



ST. THOMAS COLLEGE, RANNI

SYLLABUS OF CERTIFICATE /ADD ON/VALUE ADDED COURSES.

ACADEMIC YEAR - 2019-2020

Sl no	Department	Name of the course	Page No
1.	English	English Language Teaching	1-4
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ASSESSMENT PERIOD 2017-2022

ST.THOMAS COLLEGE, RANNI

(Affiliated to Mahatma Gandhi University)

DEPARTMENT OF ENGLISH



Scheme and Syllabus of

Certificate Course

2019-2020

ENGLISH LANGUAGE TEACHING

BOARD OF STUDIES (BoS)

Course Co-ordinator- Smt.AneetaChinnu Joseph

Members- Dr. SnehaElcy Jacob (Head, Department of English)

Smt. Elena Sajan (Asst. Prof., Department of English)

Smt. AneetaChinnu Joseph (Asst. Prof., Department of English)

INTRODUCTION

Certificate course in ENGLISH LANGUAGE TEACHING has been introduced to deal with the application aspect of the English language with more focus on communication skill. This course aims to develop speaking and writing proficiency in English language

AIM OF THE PROGRAMME

To develop students' ability to use English accurately and fluently

ELIGIBILITY FOR ADMISSIONS

All first year UG students of the Department of English can apply

MEDIUM OF INSTRUCTION: English.

DURATION OF THE COURSE:

The duration of the course is 30 hours (excluding the hours earmarked for assignment, practice sessions and final examination) and is offered outside of the usual class hours.

COURSE OBJECTIVES

1. To develop four skills namely Listening, Reading, Writing and Speaking
2. To listen and reduce information to a point form
3. To read and expand from points to paragraphs
4. To predict, comprehend, infer and synthesize information
5. To question, probe and arrive at information through discussions, dialogues and interviews

COURSE OUTCOMES

- Students acquire the ability to use English correctly

- Students develop their ability to use English effectively especially during interviews, telephone conversations and other academic, social and professional situations

EVALUATION

- Evaluation is done for a total mark of 100

Components of Evaluation	Marks
Attendance	20
Assignment	20
Practice session	35
Written examination	25 (duration 30 minutes)
Total	100

Pattern of questions Paper

Sl No.	Pattern	Marks	No. of questions	Total marks
1	MCQ	1	25	25
Total				25

- A committee consisting of the Head of the Department, the course coordinator and other faculty members nominated by the Head of the Department shall monitor the evaluation process
- The list of students along with the marks and the grades earned may be forwarded to the Principal/Chief Superintendent of Examinations.
- The Dept. course coordinator is responsible for maintaining and processing the record with regard to the course, assessment marks and results.
- Certificates will be issued to those students with 75% attendance, timely submission of assignment and a minimum of 40% marks in the qualifying examination.

Grading Pattern

Grades are given on a 4-point scale based on the total percentage of marks secured in the written examination and other components of assessment as given below: -

Percentage of marks	Grade
90 and above	A Excellent
75 to below 90	B Very good
55 to below 75	C good
40 to below 55	D Average
Below 40	Failed

Unit 1: Introduction to English Language Teaching (5 Hours)

- 1.1 Acquisition and Learning
- 1.2 Theories in ELT (Behaviourism, Cognitivism and Humanism)
- 1.3 Approaches of Learning
- 1.4 Levels of Teaching
- 1.5 Teacher Centred Teaching Methods
- 1.6 Mixed Group Teaching Methods
- 1.7 Learner Centred Teaching Methods
- 1.8 Principles of Learning and Learning methods
- 1.9 Learner Characteristics
- 1.10 Evaluation Systems
- 1.11 Curriculum, Syllabus and Curriculum Framework
- 1.12 Teaching Aptitude

Unit 2: Drafting Lesson Plans (5 Hours)

- 2.1 The need for using lesson plans
- 2.2 Selection of texts and activities
- 2.3 Lesson plan drafting

Unit 3: Task Designing (15 Hours)

- 3.1 Choosing Appropriate tasks for the enhancement of listening, speaking, writing and reading skills
- 3.2 Preparation of Tasks to teach Four Language Skills

Unit 4: Practical Application Tasks (15 Hours)

- 4.1 Peer group teaching
- 4.2 Teaching at a Community School

Evaluation

- Quiz = 25 Marks
- Lesson Plan = 25 Marks
- Task Design = 25 Marks
- Practice Teaching = 25 Marks

