



THE COCHIN COLLEGE

Koovapadam, Kochi-2

Affiliated To Mahatma Gandhi University

Re-accredited by NAAC With B+ Grade



Fourth Cycle
NAAC Accreditation 2024

Criterion 1 Curricular Aspects

1.2 - Academic Flexibility

Metric No. 1.2.1

Number of Certificate/Value added courses offered and online courses of MOOCs, SWAYAM, NPTEL etc.

Brochure and Syllabus- 2019-2020

Submitted to



National Assessment and Accreditation Council



THE COCHIN COLLEGE

KOCHI - 682 002

(Affiliated to Mahatma Gandhi University and Accredited by NAAC)

Website: www.thecochincollege.edu.in

email: email@thecochincollege.edu.in

Brochure & Syllabus

Certificate/Value added courses offered during 2019-20

THE COCHIN COLLEGE
KOOVAPADAM, KOCHI-2
AFFILIATED TO MG UNIVERSITY, AC-CREDITED WITH B+ GRADE

Department of Physics

VALUE ADDED / CERTIFICATE COURSE

Offered in 2019-2020

- + SIMPLE HARMONIC MOTION AT DIFFERENT LEVELS OF ABSTRACTION
- + SIMULATING DAILY LIFE PHYSICS WITH PYTHON PROGRAMMING LANGUAGE

APPLY

<https://forms.gle/zj3ApbXmTTb37KYW9>





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Website: www.thecochincollege.edu.in

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VALUE ADDED COURSE

Department of Physics, The Cochin College.

ADPHY1901: Simple Harmonic Motion Course Syllabus

Duration: 30 Hours

Course Outline

Session 1: Kinematics and Newton's Laws of Motion (6 hours)

Topics:

- Basic concepts of kinematics
- - Displacement, velocity, and acceleration
- - Equations of motion
- Review of Newton's three laws
- - Application of Newton's laws to linear motion
- - Free-body diagrams

Activities:

- Illustrative problems and exercises
- Graphical analysis of motion
- Problem-solving sessions
- Case studies of various physical systems

Session 2: Introduction to Simple Harmonic Motion and Conditions for SHM (6 hours)

Topics:

- Definition and characteristics of SHM
- - Examples of SHM in physical systems
- - Derivation of the SHM equation
- Necessary conditions for SHM
- - Restoring force and equilibrium position
- - Mathematical formulation

Activities:

- Demonstrations of SHM using pendulums and springs
- Analytical problem-solving
- Interactive discussions and real-life examples

Session 3: Energy in SHM and Solving Differential Equations (6 hours)

Topics:

- Energy transformations in SHM
- - Expressions for kinetic and potential energy
- - Total mechanical energy





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- Introduction to differential equations
- - Solving homogeneous linear differential equations
- - Solving inhomogeneous linear differential equations
- - Physical interpretation of solutions

Activities:

- Energy calculations for various SHM systems
- Step-by-step solution techniques for differential equations
- Practice problems and application-based exercises

Session 4: Forced Oscillations and Damped Oscillations (6 hours)

Topics:

- Introduction to forced oscillations
- - Resonance and its effects
- - Mathematical treatment of forced oscillations
- Introduction to damping
- - Types of damping: underdamping, overdamping, and critical damping
- - Differential equation for damped oscillations

Activities:

- Experimentation with forced oscillation setups
- Analytical and numerical problem-solving for forced and damped oscillations
- Case studies of damped systems

Session 5: Comprehensive Problem-Solving and Applications (6 hours)

Topics:

- Review of all topics covered
- - Mixed problems involving SHM, forced, and damped oscillations
- - Strategies for approaching complex problems
- Practical applications of SHM
- - Real-world examples and case studies

Activities:

- Group problem-solving activities
- Individual assessments and feedback
- Practical projects on SHM applications
- Final review and preparation for assessments

Resources

- Textbook:
- "An Introduction to Mechanics" by Daniel Kleppner and Robert Kolenkow
- Online Resources:





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- Khan Academy: Videos and exercises on SHM and related topics
- MIT OpenCourse Ware: Lecture notes and assignments

Assessment

- Quizzes: Regular quizzes at the end of each session
- Final Exam: Comprehensive, covering all sessions
- Projects and Assignments: Practical projects on SHM applications, Problem sets for practice and mastery





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VALUE ADDED COURSE

Department of Physics, The Cochin College.

ADPHY1902: Simulating Daily Life Physics with Python Programming Language

Duration: 30 Hours

Course Overview: This 30-hour course is designed to introduce students to the fundamentals of simulating everyday physics phenomena using the Python programming language. Through a series of lectures, hands-on coding exercises, and projects, students will learn how to model and simulate various physical scenarios encountered in daily life. The course will cover basic physics principles, numerical methods, and practical Python programming techniques necessary for creating simulations.

Prerequisites:

- Basic knowledge of Python programming (loops, conditionals, functions, data structures).
- High school-level understanding of physics concepts (kinematics, dynamics, energy, etc.).

Learning Objectives: By the end of this course, students should be able to:

- Understand fundamental physics principles and their computational representation.
- Implement numerical methods to simulate physical systems.
- Develop Python scripts to model and visualise daily life physics scenarios.
- Analyse simulation results and interpret physical phenomena.
- Apply simulation techniques to solve practical problems in physics.

Course Outline:

Week 1: Introduction to Simulation and Python Basics

- **Session 1: Introduction to Simulation**
 - Overview of computational physics and simulation.
 - Importance of simulation in understanding real-world physics.
 - Introduction to Python for scientific computing.
- **Session 2: Python Basics Review**
 - Recap of Python fundamentals relevant to simulation.
 - Introduction to NumPy and Matplotlib for numerical computing and plotting.
- **Session 3: Project 1 - Projectile Motion Simulation**
 - Simulating projectile motion using basic kinematic equations.
 - Plotting trajectories and analysing results.

Week 2: Dynamics and Numerical Methods





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- **Session 4: Introduction to Dynamics**
 - Understanding Newton's laws of motion.
 - Coding Newtonian dynamics in Python.
- **Session 5: Numerical Methods for Physics Simulation**
 - Euler method and its applications in physics simulations.
 - Implementing Euler method for solving differential equations.
- **Session 6: Project 2 - Oscillatory Motion Simulation**
 - Modelling simple harmonic motion using numerical methods.
 - Analysing energy conservation and damping effects.

Week 3: Energy and Forces

- **Session 7: Energy in Physics**
 - Types of energy (kinetic, potential) and their conservation laws.
 - Coding energy calculations in Python simulations.
- **Session 8: Forces and Newton's Gravitational Law**
 - Simulating gravitational interactions using Newton's law.
 - Implementing force calculations and vector operations in Python.
- **Session 9: Project 3 - Planetary Motion Simulation**
 - Modelling planetary orbits and gravitational interactions.
 - Visualising planetary systems and analysing stability.

Week 4: Fluid Dynamics and Advanced Topics

- **Session 10: Introduction to Fluid Dynamics**
 - Basics of fluid flow and computational fluid dynamics (CFD).
 - Overview of fluid simulations using Python libraries.
- **Session 11: Advanced Topics in Simulation**
 - Monte Carlo simulations for statistical physics.
 - Introduction to agent-based modelling (ABM) for complex systems.
- **Session 12: Final Project - Comprehensive Simulation**
 - Integrating concepts learned throughout the course.
 - Designing and implementing a comprehensive physics simulation project.
 - Presentation and discussion of final projects.

