VALUE ADDED COURSE BROCHURE, OUTCOMES, SYLLABUS FOR ACADEMIC YEAR 2019-20

PRIST

Deemed To be university

Estd. U/s 3 of UGC Act 1956

VALLAM, THANJAVUR - 613 403 • TAMILNADU

Web site: www.prist.ac.in

DEPARTMENT OF MECHANICAL ENGINEERING

CIRCULAR

PRIST /MECH/CIRC/ 2019-2020 / EVEN /ADD ON COURSE/01 3.02.2020

It is informed that the ADD-ON COURSES will be conduct from 10.02.2020 to 18.02.2020.

1) CERTIFICATE COURSES

- 3D-PRINTING

Students from mechanical department those who are interest can enroll their names and course to the HOD on or before 07/28/2020

HOD

HOD
Department of Mechanical Engineering
Ponnaiyah Ramajayam Institute of
Science & Technology (PRIST)
(Institution Deemed to be University
U/s 3 of the UGC Act 1956)
THANJAVUR - 613 403, TAMIL NADU.

REGISTRAR
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PRIST

DEPARTMENT OF MECHANICAL ENGINEERING

ABOUT THE INSTITUTION

Pennaiyah Ramajayam Institute of Science and Technology (PRIST), a Deemed University (U/s 3 of the UGC Act 1956), is one of the renowned units of Pennaiyah Ramajayam Institutions, which are serving for more than 35 years in promoting quality education and research for our Indian community, since its inception. The institution is now brimming with many social responsibilities, particularly in promoting quality education through research.

ABOUT THE DEPARTMENT

The department of Mechanical Engineering came into existence in 2006 with an objective to impart quality education to meet today's competitive environment.

Department has well experienced and dedicated faculty with strong commitment to provide a vibrant learning environment to the students in order to help them excel.

To keep pace with the current technological trends, the department has a well designed, constantly reviewed syllabus to incorporate all advancements in existing and emerging technologies which gives the students a holistic and pragmatic view of the present scenario of industry.

INFORMATION BROUCHER
ADD ON COURSE- 3D PRINTING

COURSE HIGHLIGHTS

- *Getting to know the 3D printer, how they work, loading materials, levelling the bed, trouble shooting, extruder maintenance.*
- *3D printing applications in the real world.*
- *Advanced 3D printing in Industry.*
- *Advanced parametric 3D modelling skills e.g. How to model complex shapes with patterns and working to tolerances.*
- *How to slice models and use*

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COURSE OBJECTIVES

[illegible]

PRE-REQUISITES

[illegible]

ELIGIBILITY

[illegible]

COURSE DURATION: [illegible]

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3D PRINTING

OBJECTIVE:

The students should be made to:

- Understand the basic concepts and nuances of 3D Printing Technology

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UNIT I INTRODUCTION

Introduction; Design considerations – Material, Size, Resolution, Process; Modelling and viewing - 3D; Scanning; Model preparation – Digital; Slicing; Software; File formats

9

UNIT II PRINCIPLE

Processes – Extrusion, Wire, Granular, Lamination, Photopolymerisation; Materials - Paper, Plastics, Metals, Ceramics, Glass, Wood, Fiber, Sand, Biological Tissues, Hydrogels, Graphene; Material Selection - Processes, applications, limitations;

9

UNIT III INKJET TECHNOLOGY

Printer - Working Principle, Positioning System, Printhead, Printbed, Frames, Motion control; Printhead Considerations – Continuous Inkjet, Thermal Inkjet, Piezoelectric Drop-On-Demand; Material Formulation for jetting; Liquid based fabrication – Continousjet, Mulitjet; Powder based fabrication – Colorjet;

9

UNIT IV LASER TECHNOLOGY

Light Sources – Types, Characteristics; Optics – Deflection, Modulation; Material feeding and flow – Liquid, powder; Printing machines – Types, Working Principle, Build Platform, Printbed Movement, Support structures;

9

UNIT V INDUSTRIAL APPLICATIONS

Product Models, manufacturing – Printed electronics, Biopolymers, Packaging, Healthcare, Food, Medical, Biotechnology, Displays; Opensource; Future trends;

TOTAL: 45 PERIODS

OUTCOMES:

Upon completion of the course, the student should be able to:

- Learn 3D printing workflow
- Understand the basic types of 3D Printing, materials used and their applications
- Select appropriate method for designing and modeling applications

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TEXT BOOK

1. Ian M. Hutchings, Graham D. Martin, "Inkjet Technology for Digital Fabrication", John Wiley & Sons, 2013.

2. Christopher Barnatt, "3D Printing: The Next Industrial Revolution", CreateSpace Independent Publishing Platform, 2013.