Recommended Reading

- Prabhu, N.S. Second Language Pedagogy. Oxford UP, 1987
- Richards, Jack C. and T.S. Rodgers. Approaches and Methods in Language Teaching: A Description and Analysis. Cambridge UP, 1986

Web Reference

- <https://learnenglish.britishcouncil.org/skills/speaking>
- <https://learnenglish.britishcouncil.org/skills/reading>
- <https://learnenglish.britishcouncil.org/skills/listening>
- <https://learnenglish.britishcouncil.org/skills/writing>



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HEAD
DEPARTMENT OF ENGLISH
ST. THOMAS COLLEGE
RANNY - 7091

ST.THOMAS COLLEGE,RANNI
(Affiliated to Mahatma Gandhi University)

DEPARTMENT OF PHYSICS



Syllabus of Certificate Course

2019 - 2020

Programming on Python

St. Thomas College, Ranni Department of Physics - Certificate Course on Programming in Python

Overview: This course aims at teaching the basics of programming computers using python, which is a powerful programming language which has wide applications from web development to machine learning and data science.

Course Objectives: The primary goal of this course is to give students a basic introduction to object-oriented and procedural programming, using Python. This course will enable the students to master important Python programming concepts such as data operations, file operations, Object-oriented programming and various python libraries.

Course outcome:

By successfully completing the course, students will be able to: understand, correct and write programs in python

Total Hours: 30 Hrs

Module I (6Hrs)

Introduction-Features of Python, Installation, Applications, Basic Syntax, Variables and Datatypes, Operators-Arithmetic operators, Assignment operators, Comparison operators, Logical operators, Identity operators, Membership operators, Bitwise operators.

Module II (4Hrs)

Conditional Statements-if, if-else, Nested if-else. Looping Statements-for, while Nested loops. Control Statements-break, continue, Pass.

Module III (6 Hrs)

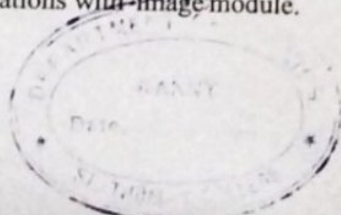
Lists, tuples, and dictionaries; basic list operators, replacing, inserting, removing an element; searching and sorting lists; dictionary literals, adding and removing keys, accessing, and replacing values; traversing dictionaries.

Module IV (8 Hrs)

Object Oriented Programming concept, Creation of class and objects, Inheritance, Polymorphism, Functions- arguments and return values, formal vs actual arguments.

Module V (6 Hrs)

Modules & Packages: Creating Modules, import Statement. Simple Graphics and Image Processing: "turtle" module; simple 2d drawing - colours, shapes; digital images, image file formats, image processing Simple image manipulations with 'image' module.



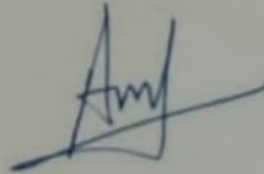
Assessment Procedure

The assessment procedures include evaluation of theoretical background knowledge and practical skills in understanding, writing and correcting programmes in python.

Category	Marks
Internal mark	20
Theory	40
Practical	40
Total	100

Grade Pattern

Percentage of Marks	Grade
90% and above	A+
80-89%	A
70-79%	B+
60-69%	B
50-59%	C



ST. THOMAS COLLEGE, RANNI
(Affiliated to Mahatma Gandhi University)

DEPARTMENT OF COMMERCE



Scheme and
syllabus of
Certificate course
2019-2020

GOODS AND SERVICES TAX

BOARD OF STUDIES (BoS)

Chairman	: Asst.Professor Rengi Abraham (Head of Department of Commerce)
Faculties	:Dr.Anu T Philip
Members	: Dr.Anu T Philip (Course coordinator, Dept of commerce) :Anjali Jacob (Assistant professor, Department of commerce)

INTRODUCTION

The certificate course aims to impart basic knowledge of GST among the students and to improve the employability skills of students.

AIM OF THE PROGRAMME

Understanding various aspect of the GST and acquiring practical knowledge of them.

ELIGIBILITY FOR ADMISSION

All UG students of commerce department of ST. Thomas college, Ranny can apply. The number of intake is limited to 60.

MEDIUM OF INSRUCTION: English

The duration of certificate course is 30 hours (including the hours of final examination) of which 30 hrs theory. The certificate course will be offered beyond the usual class hours and days of the college. The certificate course is will be a blend of theory classes and assignments.