Assessment:

- Continuous assessment through weekly assignments and projects.
- Final project evaluation based on simulation accuracy, code quality, and presentation.

Resources:

- Textbook: "Computational Physics" by Mark Newman.
- Python libraries: NumPy, Matplotlib, SciPy.





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- Online resources and supplementary readings provided throughout the course.

Question Paper:

Simulating Daily Life Physics with Python Programming Language

Duration: 3 Hours

Total Marks: 100

Section A: Multiple Choice Questions (20 Marks)

1. Which physical quantity is described by Newton's Second Law of Motion? a) Force
b) Energy
c) Momentum
d) Velocity
2. In the context of projectile motion, which component of velocity remains constant throughout the trajectory? a) Vertical component
b) Horizontal component
c) Both components
d) None of the above
3. Which physical principle governs the behavior of a simple pendulum? a) Archimedes' principle
b) Bernoulli's principle
c) Hooke's law
d) Pascal's law
4. According to the law of conservation of energy, energy cannot be _____. a) created
b) destroyed
c) both created and destroyed
d) transformed
5. Which physical phenomenon explains the bending of light as it passes from one medium to another? a) Diffraction
b) Reflection
c) Refraction
d) Interference

Section B: Short Answer Questions (30 Marks)





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6. Explain the concept of inertia and provide an example from daily life.
7. Describe the factors affecting the period of a simple pendulum.
8. Compare and contrast elastic and inelastic collisions with examples.
9. Explain the concept of terminal velocity and its significance.
10. Discuss the applications of Newton's Third Law of Motion in everyday scenarios.

Section C: Problem Solving and Simulation (50 Marks)

Question 11: Write a Python program to simulate the motion of a projectile launched at an angle θ with initial velocity v_{0v_0} . Plot its trajectory.

Question 12: Develop a Python simulation to model the behavior of a simple pendulum. Plot the position of the pendulum bob over time.

Question 13: Create a Python program to simulate a collision between two objects, one elastic and one inelastic. Analyze the momentum and kinetic energy before and after the collision.

Question 14: Simulate the behavior of waves using Python. Plot the wave motion and demonstrate the principles of interference.

Question 15: Use Python to model the motion of a block sliding down an inclined plane with friction. Calculate its acceleration and plot its velocity and position over time.

Section D: Practical Coding (Advanced Simulation and Analysis) (20 Marks)

Question 16: Develop a Python program to simulate the dynamics of a simple harmonic oscillator. Plot the position and velocity of the oscillator over time.

Question 17: Write a Python simulation to study the conservation of mechanical energy in a system involving springs and masses. Plot the total mechanical energy over time.





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Department of ZOOLOGY (SF)
**VALUE
ADDED
Course**
offered in 2019-2020

 **Ornithology**

<https://forms.gle/zj3ApbXmTTb37KYW9>





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ORNITHOLOGY

Course Overview

This 30-hour certificate course in ornithology provides a comprehensive introduction to the study of birds, their behaviours, ecology, and conservation. Designed for students, bird enthusiasts, and professionals in wildlife and environmental fields, the course covers fundamental concepts, field techniques, and practical applications in ornithology.

Course Objectives

1. Understand Bird Biology: Introduce the fundamental principles of avian biology, including anatomy, physiology, and behaviour.
2. Species Identification: Learn techniques for identifying bird species by sight and sound.
3. Ecology and Habitats: Study the ecological roles of birds and their habitats.
4. Bird Conservation: Explore strategies for conserving bird populations and their environments.
5. Field Research Methods: Gain practical skills in bird monitoring and research techniques.
6. Human-Bird Interactions: Understand the impacts of human activities on birds and explore mitigation strategies.

Course Outline

1. Introduction to Ornithology (3 hours)
 - Definition and scope of ornithology
 - Importance of studying birds
 - Evolution and diversity of birds
2. Bird Anatomy and Physiology (5 hours)
 - Anatomy of birds: skeletal, muscular, respiratory, and circulatory systems





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- Physiology: metabolism, thermoregulation, and reproduction
 - Adaptations for flight and other specialised behaviours
3. Bird Identification and Taxonomy (5 hours)
 - Techniques for identifying birds by sight and sound
 - Use of field guides and identification keys
 - Bird taxonomy and classification
 4. Bird Ecology and Behavior (5 hours)
 - Ecological roles of birds in ecosystems
 - Feeding habits, migration, and breeding behaviours
 - Social structures and communication in birds
 5. Bird Conservation (5 hours)
 - Threats to bird populations: habitat loss, climate change, pollution
 - Conservation strategies: protected areas, legislation, community involvement
 - Role of citizen science in bird conservation
 6. Field Research Methods (4 hours)
 - Techniques for bird monitoring: point counts, transects, mist netting, banding
 - Data collection and analysis
 - Ethical considerations in bird research
 7. Case Studies and Practical Applications (3 hours)
 - Analysis of successful and challenging bird conservation projects
 - Practical exercises and fieldwork simulations
 - Current issues and future trends in ornithology

Mode of Assessment

- Quizzes: Weekly quizzes to assess understanding of the material (30% of the final grade).





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- Assignments: Practical assignments and case studies (40% of the final grade).
- Final Exam: Comprehensive exam covering all course topics (30% of the final grade).

Reference Books

1. "Ornithology" by Frank B. Gill
2. "The Sibley Guide to Birds" by David Allen Sibley
3. "Birds of North America: A Guide to Field Identification" by Chandler S. Robbins
4. "Handbook of Bird Biology" by Irby J. Lovette and John W. Fitzpatrick
5. "The Birder's Handbook: A Field Guide to the Natural History of North American Birds" by Paul R. Ehrlich, David S. Dobkin, and Darryl Wheye





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Department of Mathematics (SF)

VALUE ADDED COURSE

offered in 2019-2020

÷ EXPLORING VEDIC
MATHEMATICS

APPLY

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Vedic Mathematics (30 Hours)

Course Overview:

This course introduces students to Vedic Mathematics, an ancient Indian system that simplifies arithmetic operations. The course covers fundamental principles, rapid calculation techniques, and applications in algebra and geometry.

Course Objectives:

- Understand basic principles and techniques of Vedic Mathematics.
- Perform arithmetic operations quickly and accurately using Vedic methods.
- Solve algebraic equations and geometric problems using Vedic techniques.
- Enhance mental calculation skills and mathematical intuition.

Course Outcomes:

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

1. Perform basic arithmetic operations using Vedic techniques.
2. Solve complex algebraic equations efficiently.
3. Apply Vedic methods to solve geometry problems.
4. Increase speed and accuracy in mathematical calculations.

