate programme in Basic microbial techniques , the graduate will be able to</i>
PO-1	Meet the manpower requirements of food, pharmaceutical and health care industry with enhanced skills in the techniques.
PO-2	Inculcate basic tools & techniques in scientific research,
PO-3	Motivated for higher studies and future research

PSO No.	PROGRAMME SPECIFIC OUTCOMES <i>Upon completion of this course, the student would</i>
PSO-1	Instill an awareness on the significance of diverse microorganisms
PSO-2	Acquire skills in aseptic techniques & handling microbes
PSO-3	Perform various staining techniques and differentiate microbes
PSO-4	Gain competency in academia, industry and entrepreneurial skills

Cognitive Level:

E – Evaluating

An – Analysing

Ap – Applying

Course Title	Basic Microbial techniques		
CO No.	Course Outcomes	PSOs Addressed	Cognitive Level
CO-1	Use aseptic techniques in handling microbes.	PSO-2	Ap
CO-2	Isolate and identify major groups of microorganisms.	PSO-1,PSO-3	An
CO-3	Differentiate bacteria based on staining techniques.	PSO-3	An, Ap
CO-4	Estimate and analyse the quality of environmental samples	PSO-2,PSO-3, PSO 4	An, Ap, E
CO-5	Effectively handle microbiological instruments	PSO-2	Ap

SYLLABUS

Introduction – Brief History of microbiology

Module I Introduction

2 hrs.

Prokaryotic and eukaryotic cells
 Branches of microbiology, major groups of microorganisms,
 Economic importance of microorganisms.

Module II Microbiological techniques

5 hrs

Laboratory equipment and apparatus,
 Sterilization -physical methods, chemical- alcohol, phenol, dyes, halogens,
 Serial dilution
 Preparation of culture media,
 Culture techniques- Liquid, semisolid, solid media
 Determination of population of microorganisms.
 Microscopy, Micrometer (ocular and stage), Haemocytometer.

Module III Identification techniques

8 Hrs

Bacteria –Morphology, growth and reproduction,
 Virus–Morphology, growth and reproduction,
 Sampling and quantification of microorganisms in air, soil and water.

Isolation of bacteria [Serial dilution, Streak plate, spread plate, pour plate] Identification of microorganisms from the habitats [simple staining, differential staining, acid fast staining, capsule staining, spore staining and motility]

Observation of morphology - shape and arrangement of cells.

Methods of inoculation of different microbes in selective media.

Practical

15 hrs

1. Media Preparation
2. Sterilization Wet (Autoclave) and Dry method (Hot air oven)
3. Serial Dilution, Plating (pour), Membrane Filtration, Plating
4. Culture Purification (streak), Preservation (slant)
5. Microbial Identification – Staining Methods
6. Enumeration - Direct count, Colony count, Spectrophotometric method