COURSE OBJECTIVES

1. To enable the students to have an understanding on the provisions of Indirect Tax Laws and Rules.
2. To equip the students to become tax practitioners.

COURSE OUTCOME

- Imparting basic knowledge in GST
- Improve the employability skills of students

EVALUATION

1. The value-added courses shall be evaluated through an examination at the end of the course.
2. The duration of examination is one hour for practical and one hour for theory each.
3. The total mark for the examination shall be 100

Components of Evaluation	Marks
Attendance	10
Assignments	10
Theory examination	80
Total	100

Pattern of question paper

Sl.No.	Pattern	Marks	Choice of Question	Total Marks
1	Short Answer	2	10/12	20
2	Short essay	5	6/8	30
3	Essay	15	2/3	30
	Total			80

4. A committee consisting of the Head of the Department, course coordinator and faculty nominated by head of department shall monitor the evaluation process.
5. The list of the students along with with the marks and grades earned may be forwarded to the principal.
6. The HOD and course co-coordinator responsible for maintaining and processing the record with regard to the course, assessment marks and results
7. Certificates will be issued to those students with 75% attendance, timely submission of assignment and minimum 40%marks in qualifying examinations.

Grading pattern

Grades are given on a **3-point scale** based on the total percentage of marks secured in internal and external assessment as given below.

Percentage of Marks	Grade
Above 90	A
75-90	B
60-75	C
50-60	D
Below 50	E (Failed)

SYLLABUS

B.Com

GOODS AND SERVICES TAX

Instructional Hours 30

Course Objective: To give the students a general understanding of GST Law in the country and provide an insight into practical aspects of GST.

Module 1-Introduction to Goods and Services Tax

Introduction-Stages of Evolution of GST-Subsuming of taxes- Structure of GST- CGST-SGST-UTGST-IGST-GSTN-HSN Code-GST Council-Definitions- Aggregate Turnover- Agent- Composite supply- Mixed supply- Exempted supply- Output tax- Reverse charge- Taxable territory- Non taxable territory (8 Hours)

Module 2- Levy and collection of Tax, time, value and place of supply

Levy and collection of tax- Rates of GST- Scope of supply- Liability to pay tax- Reverse charge Mechanism- Time of supply-Value of supply- Place of supply.(5 hours)

Module 3- Input Tax Credit and payment of GST

Input Tax Credit- Manner of claiming input tax credit in different situations- Input service distribution- Credit Note-Debit Note- Electronic Cash Ledger- Electronic Credit Ledger- Manner of payment of tax (7 hours)

Module 4- Registration, Returns and Accounts and Assessment

Registration- Persons liable for Registration- Compulsory registration- Deemed Registration- Cancellation of Registration- Returns- Accounts and Records- Assessment- Types of assessment (10 hours)

RENGI ADARSHAM (HOD)

Assistant Professor
Dept. of Commerce
ST. Thomas College,
Ranni





DEPARTMENT
OF BOTANY

**CERTIFICATE COURSE IN
VALUE ADDED PRODUCTS FROM
FRUITS AND VEGETABLES
2019-2020 |**

CERTIFICATE COURSE IN VALUE ADDED PRODUCTS

FROM FRUITS AND VEGETABLES

Course Objectives: This course will help student in understanding environment, growth parameter, causes of post harvest losses, management and value addition.

Student Learning Outcomes:

Understand the post harvest technology of horticultural crops

Understand value addition of horticultural crops

Understand the work space, tool and equipment design for PHT and Value addition

Study the various certification and accreditation i.e. FPO, HACCP, ISO and other leveling

SYLLABUS

- 1. Importance and present status of post harvest technology in horticultural crops** Importance of post harvest management of food & causes of post-harvest losses; Pre-harvest practices, maturity and harvesting indices, harvesting methods and tools, on-farm management of harvested produce, Pre-cooling, sorting grading, packing of horticulture produce; Extend the shelf-life and storage quality of fruits, vegetables and flowers

8hrs

- 2. Value Addition**

Principles and methods of processing and preservation, preparation of jams, jellies, squashes, juices, syrups, crystallized fruits, pickle and ketchups; Spoilage of processed products **3hrs**

- 3. Post harvest Losses and its Control**

Types of losses, cause for the loss Mechanism for control; Advance technologies in PHM – ripening, delayed ripening, extension of shelf life.