Weekly & Hourly Schedule:

Week 1: Introduction to Vedic Mathematics (3 Hours)

- **Hour 1:** Overview of Vedic Mathematics; History and significance
- **Hour 2:** Introduction to basic Sutras (Formulae)
- **Hour 3:** Basic principles and initial examples

Week 2: Basic Arithmetic Operations (3 Hours)

- **Hour 1:** Addition techniques
- **Hour 2:** Subtraction techniques
- **Hour 3:** Multiplication using Vedic methods (Vertically and Crosswise)

Week 3: Advanced Multiplication and Division (3 Hours)

- **Hour 1:** Multiplication of large numbers
- **Hour 2:** Division techniques (Nikhilam method)
- **Hour 3:** Practice and application of multiplication and division





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Week 4: Squares and Square Roots (3 Hours)

- • **Hour 1:** Finding squares using Duplex method
- **Hour 2:** Finding square roots using the Vedic method
- Hour 3:** Practice problems and applications

Week 5: Cubes and Cube Roots (3 Hours)

- • **Hour 1:** Finding cubes using Vedic techniques
- **Hour 2:** Finding cube roots using Vedic methods
- Hour 3:** Practice problems and applications

Week 6: Algebraic Applications (3 Hours)

- • **Hour 1:** Solving simple algebraic equations
- **Hour 2:** Quadratic equations using Vedic Mathematics
- Hour 3:** Factorization techniques

Week 7: Fractions and Decimals (3 Hours)

- • **Hour 1:** Simplifying fractions using Vedic methods
- **Hour 2:** Operations with decimals
- Hour 3:** Conversion between fractions and decimals

Week 8: Geometry Applications (3 Hours)

- • **Hour 1:** Basic geometric concepts using Vedic techniques
- **Hour 2:** Area and perimeter calculations
- Hour 3:** Pythagorean theorem applications

Week 9: Speed Mathematics (3 Hours)

- • **Hour 1:** Mental calculations
- **Hour 2:** Speed techniques for competitive exams
- Hour 3:** Practice sessions

Week 10: Review and Applications (3 Hours)

- • **Hour 1:** Comprehensive review of all topics covered
- **Hour 2:** Real-life applications of Vedic Mathematics
- Hour 3:** Q&A and problem-solving session

References:

1. "Vedic Mathematics" by Jagadguru Swami Sri Bharati Krishna Tirthaji Maharaja - Primary reference for Vedic techniques.
"The Trachtenberg Speed System of Basic Mathematics" by Jakow





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2. **Trachtenberg** - Additional rapid calculation techniques.
"Secrets of Mental Math: The Mathemagician's Guide to Lightning
3. **Calculation and Amazing Math Tricks"** by Arthur Benjamin and Michael Shermer - Enhancing mental math skills.
4. **Online resources and tutorials on Vedic Mathematics** - Websites like vedicmaths.org and various YouTube channels for supple

Assessment:

- Weekly quizzes and problem-solving assignments (40%)
- Mid-term exam (20%)
- Final exam (30%)
- Participation and attendance (10%)

Instructor:

[Instructor Name]
 [Contact Information]
 [Office Hours]

This syllabus ensures a structured and comprehensive approach to learning Vedic Mathematics over a 10-week period, providing both theoretical understanding and practical skills.





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DEPARTMENT OF COMPUTER APPLICATION

Certificate Course

Offered in 2019-2020

- ▶ WEB DESIGNING USING HTML AND CSS
- ▶ INTRODUCTION TO DATA ANALYTICS

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VALUE ADDED COURSE

Department of Computer Application, The Cochin College.

ADBCA1901 : WEB DESIGNING USING HTML AND CSS

Duration: 30 Hours

Course Description:

This course covers the basics of web designing using HTML (Hypertext Markup Language) and CSS (Cascading Style Sheets).

Course Objectives: _

- Understand the basics of HTML and CSS
- Learn how to create web pages using HTML and CSS
- Understand how to design and layout web pages
- Apply best practices for web designing

Course Outline:

Module 1 (6 hours)

- Introduction to HTML
- Basic HTML structure and syntax
- HTML elements (headings, paragraphs, links, images, etc.)
- HTML attributes and semantic meaning

Module 2 (6 hours)

- Introduction to CSS_
- Basic CSS syntax and selectors
- CSS properties and values
- Understanding the box model and layout

Module 3 (6 hours)

- Web Page Structure and Design_
- Creating web page layouts using HTML and CSS
- Understanding grid and flexbox layouts
- Designing for responsiveness and mobile devices





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Module 4 (6 hours)

- Advanced CSS Topics_
- CSS pseudo-classes and pseudo-elements
- CSS media queries and responsive design
- CSS preprocessors like Sass or Less

Module 5 (6 hours)

- Web Design Best Practices and Project Development
- Understanding accessibility and usability
- Designing for user experience (UX)
- Developing a complete web project using HTML and CSS

Assessment of Outcomes:

- Quizzes and assignments (40%)
- Project development and implementation (30%)
- Final exam (30%)

Reference Books

"HTML and CSS: Design and Build Websites" by Jon Duckett

"Learning Web Design: A Beginner's Guide to HTML, CSS, JavaScript, and Web Graphics" by Jennifer Robbins

"CSS: The Missing Manual" by David Sawyer McFarland





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VALUE ADDED COURSE

Department of Computer Application, The Cochin College.

ADBCA1903 : INTRODUCTION TO DATA ANALYTICS

Duration: 30 Hours

Course Description:

This course provides a comprehensive introduction to the principles and practices of data analytics, including data preparation, analysis, and visualization.

Course Objectives:

- Understand the basics of data analytics and its applications
- Learn to work with data structures and databases
- Develop skills in data visualization and reporting
- Understand statistical concepts and data modeling techniques
- Apply data analytics tools and techniques to real-world problems

Course Outline:

Module 1 (6 hours)

- Introduction to Data Analytics*
- Definition and scope of data analytics
- Types of data analytics: descriptive, predictive, and prescriptive
- Data analytics workflow: data collection, cleaning, analysis, and visualization

Module 2 (6 hours)

- Data Preparation and Cleaning
- Data types and data quality
- Data preprocessing: handling missing values, outliers, and duplicates
- Data transformation and normalization

Module 3 (6 hours)

- Data Visualization
- Introduction to data visualization tools: Excel, Tableau, Power BI
- Creating effective visualizations: charts, graphs, heatmaps, and dashboards





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- Best practices for data visualization

Module 4 (6 hours)

- Statistical Concepts and Data Modeling
- Introduction to statistical concepts: mean, median, mode, and standard deviation
- Data modeling techniques: regression, correlation, and clustering
- Introduction to machine learning algorithms

Module 5 (6 hours)

- Data Analytics Tools and Techniques
- Introduction to data analytics tools: Excel, Python, R, and SQL
- Data manipulation and analysis using SQL
- Data analysis using Python and R

Assessment of Outcome

- Quizzes and assignments (40%)
- Group project and presentation (30%)
- Final exam (30%)

Reference

"Python for Data Analysis" by Wes McKinney

"The Art of Data Science" by Roger D. Peng and Elizabeth Matsui

"Data Analytics Made Accessible" by Anil Maheshwari






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Department of English

Value Added Course

Offered in 2019-2020

- ◆ **LIFE WRITINGS IN ENGLISH**
- ◆ **WRITING FOR MEDIA:
JOURNALISM, BLOGGING, AND
CONTENT CREATION.**

APPLY

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The Cochin College
B.A. English Language and Literature
Add on Course 2019-2020
Life Writings in English
SYLLABUS

Total Hours:30

Objectives:

- To understand the role of personal experience in writing and how it shapes an author's work and perspective.
- To explore how poets use language, form and imagery to express profound experiences and reflections on life.
- To provide students with contemporary examples of life writing that explore personal experiences, challenges and transformations.
- To develop empathy, emotional awareness and better interpersonal skills in students by delving into complex emotions and relationships.
- To help students to reflect upon their own lives and identities.