REFERENCES

1. Ibrahim Zeid, "Mastering CAD CAM" Tata McGraw-Hill Publishing Co.2007

2. Joan Horvath, "Mastering 3D Printing", APress, 2014 3. Chua, C.K., Leong K.F. and Lim C.S., "Rapid prototyping: Principles and applications", second edition, World Scientific Publishers, 2010.

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DEPARTMENT OF MECHANICAL ENGINEERING

CIRCULAR

PRIST /MECH/CIRC/ 2019-2020 /VALUE ADDED COURSE/01 28.01.2020

It is informed that the VALUE ADDED COURSE will be conduct from 02.02.2020 to 12.02.2020.
Venue : Lecture hall 2

I) CERTIFICATE COURSES

- COMPUTER NUMERICAL CONTROL OF MACHINE

Students from mechanical department those who are interest can enroll their names and course to the HOD on or before 31.01.2021

HOD

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PRIST

DEPARTMENT OF MECHANICAL ENGINEERING

ABOUT THE INSTITUTION

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ABOUT THE DEPARTMENT

The department of Mechanical Engineering came into existence in 2009 with an objective to impart quality education to meet today's competitive environment.

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INFORMATION BROUCHER ADD ON COURSE- COMPUTER NUMERICAL CONTROL OF MACHINE

COURSE HIGHLIGHTS

- Creating 2D geometry in CAM software
- Creating CNC toolpaths using 2D geometry
- Creating CNC toolpaths using solid models created in CAD software
- Applying previously learned machining concepts to CAM programs for both turning and machining centers
- Producing required EIA/ISO code and transfer code to CNC machines
- Programming industrial robots
- Describing how robots and automation are used in industry

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Computer Numerical Control Technology

The Computer Numerical Control Technology provides instruction in the theory, operation and programming of CNC machine tools.

Students in this program learn the basics regarding the machinery handbook, process, and maintenance. Advanced operations courses are taken later into the program.

Skills and Competencies

Like other degrees, you will be exposed to a variety of academic coursework as a Computer Numerical Control Technology major. In the process, you will acquire new skills. Specifically, your communication, analytical, technical, and computer skills will be challenged and strengthened.

Coursework will include advanced Computer Aided Design (CAD), Material Science and Machine Tool courses. Students will have a basic knowledge of manual and computer controlled machining, fixturing and industrial safety. Additionally introductory courses into the Machinery Handbook and basic welding will also be covered.

Course Work

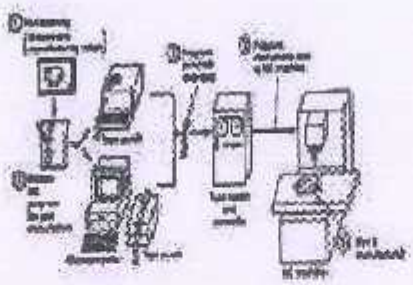
This degree includes the following courses as part of the program requirements, and specific major requirements along with general education courses and graduation requirements.

Core

MF133	Machinery Handbook (3 cr.)
MF134	Manufacturing Process (4 cr.)
MF135	Numerical Control (4 cr.)
MF215	Computer Numerical Control (5 cr.)
MF243	Advanced CNC Operations (4 cr.)

Other Required Courses

ITS110	IDX Seminar (0 cr.)
MA1100	Intermediate Algebra (4 cr.) or higher
MET203	Materials Science I (3 cr.)
ODD200	Technical Drafting with Intro to CAD (4 cr.)
DD203	Geometric Dimensioning & Tolerancing (3 cr.)
DD220	Product Development and Design (4 cr.)
IT215	General Industrial Safety (2 cr.)
WD140	Introduction to Welding (4 cr.)



Career Development

You should begin the resume-building process as soon as you can. The Academic and Career Advisement Center can assist you with career planning, while Career Services will help you fine tune your resume and look for jobs related to your field. In the meantime, the more hands-on experience you have, the better the chances are that you will find a job. Becoming involved in a professional related internship is a way to develop your professional skills and gain experience. Your academic course work is important as well, so be sure to maintain a high grade point average.

Additional Considerations

This degree teaches the skills necessary to pursue an entry-level career.

Relevant work experience will be beneficial when applying for positions.

Job Outlook

Employment is supposed to grow by 8 percent through the year 2018, about as fast as average. Growth will be due to the demand for an increase of the use of advanced equipment.

COURSE DURATION: 45 Hours

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COMPUTER NUMERICAL CONTROL OF MACHINE

OBJECTIVE:

- To implement CNC manufacturing concepts in the factories.

UNIT I INTRODUCTION:

Introduction to Numerical Control - Computer Aided Manufacturing – Components of CNC system – Types of CNC systems – Open loop and closed loop control systems, Drives and Controls – Interpolators; CNC machine tools - Constructional features – Design considerations – Tooling for CNC.