3 hrs

4. Storage and Packaging

Storage practices: CA and MA, hypobaric storage, pre-cooling and cold storage, Zero energy cool chamber; On farm storage and transport of fruits, vegetables and flowers; Various methods of packing, packaging and cushioning materials and transport

2hrs

5. Practicals

Lab 1- Harvesting technology of important crops; determination of maturity indices

Lab 2- Post harvest management practices – pre-cooling, grading and packaging

Lab 3- Methods for determination of post harvest losses

Lab 4- Extension of shelf-life; Storage and packaging technology

16 hrs

REFERENCES

Alan H. Varnam, (2012), "Milk and Milk Products: Technology, chemistry and microbiology", Springer Science & Business Media Publishers.

Gould, G. W. (2012), "New Methods of food preservation", Springer Science & Business Media.

Joshi.V.K., (2015), "Indigenous Fermented Foods of South Asia", CRC Press.

Manay, N.S. Shadaksharaswamy, M. (2004), "Foods- Facts and Principles", New Age International Publishers, New Delhi.

Robinson, R. K., (2012), "Modern Dairy Technology: Volume 2 Advances in Milk Products", Springer Science & Business Media Publishers.

Srilakshmi, B.(2003), "Food Science", New Age International Publishers, New Delhi.

Subalakshmi, G and Udipi, S.A.(2001), "Food processing and preservation". New Age International Publishers, New Delhi.

Zhou. W, Hui Y,H; (2014), "Bakery Products Science and Technology", 2nd Edition, Wiley



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DEPARTMENT OF BOTANY



CERTIFICATE COURSE IN OYSTER MUSHROOM CULTIVATION

CERTIFICATE COURSE IN OYSTER MUSHROOM CULTIVATION

Course Objectives:

- Enable the students to identify edible and poisonous mushrooms
- Provide hands on training for the preparation of bed for mushroom cultivation and spawn production
- Give the students exposure to the experiences of experts and functioning mushroom farms
- Help the students to learn a means of self employment and income generation

Course outcome: By successfully completing the course, students will be able to

1. Identify edible types of mushroom
2. Gain the knowledge of cultivation of different types of edible mushrooms and spawn production
3. Manage the diseases and pests of mushrooms
4. Learn a means of self-employment and income generation

Unit: I Mushroom morphology: Different parts of a typical mushroom & variations in mushroom morphology. 1 hr

Unit: II Mushroom Classification: Based on occurrence, Color of spores-, Morphology, Structure and texture of fruit bodies, Fruit bodies and spores- Ainsworth et al (1973) classification 2 hrs

Unit: III Biology of Mushrooms: Button, Straw& Oyster- General morphology, distinguishing characteristics, spore germination and life cycle 2hrs

Unit: IV Nutrient Profile of Mushroom: Protein, aminoacids, calorific values, carbohydrates , fats, vitamins & minerals 2 hrs

Unit: V Health benefits of Mushroom: Antiviral value, antibacterial effect, antifungal effect, anti-tumour effect, haematological value cardiovascular & renal effect, in therapeutic diets, adolescence, for aged persons & diabetes mellitus. 2 hrs

Unit: VI Cultivation System & Farm design: Fundamentals of cultivation system- small village unit & larger commercial unit. Principles of mushroom farm layout- location of building

plot, design of farm, bulk chamber, composting platform, equipments & facilities ,
pasteurization room & growing rooms. 2 hrs

Unit: VII Spawn & Spawning: Facilities required for spawn preparation, Preparation of spawn
substrate, preparation of pure culture, media used in raising pure culture, culture
maintenance, storage of spawn 2 hrs

Unit: VIII : Casting materials & Case running: Importance of casing mixture, Quality
parameters of casing soil, different types of casing mixtures, commonly used materials
2 hrs

Unit: IX Cultivation of Oyster Mushrooms: Collection of raw materials, compost & composting,
spawn & spawning, casing & case run, cropping & crop management, picking & packing.

Unit : X Hands on Training on Mushroom Cultivation 15 hrs

REFERENCES

1. Handbook on Mushrooms (2000), Nita Bhal. 2nd ed. Vol. I and II. Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi
2. Mushroom Production and Processing Technology (2010), Pathak Yadav Gour Agrobios (India).
3. A hand book of edible mushroom, S.Kannaiyan& K.Ramasamy (1980). Today & Tomorrows printers & publishers, New Delhi
4. A Hand Book on Mushroom Cultivation (1996), Pandey R.K, S. K Ghosh. Emkey Publications.
5. Mushroom Cultivation (2005), Tripathi, D.P. Oxford & IBH Publishing Co. PVT.LTD, New Delhi.