Module 1: Importance of Life Writings (6hours)

1.1. George Orwell: "Why I Write."
1.2. James Baldwin: "Notes of a Native Son."

Module 2: Poems on Life Writings (5 hours)

2.1. Langston Hughes: "Mother to Son."
2.2. Maya Angelou: "Still I Rise."
2.3. William Wordsworth: "I Wandered Lonely As a Cloud."
2.4. Percy Bysshe Shelley: "Ozymandias"
2.5. W.H. Auden: "Funeral Blues"

Module 3: Modern Novels on Life Writing (8 hours)

3.1. Anne Frank: The Diary of a Young Girl.
3.2. Ernest Hemingway: A Moveable Feast.

Module 4: Snapshots of Life Writing (6 hours)





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4.1. Chinua Achebe: "Girls at War"

4.2. Guy de Maupassant: "The Necklace."

Module 5: Exploring Life Writing Through a Popular Play (4 hours)

5.1. Eugene O'Neill. Long Day's Journey into Night.

Suggested Readings:

1. Angelo, Maya. I Know Why the Caged Bird Sings. Random House.1969.

2. Baldwin, James. The Fire Next Time. Dial Press, 1963.

3. Keller, Helen. The Story of My Life. Doubleday, Page & Co., 1993.

4. Obama, Barack. Dreams from My Father: A Story of Race and Inheritance.

Three Rivers Press, 2004.

5. Woolf, Virginia. Moments of Being: A Collection of Autobiographical Writing.

Harcourt Brace Javanovich. 1985.





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Writing for Media: Journalism, Blogging, and Content Creation.

Program Outcome:

To develop the skills and knowledge necessary to produce engaging, accurate, and ethical content across various media platforms, including journalism, blogs, and other forms of digital content creation.

Course Outcome

1. To analyse and apply journalistic principles to create compelling and informative news articles.
2. To develop and refine blogging skills, including content creation, audience engagement, and digital marketing strategies.

Module 1: Introduction to Media Writing

- Overview of media writing
- Differences between journalism, blogging, and other forms of content creation
- Ethical considerations in media writing

Module 2: Journalism Fundamentals

- News values and story selection
- Reporting techniques and source verification
- Writing leads and structuring news articles

Module 3: Blogging and Digital Content Creation

- Establishing a blog and defining its purpose
- Writing engaging blog posts
- Using multimedia (images, videos, infographics)

Module 4: Audience Engagement and Digital Marketing

- Understanding and analysing audience demographics
- Social media strategies for content promotion
- Email marketing and newsletters





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Module 5: Advanced Content Creation and Career Development

- Long-form content creation (features, investigative pieces)
- Freelancing and building a portfolio
- Navigating the job market in media

References:

1. Introduction to Media Writing:

The Elements of Journalism by Bill Kovach and Tom Rosenstiel

Media Ethics: Issues and Cases by Philip Patterson and Lee Wilkins

2. Journalism Fundamentals:

The Associated Press Stylebook by Associated Press

Reporting for the Media by John R. Bender et al.

3. Blogging and Digital Content Creation:

ProBlogger: Secrets for Blogging Your Way to a Six-Figure Income by Darren Rowse and Chris Garrett

Everybody Writes by Ann Handley

4. Audience Engagement and Digital Marketing:

Jab, Jab, Jab, Right Hook: How to Tell Your Story in a Noisy Social World by Gary Vaynerchuk

Content Strategy for the Web by Kristina Halvorson and Melissa Rach

5. Advanced Content Creation and Career Development:

The New Journalism by Robert S. Boynton

The Freelance Content Marketing Writer: Find Your Perfect Clients, Make Tons of Money and Build a Business You Love by Jennifer Goforth Gregory





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THE COCHIN COLLEGE

KOOVAPADAM, KOCHI-2

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DEPARTMENT OF ECONOMICS

VALUE ADDED

COURSE



offered in 2019-2020



DEVELOPING LIFE SKILLS



LOGISTICS AND SUPPLY CHAIN

APPLY

<https://forms.gle/zJ3ApbXmTTb37KYW9>





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DEPARTMENT OF ECONOMICS ADD ON COURSE 2019-20 SYLLABUS AND CURRICULUM

I) Developing Life Skills (30 Hours)

Overview

This 30-hour add-on course in Developing Life Skills is designed to provide students with essential skills needed to navigate personal and professional challenges. The course covers a range of life skills that are critical for personal development, effective communication, decision-making, and emotional well-being.

Course Objectives

- To enhance students' self-awareness and personal growth.
- To improve communication and interpersonal skills.
- To develop effective problem-solving and decision-making abilities.
- To foster emotional intelligence and stress management techniques.
- To equip students with skills for personal and professional success.

Curriculum

Module 1: Self-awareness and Personal Growth (5 Hours)

- Understanding Self-awareness and its Importance
- Setting Personal Goals
- Building Self-confidence and Self-esteem
- Time Management and Prioritization
- Developing a Growth Mindset

Module 2: Effective Communication Skills (5 Hours)

- Principles of Effective Communication
- Verbal and Non-verbal Communication
- Active Listening Skills
- Assertiveness and Confidence in Communication





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- Public Speaking and Presentation Skills

Module 3: Interpersonal Skills and Relationships (5 Hours)

- Building and Maintaining Healthy Relationships
- Teamwork and Collaboration
- Conflict Resolution and Negotiation Skills
- Empathy and Understanding Others
- Networking and Social Skills

Module 4: Problem-solving and Decision-making (5 Hours)

- Understanding Problem-solving Processes
- Creative Thinking and Innovation
- Critical Thinking Skills
- Decision-making Models and Strategies
- Handling Uncertainty and Making Informed Choices

Module 5: Emotional Intelligence and Stress Management (5 Hours)

- Introduction to Emotional Intelligence
- Recognizing and Managing Emotions
- Coping Strategies for Stress and Anxiety
- Building Resilience and Adaptability
- Mindfulness and Relaxation Techniques

Module 6: Personal and Professional Development (5 Hours)

- Career Planning and Goal Setting
- Developing a Professional Attitude
- Work-life Balance
- Financial Literacy and Planning
- Lifelong Learning and Continuous Improvement

Assessment

- Class Participation and Attendance (10%)
- Quizzes and Assignments (30%)
- Group Activities and Role-plays (30%)
- Final Project or Presentation (30%)

Learning Outcomes





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Upon completing the course, students will be able to:

- Enhance self-awareness and personal growth.
- Communicate effectively and build strong interpersonal relationships.
- Apply problem-solving and decision-making skills in various contexts.
- Manage emotions and stress effectively.
- Develop skills for personal and professional success.

II) LOGISTICS AND SUPPLY CHAIN(30 Hours)

Course Summary

The course is crafted to offer students an in-depth grasp of the principles and practices essential for managing logistics and supply chains. It aims to equip students with the necessary skills to thrive in this dynamic field, emphasising the practical application of concepts and the integration of modern technology in logistics and supply chain management.