UNIT II AUTOMATION

Introduction to Automation – Goals of Automation, levels of automation, Hard Vs Soft Automation, Computer Aided manufacturing (CAM).Numerical Control - Introduction, Role of NC / CNC in CAM, Applications of NC / CNC, Benefits of NC / CNC, Limitations of CNC.

UNIT III

Basic Components of CNC system - Part programming, Machine control unit, Machine tool - Historical developments and their role in control of machine tools, Classification of NC / CNC systems - Based on type of Control (PTPCCL), method of programming, type of architecture - Hardwired / Softwired / Open.

UNIT IV

Machine Control Unit - Data processing Unit - elements and their functions - Interpolators and Sequential Controllers, Interpolators - Types and Stages of Interpolation, Principles of interpolation - Techniques employed for Interpolation Scheme, Requirements of Interpolation algorithms, Interpolation schemes - Stairs approximation, Digital Differential Analyser, Direct function calculation, DDA - Hardware and Software; Software Interpolators

UNIT V

Part programming - Introduction; Part Program and its elements, Methods of Programming - Manual and Computer Assited Part programming - Custom Macro (Parametric Programming), APT and its variations, Concepts of CAM - Tool path generation and control methods- CNC Introduction G Codes and M codes- Drilling cycle Absolute system Incremental system- CNC Maintenance & Use coolant CNC Advantages - CNC Disadvantages

OUTCOMES:

1. Tooling for CNC concept.
2. Hard Vs Soft Automation, Computer Aided manufacturing
3. 007ANo student is to operate equipment without first checking with the instructor.
4. Students must sweep and clean their work areas before leaving.
5. Able to learn concept G Codes and M codes.

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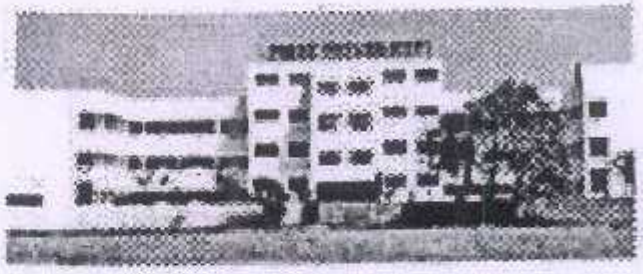
REFERENCES

1. Catherine A. Ingle, "Reverse Engineering", Tata Mc Graw Hill Publication, 1994

2. David D. Bedworth, Mark R. Henderson, Philip M. Wolfe, "Computer Integrated Design and manufacturing", Mc Graw Hill International series, 1991

3. Donald R. Henra, "Co-ordinate measurement and reverse Engineering, American Gear Manufacturers Association.

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DEPARTMENT OF MECHANICAL ENGINEERING

ABOUT THE INSTITUTION

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ABOUT THE DEPARTMENT

The department of Mechanical Engineering came into existence in 2008 with an objective to impart quality education to meet today's competitive environment.

Department has well experienced and dedicated faculty with strong commitment to provide a vibrant learning environment to the students in order to help them excel.

To keep pace with the current technological trends, the department has a well designed, constantly renewed syllabus to incorporate all advancements in existing and emerging technologies which gives the students a holistic and pragmatic view of the present scenario of industry.

INFORMATION BROCCHER ADD ON COURSE- NON DESTRUCTIVE TESTING

COURSE HIGHLIGHTS

- *To ensure product reliability*
- *To prevent accidents and save human lives*
- *To make a profit for the user (and vitae)*
- *To ensure customer satisfaction and to maintain the manufacturer's "good name"*
- *To aid in better product design*
- *To control manufacturing processes*
- *To lower manufacturing costs*
- *To maintain a uniform quality level*

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- *Product reliability and safety top his list, of course. But he also includes the use of NDT in process control and applying NDT to improve profit, which adds value.*
- *Review of learn by lessons full curriculum*



COURSE OBJECTIVES

The main objectives of this course is to introduce the concept of non-destructive testing among the students and make them understand various types of non-traditional practices available for manufacturing industry.

This course provides students a synopsis of non-destructive and destructive evaluation methods that are used in evaluation of welds. This includes understanding the basic principles of various NDT methods, fundamentals, characteristics on different product forms, importance of NDT, applications, limitations of NDT methods and techniques and codes, standards and specifications related to non-destructive testing technology.

Students also will be introduced to relevant quality assurance and quality control requirements in accordance with ASQ, ASME, and AWS standards

PRE-REQUISITES

Understand the testing of basic mechanical properties and defects

ELIGIBILITY

B.Tech – Mechanical students shall be eligible for the admission to the course

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NON-DESTRUCTIVE TESTING

OBJECTIVE:

Students also will be introduced to relevant quality assurance and quality control requirements in accordance with ASQ, ASME, and ANSI standards.