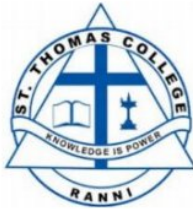


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ST.THOMAS COLLEGE,RANNI
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DEPARTMENT OF TOURISM



Syllabus of Certificate Course

2019 - 2020

Cargo Management

COURSE NAME: CARGO MANAGEMENT

COURSE CODE: STCCMDCO1

Syllabus

Module 1: 30 hr

- Introduction to cargo management
- Cargo- history, concept
- Common terms used in cargo handling
- Rules governing acceptance of cargo
- Cargo rating

Module 2: 30hr

- Air cargo terminology
- IATA cargo agent and agency operations
- Air cargo guide book
- Air cargo guides
- Air cargo tariff- rules

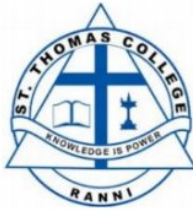
Module 3: 30hr

- IATA dangerous goods regulations
- Documents in air cargo
- Cargo handling
- Cargo liability and insurance
- Export- import documentation



ST.THOMAS COLLEGE,RANNI
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DEPARTMENT OF HISTORY



Syllabus of Certificate Course

2019 - 2020

The Basics of MS-Office

ST, THOMAS COLLEGE, RANNY
DEPARTMENT OF HISTORY
CERTIFICATE PROGRAMME 2019-20

Title of the Programme: CERTIFICATE COURSE ON THE BASICS OF MS OFFICE

Instructional Hours: 30

SYLLABUS

Objective:

MS. Office course trains students how to use MS Office applications use in office work such as creating professional-quality documents; store, organize and analyze information; arithmetic operations and functions; and create dynamic slide presentations with animation, narration, images, and much more, digitally and effectively.

Module 1-MS WORD Text Basics, Text Formatting and saving file, Working with Objects, Header & Footers, Working with bullets and numbered lists, Tables, Styles and Content, Merging Documents, Sharing and Maintaining Document, Proofing the document, Printing. 7 hr

Module 2- MS EXCEL Introduction to Excel, Formatting excel work book, Perform Calculations with Functions, Sort and Filter Data with Excel, Create Effective Charts to Present Data Visually, Analyze Data Using PivotTables and Pivot Charts, Protecting and Sharing the work book, Use Macros to Automate Tasks, Proofing and Printing. 10hr

Module 3- MS POWERPOINT Setting Up PowerPoint Environment, Creating slides and applying themes, Working with bullets and numbering, Working with Objects, Hyperlinks and Action Buttons, Working With Movies and Sounds, Using Smart Art and Tables, Animation and Slide Transition, Using slide Master, Slide show option, Proofing and Printing. 10 hr

Module 4- COMMUNICATION AND COLLABORATIONS-Basics of email-opening email account-creating and sending email-sorting and searching emails. 3hr

Reference

1. P.K Sinha and P. Sinha "Foundations of Computing", BPB Publications, 2008
2. ITLEducational Society," Introduction to IT", Pearson Education, 2009
3. Mansfield Ron," Working in Microsoft Office", Tata Mc Graw-Hill, 2008

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ST.THOMAS COLLEGE,RANNI
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DEPARTMENT OF ECONOMICS



Syllabus of Certificate Course

2019 - 2020

Entrepreneurship

CERIFICATE COURSE IN ENTREPRENEURSHIP (30 hrs)

For academic session (2019-2020)

Offered by

DEPARTMENT OF ECONOMICS

ST.THOMAS COLLEGE RANNY

Programme Objectives:

1. To enable the students to understand the importance of entrepreneurship.
2. To understand different techniques for entrepreneurship development.

Course Outcome

1. Explain the scope importance of entrepreneurship.
2. Express different techniques for entrepreneurial skill development.

Unit I Entrepreneurship – 8 hr

- o Concept
- o Functions
- o Need
- o Importance

Entrepreneurship and economic Growth – qualities of an entrepreneur.