Course Objectives

- To understand the key concepts and principles of logistics and supply chain management.
- To learn about the different components and functions of a supply chain.
- To gain insights into the latest trends and technologies in logistics and supply chain management.

Curriculum

Module 1: Introduction to Logistics and Supply Chain (5 Hours)

- Definition and Importance of Logistics and Supply Chain
- Components of Logistics and Supply Chain
- Key Concepts: Supply Chain Flows, Supply Chain Drivers, and Metrics
- Role of Logistics in Supply Chain Management

Module 2: Logistics Management (5 Hours)

- Transportation Management
 - Modes of Transportation
 - Transportation Planning and Management





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- Warehouse Management
 - Warehouse Functions and Operations
 - Inventory Management
- Packaging and Material Handling
- Logistics Network Design

Module 3: Supply Chain Planning and Strategy (5 Hours)

- Supply Chain Strategy and Planning
- Demand Forecasting and Planning
- Supply Chain Integration and Coordination
- Strategic Sourcing and Procurement

Module 4: Technology in Logistics and Supply Chain (5 Hours)

- Role of Information Technology in Supply Chain Management
- E-commerce and its Impact on Logistics
- Supply Chain Software and Tools
- Emerging Technologies: IoT, Blockchain, AI, and Big Data Analytics

Module 5: Global Supply Chain Management (5 Hours)

- Global Supply Chain Dynamics
- International Trade and Logistics
- Managing Global Supply Chains
- Risk Management in Global Supply Chains

Module 6: Sustainable Supply Chain Management (5 Hours)

- Sustainability in Supply Chain Management
- Green Logistics
- Corporate Social Responsibility and Supply Chains
- Case Studies in Sustainable Supply Chain Practices

Assessment

- Class Participation and Attendance (10%)
- Quizzes and Assignments (30%)
- Case Study Analysis and Presentation (30%)
- Final Exam (30%)

Learning Outcomes





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Upon completing the course, students will be able to:

- Understand the fundamental concepts of logistics and supply chain management.
- Apply logistics and supply chain management principles to real-world scenarios.
- Utilise modern technology to enhance logistics and supply chain operations.
- Develop strategies for managing global supply chains effectively.
- Incorporate sustainability into supply chain management practices.





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Department of Chemistry

VALUE ADDED COURSE

offered in 2019-2020

- > **FOOD CHEMISTRY AND NUTRITION**
- > **FOOD CHEMISTRY**

APPLY

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Department of Chemistry

2019-20

(Value Added Course Syllabus for UG students)

Food Chemistry and Nutrition

course outcomes

1. Understand the chemical composition of major food components
2. Discuss the chemical reactions occurring in food systems
3. Examine the role of enzymes in food processing
4. Analyse the chemical changes during food processing and storage
5. Discuss emerging issues in food chemistry
6. Demonstrate understanding of food safety and quality assurance
7. Apply knowledge of food chemistry principles to solve problems
8. Learn the nutritional functions and health impacts of various food components.
9. Analyse the relationship between diet, health, and disease.

Course Outline

Instructional Hours: 30 hrs

Module 1: Introduction to Food Chemistry:

Definition and scope of food chemistry, Importance of food chemistry in food science and technology. **Chemical Composition of Food:** Macronutrients: carbohydrates, lipids, proteins, Micronutrients: vitamins, minerals, phytochemicals.

Module 2: Carbohydrates, Lipids and Proteins

Classification and properties of carbohydrates, Reactions of carbohydrates: Maillard reaction, caramelization, fermentation. Functions of carbohydrates in food systems. **Lipids:** Types of lipids in foods (fats, oils, waxes), Chemical and physical properties of lipids, Lipid oxidation and rancidity. **Proteins:** Amino acids and peptide bonds, Protein structure and functionality, Protein denaturation and coagulation.

Module 3: Emerging Issues in Food Chemistry:

Food authenticity and adulteration, Food nanotechnology and food packaging.

Module 4: Diet and Health





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Dietary guidelines and nutrient recommendations, Relationship between diet and chronic diseases (obesity, diabetes, cardiovascular diseases), Role of diet in health promotion and disease prevention

Module 5: Food Labelling and Nutritional Claims

Understanding food labels and nutritional information, Regulatory aspects of food labelling, Evaluating nutritional claims and marketing strategies

References

1. "Food Chemistry"
 - **Authors:** Owen R. Fennema, Srinivasan Damodaran, and Kirk L. Parkin
 - **Publisher:** CRC Press
 - **Year:** 2017 (5th Edition)
 - **ISBN:** 978-0813808749

2. "Principles of Food Chemistry"
 - **Author:** John M. deMan
 - **Publisher:** Springer
 - **Year:** 2018 (4th Edition)
 - **ISBN:** 978-3319784486

3. "Food Science and Technology"
 - **Editor:** Geoffrey Campbell-Platt
 - **Publisher:** Wiley-Blackwell
 - **Year:** 2017 (2nd Edition)
 - **ISBN:** 978-0470673423

4. "Advanced Nutrition and Human Metabolism"
 - **Authors:** Sareen S. Gropper and Jack L. Smith
 - **Publisher:** Cengage Learning
 - **Year:** 2016 (7th Edition)
 - **ISBN:** 978-1305627857





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Department of Chemistry

2019-20

(Value Added Course Syllabus for UG students)

Food Chemistry

course outcomes

1. Understand the chemical composition of major food components
2. Explain the role of water in food systems
3. Discuss the chemical reactions occurring in food systems
4. Examine the role of enzymes in food processing
5. Evaluate the impact of food additives on food quality and safety
6. Analyze the chemical changes during food processing and storage
7. Discuss emerging issues in food chemistry
8. Demonstrate understanding of food safety and quality assurance
9. Apply knowledge of food chemistry principles to solve problems

Course Outline

Instructional Hours: 30 hrs

Module 1: Introduction to Food Chemistry: 5hrs

Definition and scope of food chemistry, Importance of food chemistry in food science and technology. **Chemical Composition of Food:** Macronutrients: carbohydrates, lipids, proteins, Micronutrients: vitamins, minerals, phytochemicals.

Module 2: Carbohydrates, Lipids and Proteins 10hrs

Classification and properties of carbohydrates, Reactions of carbohydrates: Maillard reaction, caramelization, fermentation. Functions of carbohydrates in food systems. **Lipids:** Types of lipids in foods (fats, oils, waxes), Chemical and physical properties of lipids, Lipid oxidation and rancidity. **Proteins:** Amino acids and peptide bonds, Protein structure and functionality, Protein denaturation and coagulation.

Module 3: Food Additives 10hrs

Types and functions of food additives, Regulation and safety of food additives **Food Flavors:** Chemistry and sources of food flavours, Flavour perception and aroma compounds. **Food Colorants:** Natural and synthetic food colorants, Stability and regulation of food colorants





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Module 4: Food Processing and Storage

10hrs

Chemical changes during food processing and storage, Shelf-life determination and factors affecting shelf-life **Analytical Techniques in Food Chemistry:** spectroscopic methods (NMR, IR, UV-Vis), Chromatographic techniques (HPLC, GC), Mass spectrometry, **Food Safety and Quality:** Chemical contaminants in food, Methods of food quality assessment

Module 5: Emerging Issues in Food Chemistry:

5hrs

Food authenticity and adulteration, Food nanotechnology and food packaging.