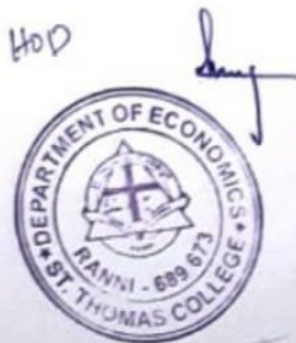
Unit II 10hr

- Entrepreneurial Value –
 - o Values
 - o Attitudes
 - o Motivation

Identification of opportunities – steps in setting up a Business –setting up a small scale unit

Unit III 12hr

Institutional arrangement for Entrepreneurship Development – DIC, ITCOT, SIDCO, NSIC, SISI, TIIC, SIDBI, Commercial Banks



Reference Books

1. Entrepreneurship development in India-Dr. C.B. Gupta, Dr.N.P.srinivasan.
2. Entrepreneurship development principles, policies and programmes-
P.Saravanveni
3. Dynamics of Entrepreneurship development in India- Vasant Desai
4. Fundamentals of Entrepreneurship –Mohanty (PHI)

GRADING PATTERN

MARKS	GRADE
45 and above	A+ Excellent
40 to below 45	A Very good
35 to below 40	B+ Good
30 to below 35	B Above average
25 to below 30	C Satisfactory
20 to below 25	D Pass
15 to below 20	F Fail



ST THOMAS COLLEGE, RANNI

DEPARTMENT OF CHEMISTRY

SYLLABUS

Certificate course in Personal Care Products Designing and Manufacturing



Year of establishment 2019

Course Duration :30 hours

BOARD OF STUDIES (BoS)

Chairman :Dr. Ansu Jacob. (Head of Department of Chemistry)

External Faculty: Dr. Sini Jacob (Assistant Professor, Department of Chemistry, BAM College
Thurithucadu)

Members

Mrs. Rintu Mathew (Course Coordinator, Dept. of Chemistry, ST.Thomas College, Ranni

Mrs. Bincy Francis (Asst. Professor, Dept. of Chemistry, ST.Thomas College, Ranni

Mrs. Haripriya V (Asst. Professor, Dept. of Chemistry, ST.Thomas College, Ranni)

Mrs. Chinju Jacob (Asst. Professor, Dept. of Chemistry, ST.Thomas College, Ranni)

Dr. Mathew Kuruvilla (Asst. Professor, Dept. of Chemistry, ST.Thomas college, Ranni)

Mrs. Swetha C (Asst. Professor, Dept. of Chemistry, ST.Thomas College, Ranni)

Course Overview

This course enhances the student's ability to make to wise health decisions for themselves, their families, and communities and to develop their interest towards productive chemistry.

Course Objectives

By the end of this course, students will be able to:

1. To gain theoretical and practical knowledge in personal care materials casting processes Act with skill and reason to demonstrate an understanding of the concepts and behaviors that reduce health risks and enhance the health of self and others.

2. Demonstrate the ability to access, evaluate, and use health information, products, and services that influence health and well-being in a positive manner

Course Out come

1. At the end of the course, student will be able to understand need of health and hygiene.
2. Learner shall theory behind the personal care products.
3. Student will be able to cast personal care materials such as soap, sanitizer etc.

EVALUATION

1. The value-added courses shall be evaluated through an examination at the end of the course.
2. The duration of examination is two hours.
3. The total marks of the examination shall be 100

Components of Evaluation	Marks
Attendance	5
Assignment / Seminar	5
Practical	30
External Examination	50
Viva	10
Total	100

Pattern of question Paper

Sl. No.	Pattern	Marks	Choice of questions	Total marks
1	Short Answer	2	5/7	10
2	Short essay	5	4/6	20
3	Essay	10	2/4	20
Total				50

4. A committee consisting of the Head of the Department, the course coordinator and a senior faculty member nominated by the Head of the department shall monitor the evaluation process.
5. The list of students along with the marks and the grades earned may be forwarded to the Principal/Chief Superintendent of Examinations.

6. Certificates will be issued to those students with 75% attendance, timely submission of assignment and project and a minimum of 40% marks in the qualifying examination.

Grading Pattern

Grades are given **on a 7-point scale** based on the total percentage of marks secured in internal and external assessment, as given below: -

Percentage of Marks	Grade
95 and above	A⁺ outstanding
85 to below 95	A Excellent
75 to below 85	B⁺ Very Good
65 to below 75	B Good
55 to below 65	C⁺ Satisfactory
45 to below 55	C Fair
35 to below 45	D Pass
below 35	F Failure

Course Content

Total Hour-30

Module 1.