References

1. "Food Chemistry"
 - o **Authors:** Owen R. Fennema, Srinivasan Damodaran, and Kirk L. Parkin
 - o **Publisher:** CRC Press
 - o **Year:** 2017 (5th Edition)
 - o **ISBN:** 978-0813808749

2. "Principles of Food Chemistry"
 - o **Author:** John M. deMan
 - o **Publisher:** Springer
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3. "Food Science and Technology"
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Brochure & Syllabus
-Certificate/Value added courses offered during 2019-20

 **THE COCHIN COLLEGE**
KOOVAPADAM, KOCHI-2
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DEPARTMENT OF ZOOLOGY

VALUE ADDED COURSE

OFFERED IN 2019-2020

 **SOLID WASTE
MANAGEMENT**

<https://forms.gle/zj3AppXmTTb37KYW9>





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VALUE ADDED COURSE

Department of Zoology, The Cochin College.

ADZOO1902 : SOLID WASTE MANAGEMENT

Regulations and Syllabus

1. Description of the course / objective of the course

Participants completing the courses will be equipped with good insight into the current environmental and health problems/self-employment generation.

2. Eligibility for admission

Candidates for admission to the courses shall have passed plus two in any discipline.

3. Duration of the course

The duration of the courses shall be for one year. The total number of contact classes shall be 30 hours.

4. Examination

The participants will be undergoing a continuous assessment throughout his/her period of study. The evaluation will consist of external examination at the end of the course (online/offline MCQ) for each subject based on the specific requirements of the respective subjects

5. Syllabus The detailed syllabus for the course is as follows





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VALUE ADDED COURSE

Department of Zoology, The Cochin College.

ADZOO1902 : SOLID WASTE MANAGEMENT

(Total Hours - 30)

Course Outcomes

CO1 Familiarise different methods of solid waste management

CO2 Appreciate sustainable development through biowaste management

CO3 Create a model solid waste management system for their locality

Module - I (6hrs)

Municipal solid waste

Definition - Sources and types of solid waste- composition and its determinants of Solid waste-factors influencing generation-quantity assessment of solid wastes-methods of sampling and characterization.

Module - II (8hrs)

Collection and Transfer

Collection: Collection of Solid waste – collection services – collection system, equipments – time and frequency of collection – labour requirement – factors affecting collection – analysis of collection system – collection routes – preparation of master schedules.

Transfer and Transport: Need for transfer operation – transfer stations – types–transport means and methods – location of transport stations – Manpower requirement – collection routes: Transfer stations – selection of location, types & design requirements, operation & maintenance.

Module - III (6hrs)

Biowaste management and Sustainable Development

Environment and Sustainable Development –An Overview. Habit of Green Protocol for Sustainable Development, Sustainable Living and waste management, Vermicomposting Techniques and Biowaste management. Various methods of Biowaste compositing: A home solution. Food wastage...pandhals, parties and us

Module - IV (6hrs)

Disposal of Solid Wastes

Refuse disposal – various methods – incinerations – principle features of an incinerator – site selection and plant layout of an incinerator – sanitary landfill- methods of





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operation – advantages and disadvantages of sanitary landfill - site selection – reactions accruing in completed landfills – gas and leachate movement and control – equipments necessary.

Module- V (4hrs)

BIOMAG- A model of community Waste Management Program - Project undertaken by the Department of Zoology, The Cochin College to propose a model of waste management which is the need of the hour.

References

- 1) George Techobanoglous et al, "Integrated Solid Waste Management" McGraw - Hill, 1993.
- 2) Techobanoglous Thiesen Ellasen; Solid Waste Engineering Principles and Management, McGraw - Hill 1997.
- 3) R.E.Landrefh and P.A.Rebers, "Municipal Solid Wastes-Problems & Solutions", Lewis, 1997.
- 4) Manual on Municipal Solid waste Management, CPHEEO, Ministry of Urban Development, Govt. Of. India, New Delhi, 2000.
- 5) Blide A.D.& Sundaresan, B.B, "Solid Waste Management in Developing Countries", INSDOC, 1993.
- 6) Ecology Science and Practice; Claude Fourie, Christian Ferra, Paul Medori, Tean Devaux, Oxford and IBH Publishing Co (Pvt) LTD, special Indian edition.
- 7) Principles of Ecology- P.S.Verma, V.K.Agarwal.S.Chand & Company (Pvt) LTD 1989.





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DEPARTMENT OF COMMERCE

VALUE ADDED COURSE

OFFERED IN 2019-2020

- MANAGEMENT INFORMATION SYSTEM
- LOGISTICS MANAGEMENT

APPLY

<https://forms.gle/zj3ApbXmTTb37KYW9>



Mrudula Menon V.
 Mrudula Menon V.
 Principal-in-Charge
 The Cochin College



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ADD ON COURSE FOR ACADEMIC YEAR 2019-2020

POST GRADUATE & RESEARCH DEPARTMENT OF COMMERCE

Management Information System

Duration – 30 Hours

Objectives of the Course:

1. To describe the role of information technology and decision support systems in business and record the current issues with those of the firm to solve business problems.
2. To introduce the fundamental principles of computer-based information systems analysis and design and develop an understanding of the principles and techniques used.
3. To enable students understand the various knowledge representation methods and different expert system structures as strategic weapons to counter the threats to business and make business more competitive.

Course Overview:

The student is able to understand an MIS in real-life situation, • Identify the need of MIS, implementation issues in MIS in that organization and future trends in that system.

Eligibility: B.Com Taxation Students

Module I - Decision making in MIS – Overviews of System, analysis & design system development life cycle. Concepts & model – requirement and recognition structured & unstructured decision.

(5 Hours)

Module II- System design & implementation – Overview of logical of input output & control process & interface design, database design, implementation of MIS projects.

(5 Hours)

Module III- Data Base Management – Management corporate data, data resources, data independence, consistency, security & integrity data base models – helical rational advantages & disadvantages of DBMS.

(7 Hours)

Module IV- Data Communication EDI electronic Data interchange. Net working concepts, LAN, WAN Components of LAN, WAN Network topologies difference between internet, intranet, Extranet.

(6 Hours)

Module V- Introduction of E. Com – Introduction, concept, recent trends, business reengineering process, electronic funds transfer legal security issues of e-commerce.

(7 Hours)

References

1. Jawadkar, W.S., “Management Information Systems”, Tata McGraw Hill Private Limited, New Delhi, 2009.
2. Kenneth C. Laudon and Jane P. Laudon: “Management Information Systems” 9/e, Pearson Education, New Delhi.
3. Alex Leon and Mathew Leon: “Data Base Management Systems”, Vikas Publishing House, New Delhi.





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ADD ON COURSE FOR ACADEMIC YEAR 2019-2021 POST GRADUATE & RESEARCH DEPARTMENT OF COMMERCE LOGISTICS MANAGEMENT

Duration – 30 Hours

Objectives of the Course

- Discuss about the importance of logistics & its role in the Indian Economy
- Summarize various activities of logistics to satisfy the end Customers
- Appraise the strategies
- Analyse sea transport
- Evaluate ship management

Course Overview

To enable the students to deal with the different activities involved in logistics management.