(5 hrs)

A general introduction to health and hygiene

Health -Definition-Determinants of health,key health indicators-Environmental ,public and personal health

Hygiene:Definition-personal,community and medical hygiene-WASH(water,sanitation and hygiene) programme- importance of personal hygiene-personal care products

Module 2.Soaps

(8 hrs)

History of soap -literature survey-The science of soap action-Boiling process,saponification process-General principles of soap making-manufacture of soaps(cold,hot,semi boiled process)-Raw materials for soap -selection of raw materials-additives in soap making-Bleaching of soap-Problems with soap making.

Module 3.

(7 hrs)

Sanitizers-meaning and advantages of sanitizers-raw materials for sanitizers-properties of raw materials-WHO recommendations for sanitizers-Applications of sanitizer.

Feminine hygiene products,oral cleansers -an over view

Module 4.Experimental section (10 hrs)

1.Soap making

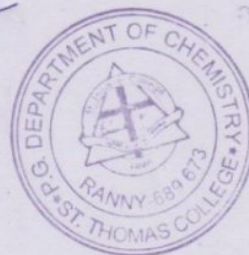
2.Hand sanitizer preparation

3.Formulation of Aloe vera hand sanitizer

Reference

- 1.NIIR Board, Handbook on Soaps,Detergents and acid slurry, Asia Pacific Business Press
- 2.J.G Kane, Soaps:Their Chemistry and Technology,First Edition,Dr.R Sarkar Publishers
- 3.Benjamin Levit, Oils,detergents and Maintenance,Chemical Publishing Company
- 4.George T Austin, Shreves Chemical Process Industries fifth edition
5. Prof.P.K Ray, Health,Hygiene and Nutrition,Fifth Edition
- 6.Personal hygiene for nurses,N.K Anand and Shikha Goel,AITBS publishers,India

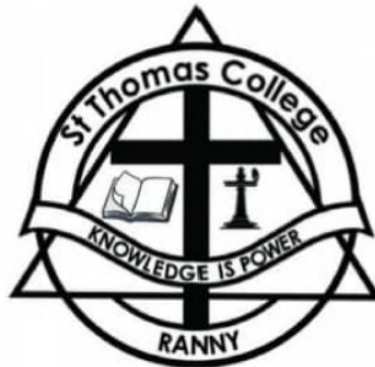
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ST. THOMAS COLLEGE, RANNI

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DEPARTMENT OF ZOOLOGY



Scheme and Syllabus of
Certificate Course – “**WASTE MANAGEMENT**”
2019-2020

STCZYCC01 - Waste Management

BOARD OF STUDIES (BoS)

Chairman- Dr. AleyammaKuruville (Head of Department of Zoology)

External Faculty : Dr. Giji K. Joseph, Asst. Prof.& Research Guide, Dept. of Zoology, Nirmala College, Muvattupuzha.

Members- Dr. R. Aruna Devy (Course Coordinator, Dept. t of Zoology)

Dr. R. Sreejaya .R (Asst. Prof., Dept. t of Zoology)

Mrs. Dernia Alex (Guest Faculty, Dept.of Zoology)

INTRODUCTION

The Certificate Courses aims to provide additional learner centric graded skill oriented technical training, with the primary objective of improving the employability skills of students.

AIM OF THE PROGRAMME

Understanding various aspects of the subject and acquiring methodological knowledge in them. Application of this knowledge in a suitable manner in required fields.

ELIGIBILITY FOR ADMISSIONS

All UG students from Zoology department of thisCollege can apply. The number of intakes to the course is limited to 25. The course can be offered only if there are at least 10 students opting for it.

MEDIUM OF INSTRUCTION: English.

DURATION OF THE COURSE

The duration of the certificate course is 30 hours (including the hours of final examination) of which 18 hrs theory and 12 hrs for laboratory/demonstration/experimental activities and the course can have a maximum of three hours a day.

COURSE OBJECTIVE

Waste handling is a complex activity which keeps our environment clean and healthy. With the enactment of Waste Management Rule 2016 by Government of India, waste management has now fundamentally changed into closed-cycle management in which waste generation and waste management are carried out with particular attention to the sparing use of natural resources and protection of people and environment. People have to acquire competence in the field of waste prevention, waste utilization and waste treatment. Through this course students will study sustainable waste management, contaminated land fill engineering, reuse and recycling in the manufacturing sector and more. Today waste management is facing severe challenges due to non-availability of skilled man power.

COURSE OUTCOMES

At the end of the course the student will be able to

1. Plan logistics for waste collection and disposal strategies for segregation of waste and waste reduction.
2. Plan appropriate recycle facility for heterogeneous wastes.
3. Plan and design waste collection systems.
4. Assimilate the attitudes, values, characteristics, behaviour, and processes associated with possessing an entrepreneurial mindset and engaging in successful appropriate entrepreneurial behaviour.
5. Develop entrepreneurial opportunities & recognize the entrepreneurial potential within themselves,

whether they want to start their own business or act as an entrepreneur within an existing organization.

EVALUATION

1. The value-added courses shall be evaluated through an examination at the end of the course.
2. The duration of the examination is two hours.
3. The total marks of the examination shall be 100

Components of Evaluation	Marks
Attendance	10
Assignment / Seminar	10
Project & Viva	30 (20+10)
External Examination	50
Total	100

Pattern of questions Paper

Sl. No.	Pattern	Marks	Choice of questions	Total marks
1	Short Answer/problem type	2	5/7	10
2	Short essay/problem	5	4/6	20
3	Essay/problem	10	2/4	20
Total				50

4. A committee consisting of the Head of the Department, the course coordinator and a senior faculty member nominated by the Head of the department shall monitor the evaluation process.
5. The list of students along with the marks and the grades earned may be forwarded to the Principal/Chief Superintendent of Examinations.
6. The Course coordinator is responsible for maintaining and processing the record with regard to the course, assessment marks and results.
7. Certificates will be issued to those students with 75% attendance, timely submission of assignment and project and a minimum of 40% marks in the qualifying examination.

Grading Pattern

Grades are given **on a 7-point scale** based on the total percentage of marks secured in internal and external assessment, as given below: -

Percentage of Marks	Grade
95 and above	S Outstanding
85 to below 95	A⁺ Excellent
75 to below 85	A Very Good
65 to below 75	B⁺ Good
55 to below 65	B Above Average
45 to below 55	C Satisfactory
35 to below 45	D Pass
below 35	F Failure
Absent	Ab

SYLLABUS
STCZYCC01. Waste Management
Total hours of instruction: 30 Hours

Module 1: 6 Hrs.

Characterization of wastes, agricultural residues and wastes including animal wastes; industrial wastes; municipal solid wastes. Waste processing types and composition of various types of wastes; Characterization of Municipal Solid Waste, Industrial waste and Biomedical Waste, waste collection and transportation; waste processing-size reduction, separation; waste management hierarchy, waste minimization and recycling of Municipal solid waste..

Module 2: 6 Hrs

Environmental aspects of waste collection, role of public authority and private sector in waste collection, organizing collection of residential waste, fee schemes, public awareness programs. Source segregation and collection of source-segregated waste: Purpose of source segregation, segregation criteria and guidance, segregation potential and efficiencies, systems for collecting segregated fraction Waste transfer stations: waste delivery, waste transfer, transportation of the reloaded waste, siting and Design of waste transfer station, economical considerations, recycling solid wastes, materials recovery facilities.

Module 3: 6 Hrs

Introduction to Entrepreneurship, Practicing Entrepreneurship and its significance and contribution to the economy Entrepreneurial Mindset, Supporting Social Entrepreneurship, Entrepreneurship and opportunities in Waste Management, Generating New Ideas, Using Design Thinking Building Business Models, Planning a Waste Managing Enterprise, Human Resources and Infrastructure, Arranging and Managing Finance, Marketing and Pitching the idea Government rules, Navigating Legal & IP Issues involved in Waste Management, Role of financial institutions Innovations in waste management, Revenue models, Developing Networks, Challenges in Entrepreneurship, Learning from Failure Case studies: Wealth from waste and entrepreneurs in India and other countries.

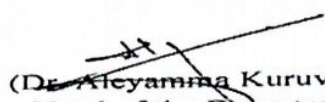
DEMONSTRATIONS/PRACTICALS (10Hrs)

1. Sampling of a solid waste
2. Physical analysis of the waste material
3. Picking analysis/quantifying material fractions as identifiable items.
4. Particle size distribution.
5. Moisture content.
6. Chemical analysis of the waste material a. pH and alkalinity. b. Organic matter. c. In organics.
7. Preparation of Project report based on wastes collection, handling, treatment, and disposal.
8. Assignment and Project

Final Examination - 2hrs

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