Eligibility: Degree Level Education for B Com students

Module I – Logistics- Definition - History and Evolution- Objectives-Elements-activities importance- The work of Logistics-Logistics interface with marketing-retails Logistics-Emerging concept in logistics. (8 Hours)

Module II - Logistics Management-Definition-Achievement of competitive advantage through logistics Framework- Role of Logistics management-Integrated Logistics Management- Evolution of the concept- model - process- activities (6 Hours)

Module III - Outsourcing logistics-reasons - Logistics Strategy-Strategic role of logistics- Definition-role of logistics managers in strategic decisions- Designing & implementing logistical strategy (6 Hours)

Module IV - The reasons for Sea Transport – Introduction – Why Ships – Different Shipping markets – Trades - Conclusion – Ship Registration – Port State Control – Ship Classification – Types of Ships the Dry Cargo Chartering market – Introduction – Chartering – Chartering Negotiations (5 Hours)

Module V - Ship Sale & Purchase – Ship Management, Maritime Geography – Introduction – Ocean & Seas – Ports – Geography of trade - Accounts – Introduction – Accounting – Capital – Credit – management accounting – CashFlow- Costs - Fundamentals of English Law – Arbitration





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- The Contract – Remedies for breach of Contract (5 hours)

References

1. Farahani, R., Rezapour, S. (2011). Logistics Operations and Management: Concepts and Models. Netherlands: Elsevier Science.
2. Waters, C. D. J. (2003). Logistics: An Introduction to Supply Chain Management (C. D. J. Waters, Ed.). Palgrave Macmillan
3. Ghiani, G., Musmanno, R., & Laporte, G. (2013). Introduction to Logistics Systems Management. Wiley.
4. Chase, R. B., Jacobs, F. R. (2016). Operations and Supply Chain Management: The Core. United Kingdom: McGraw-Hill Education.
5. Kasilingam, R. G. (2012). Logistics and Transportation: Design and Planning. Netherlands: Springer US.





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Department of Business Administration

CERTIFICATE COURSE

Offered in 2019-2020

- ◆ **Asset Management**
- ◆ **Financial Markets**

APPLY

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DEPARTMENT OF BUSINESS ADMINISTRATION

VALUE ADDED COURSE

Name of the course	: Asset Management
Duration of the course	: 30 hrs.
Strength	: 30
Course Code	: ADBBA1902
Coordinator	: Betna Rodrigues

Course Overview

The program is designed to help current and aspiring financial professionals employ the best practices when putting together an investment portfolio. You'll learn about key terminology, investment products, and asset allocation strategies to maximize return on investments.

Course Objective

- To understand Asset Management and how it can contribute to the realisation of the corporate strategy of organisation.
- To implement effective Asset Management practices.
- To devise an implementation plan for Asset Management.
- To realise the financial implications of asset management decisions and translate technical issues into business consequences.

Course Outcome

- Improve student's ability to acquire and utilize assets by tracking their company's assets throughout their lifecycle.
- Enhance compliance with government protocols and procedures pertaining to your organisational assets.
- Assess which asset management objectives are feasible and which ones need to be prioritised.
- Learn and apply standards in Asset Management, safe operation and monitoring of equipment, and equipment maintenance.

Course Outline

Module 1: Introduction to Asset Management (6 hours)

Introduction to Asset Management - Business Processes for Asset Management - Asset Management Landscape Model - Strategy Framework - Line of Sight - Asset Management Policies - Asset Management Strategy - Goal Setting - Strategic Asset Management Plan - Asset Management Roles: Roles, Expectations, and Responsibilities

Module 2: Asset Management Practices (6 hours)

Key Aspects of Asset Management: Assets, Value, Leadership, Alignment, Assurance - Identifying Risk - Significance of Risk - Risk Management on Business Level - Stakeholder Management - Risk Based Maintenance for Assets





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Module 3: Facilities Management Practice

(6 hours)

Sourcing & Outsourcing - Procurement Aspects - Defining Level of Service - Defining the Right KPI - How to Measure the Contractor Performance - How to Measure the 3rd Party Contractor Performance - Vendor Management

Module 4: Operation and Practices

(6 hours)

Assets & Facilities Life Cycle Management - Demand Forecasting - Systems Engineering - Condition Assessment and Monitoring - Information & Configuration Management - Life Cycle Costing

Module 5: Strategy Planning & Implementation Aspects

(6 hours)

Asset Management Assessment - Assessment Tools - Asset Management Teams - Changing the Behaviour of People - Implementation of Asset Management.

Mode of Assessment

Comprehensive assessment covering all course topics

Reference Books

1. "Asset management - A systematic approach to factor investing" by Andrew ANG
2. "Operations management - sustainability and supply chain management" by Amit Sachan, Jay Heizer





THE COCHIN COLLEGE

KOCHI - 682 002

(Affiliated to Mahatma Gandhi University and Accredited by NAAC)

Website: www.thecochoincollege.edu.in

email: email@thecochoincollege.edu.in

FINANCIAL MARKETS

Course code: ADBBA1903

Coordinator : Jeffy Thomas

3rd YEAR 2017-20 BATCH

Course Overview

The Financial Markets course offers a comprehensive exploration of the financial system, enabling students to understand the intricacies of risk management and enterprise development. This course delves into the principles of financially savvy leadership, risk management, and behavioral finance, while also examining the securities, insurance, and banking industries.

Course Objectives

1. To gain comprehensive knowledge of how financial markets operate
2. To understand the role of financial markets in the economy
3. To analyze the causes and consequences of financial crises and learn about measures to promote financial stability

Outcome of the course

- Students may pursue careers in investment banking, asset management, financial analysis etc.
- Develop analytical skills in students
- Develop a deep understanding of how financial markets operate

Course Outline

1. Introduction to financial system (15 Hours)

Financial system- features- Indian financial system- components- role and functions- classifications of financial markets- capital market- industrial securities market- govt. securities market- money market- features- instruments- modern financial instruments- difference between money market and capital market

2. Primary and secondary market (15 Hours)

Primary market- functions of new issue market- methods of floating new issues- public issue- private placement- right issue- bonus issue- employee's stock option plans- methods of pricing an issue- fixed price issue- book building- intermediaries in new issue markets- secondary markets- stock exchange- role and functions- types of traders

Mode of Assessment

- Exam: Comprehensive exam covering all course topics

Reference books

1. The Indian financial system: markets, institutions and services by Bharati V Pathak
2. Financial institutions and markets: structure, growth and innovation by L. M Bhole and





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Jithendra Mahakud

3. Financial markets and services by Dr. L Natarajan





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THE COCHIN COLLEGE
KOOVAPADAM, KOCHI-2
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Department of commerce (SF)

VALUE ADDED COURSE

offered in 2019-2020

- ▶ **INVESTMENT BANKING**
- ▶ **INVENTORY & WAREHOUSING MANAGEMENT**



APPLY

<https://forms.gle/zj3ApbXmTTb37KYW9>





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INVENTORY AND WAREHOUSING MANAGEMENT

Course Overview

This 30-hour certificate course in Inventory and warehouse management provides a comprehensive introduction to Warehouse and Inventory Management which provides participants with the knowledge and skills necessary to effectively manage warehouse operations and optimize inventory control. This course covers various aspects of warehouse management, including inventory accuracy, efficiency, cost reduction, customer service, and risk mitigation.

Course Objective

- To learn about order prioritisation, cross-docking, and fulfilment strategies that ensure products are available when customers need them, reducing lead times and improving order fulfilment rates.
- Emphasis on customer satisfaction and loyalty can contribute to the overall success of a business.
- Make needed changes to methods to improve customer service whilst achieving reductions in inventory, Eliminate wasteful costs, Avoid those internal problems that limit performance.

Course Outline

1. Introduction to Inventory

- Definition, principles, role and functions
- Types of inventory, inventory policy
- Inventory management

2. Inventory control and methods

- Inventory ranking methods, Quadrant technique
- FIFO, LIFO
- EOQ, EOQ, ROL
- ABC analysis, Just in Time Analysis
- Risk management

3. Warehouse Management

- Definition, Principle, Role, Importance of warehouse management
- Warehouse selection and planning, functions and operations of warehouse
- Locations and Area of warehouse
- Factors affecting warehousing cost
- Warehouse layout, Design principles

Mode of Assessment

Final Exam: Comprehensive exam covering all course topics

Reference Books

- Best practice in Inventory Management, John Wiley and sons
- Hadley.G and Whitin T.M, Analysis of Inventory System, Prentice Hall
- Naddor.E, Inventory System, John Wiley
- Basics of Warehouse and inventory management, Villivaram Rangachari Rangarajan
- Warehouse Management, Stuart Emmett
- Scientific inventory management, Buchan.J and Konigsberg.E.



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Department of commerce (SF)

VALUE ADDED COURSE

offered in 2019-2020

- ▶ **INVESTMENT BANKING**
- ▶ **INVENTORY & WAREHOUSING MANAGEMENT**



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INVESTMENT BANKING

Duration 30 hrs

Course outcome :

- To Understanding what investment banking is
- Understanding the importance of investment banking in the process of capital generation

Course objectives:

- Investigating the differences between traditional and investment banking
- Examining the various categories of investment banks and their activities

Module 1 Introduction to investment banking

Evolution of investment banking in India - scope and management of debt and equity- corporate advisory services-project advisory services-loan syndication -venture financing

Module 2 Financial markets

Government securities market - primary and secondary market for government securities- call money market -Discount and finance house of India

Module 3 Merchant banking

Nature and scope of merchant banking- regulation of merchant banking activity -overview of current Indian merchant banking scene -primary market in India and abroad

Assessment procedure:

Final exam - comprehensive test of knowledge

References:

1. Investment Banking: Valuation, Leveraged Buyouts, and Mergers & Acquisitions by Joshua Rosenbaum and Joshua Pearl
2. Investment Banking: Institutions, Politics, and Law by Alan D. Morrison and William J. Wilhelm Jr.
3. Investment Banking Explained: An Insider's Guide to the Industry by Michel Fleuriot





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Brochure & Syllabus
Certificate/Value added courses offered during 2019 – 2020

 **THE COCHIN COLLEGE**
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Department of Chemistry (SF)
VALUE ADDED COURSE
offered in 2020-2021

➤ **CHEMISTRY OF THE HUMAN BODY**

APPLY
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VALUE ADDED COURSE

Department of Chemistry (SF), The Cochin College

ADCSF1901: Chemistry of the Human Body

Duration 30 Hours

****Course Description:****

This course provides an overview of the chemical principles underlying the structure, function, and regulation of biological systems in the human body. Students will explore key concepts in biochemistry, physiology, and molecular biology to understand the chemical processes that govern human health and disease.

****Prerequisites:****

Studying the chemistry of the human body is a fascinating field that requires a solid foundation in various scientific disciplines.

****Week 1: Introduction to Biochemistry and Biomolecules**** (6 hours)

- Overview of biochemistry: scope, importance, and relevance to human health.
- Structure and function of biomolecules: proteins, carbohydrates, lipids, and nucleic acids.
- Enzymes: catalysis, kinetics, and regulation of biochemical reactions.

****Week 2: Metabolism and Energy Production**** (6 hours)

- Cellular respiration: glycolysis, citric acid cycle, and oxidative phosphorylation.
- Lipid metabolism: fatty acid oxidation, ketogenesis, and lipogenesis.
- Regulation of metabolism: hormonal control, feedback mechanisms, and metabolic pathways.

****Week 3: Molecular Genetics and DNA Replication**** (6 hours)

- Structure and function of nucleic acids: DNA and RNA.
- DNA replication: enzymes, replication fork, and fidelity mechanisms.
- Mutations and genetic disorders: causes, types, and consequences.

****Week 4: Protein Synthesis and Gene Expression**** (6 hours)

- Transcription: RNA synthesis, promoters, enhancers, and transcription factors.
- Translation: ribosomes, tRNA, codons, and protein synthesis.
- Regulation of gene expression: transcriptional, translational, and post-translational mechanisms.

****Week 5: Hormones and Signaling Molecules**** (6 hours)





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- Endocrine system: hormones, receptors, and signaling pathways.
- Neurotransmitters and synaptic transmission in the nervous system.
- Cellular signaling: autocrine, paracrine, and endocrine signaling pathways.

****Assessment:****

- Weekly quizzes and assignments (40%)
- Mid-term exam (20%)
- Final project (30%)
- Class participation and engagement (10%)

****Textbook:****

"Biochemistry" by Lubert Stryer, Jeremy M. Berg, and John L. Tymoczko.

****References:****

- "Lehninger Principles of Biochemistry" by David L. Nelson and Michael M. Cox.
- "Molecular Biology of the Cell" by Bruce Alberts, Alexander Johnson, Julian Lewis, et al





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Department of BOTANY

VALUE ADDED COURSE

offered in 2019-2020

- **APICULTURE**
- **MUSHROOM CULTIVATION**

APPLY

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Department of Botany

Add On Course 2019-2020

ADBOT1902-MUSHROOM CULTIVATION

SYLLABUS

Module 1: Introduction to Mushroom Cultivation (10 hours)

- Overview of mushroom cultivation
- Importance of mushrooms in food, medicine, and environmental sustainability
- Types of mushrooms commonly cultivated and their characteristics
- Basic biology and lifecycle of mushrooms
- Introduction to different cultivation methods: indoor, outdoor, small-scale, commercial

Module 2: Cultivation Techniques and Practices (10 hours)

- Understanding the ideal growing conditions for different types of mushrooms
- Substrate selection and preparation techniques (compost, sawdust, straw, etc.)
- Sterilization and pasteurization methods for substrates
- Introduction to different cultivation systems (bags, trays, logs, etc.)
- Setting up and maintaining a suitable growing environment: temperature, humidity, light, airflow

Module 3: Advanced Cultivation and Commercialization (10 hours)

- Advanced spawn production techniques: liquid culture, grain spawn, agar culture
- Inoculation methods and best practices for maintaining sterile conditions
- Managing the incubation and colonization period effectively
- Fruiting techniques and strategies for maximizing yield
- Post-harvest handling, storage, and packaging considerations
- Introduction to commercialization: market opportunities, business planning, regulations, and certifications