Core Classes -I	9
Introduction to Nondestructive Testing	
Visual and Inspection	
Codes and Standards for Nondestructive Testing	
Core Classes –II	9
Radiation Safety	
NDT Radiographic Testing I	
NDT Radiographic Testing II	
Core Classes – III	9
Introduction to Ultrasonic Testing	
Advanced Ultrasonic Testing	
Magnetic Particle and Liquid Penetrant	
Radiographic Testing III	
Core Classes – IV	9
Eddy Current Testing I	
Eddy Current Testing II	
Advanced NDT Methods	
Ultrasonic Testing III	
Core Classes – V	9
Defect identification	
Remedies and selection	
Material identification	
Purpose and application	

TOTAL: 45 PERIODS

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OUTCOMES:

Upon completion of the course, the student should be able to:

- *To aid in better product design*
- *To control manufacturing processes*
- *To lower manufacturing costs*
- *To maintain a uniform quality level*

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DEPARTMENT OF MECHANICAL ENGINEERING

CIRCULAR

PRIST /MECH/CIRC/ 2019-2020 /VALUE ADDED COURSE/01 10.08.2019

It is informed that the VALUE ADDED COURSE will be conduct from 23.08.2019 to 01.09.2019.

Venue : Lecture hall 2

I) CERTIFICATE COURSES

- **PIPING TECHNOLOGY**

Students from mechanical department those who are interest can enroll their names and course to the HOD on or before 13.08.2019

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DEPARTMENT OF MECHANICAL ENGINEERING

ABOUT THE INSTITUTION

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ABOUT THE DEPARTMENT

The department of Mechanical Engineering came into existence in 2000 with an objective to impart quality education to meet today's competitive environment.

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INFORMATION BROUCHER ADD ON COURSE-PIPING TECHNOLOGY

COURSE HIGHLIGHTS

- Piping system designers that may decide to use expansion joints
- Expansion Joint designers that use the information provided by piping system designers.
- To determine the best design to meet the requirements.
- Designers that use modern software systems to evaluate different options
- Engineers / Managers: field, maintenance, process, operations, construction, surveyors

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About the Program

The objective of this course is to provide the candidates the Detail knowledge and skills in Piping Design discipline to facilitate faster learning curves while on the job.

This course will cover the fundamental principles and concepts used in Process Plant Layout and Piping Design Engineering. Upon completion of this course, students will have a clear understanding of the design and principles used in Piping Design System for Oil & Gas Energy Sector.

Learning-Based Outcomes

Get hands-on experience in applying design tools & techniques to real engineering problems and understand Design, Engineering, Construction, O & M, etc. Thus, become a Technology Driven Engineering Professional.

Trainer

Delivered by Senior Industry Professionals having extensive experience in Design & Engineering in diverse domains & industries. These practitioners are also Empanelled as subject matter experts with SmartBrains Engineers & Technologist Pvt. Ltd.



PRE-REQUISITES

Understand and design basic mechanical concepts and reverseengineering.

ELIGIBILITY

B.Tech – Mechanical students shall be eligible for the admission to thecourse.

COURSE DURATION: 45 Hours

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PIPING TECHNOLOGY

OBJECTIVE:

This class covers the following topics: piping design, the effects on overall configuration on preliminary piping design, initial layout, the total system, introduction to pipe stress analysis, detailed piping design, and how all of this influences pipe support and pipe hanger design.

Syllabus

Part 1: Introduction - Overview of Piping

1. This section serves as an introductory overview of piping system design.
   a. Effects of operating conditions, including flow rate, design pressure and temperature on piping design
   b. Impact of internal and external forces on the design.
   c. Influences that the different modes of failure and the applicable codes have on the entire system.
   d. Piping layout, an overview of the general support classifications.

Part 2: Preliminary Piping Design - Piping System Components

1. Concepts used in developing an initial piping layout.
2. Design principles including fluid properties, flow rate, and physical laws which influence the complete piping system layout.
3. Understand the effect of different piping system components, such as tanks, vessels, valves, and pumps, on the overall configuration.

Part 3: Preliminary Piping Design - The Total System

1. The total piping system.
2. The different types of equipment and components that define various types of piping systems.
3. Differences between series piping, parallel piping and branch piping as well as their specialized applications.
4. The piping system conditions such as static and dynamic head loss
5. Influences on the selection and distribution of piping components throughout the entire system.

Part 4: Basic Concepts of Stress Analysis - Flexibility Analysis

1. Historical perspective of how earlier analysis techniques were developed in the absence of today' computer technology.
2. Review how earlier techniques have evolved ultimately leading to today's finite element practices.
3. The basic concepts of stress analysis will be covered, including failure theories, stress intensification factors and the overall purpose of stress analysis.

Part 5: Basic Concepts of Stress Analysis - Design Bases

1. A review of the different phases of project evolution.
2. The design bases which form the foundation of all our analyses, including physical attributes,

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OUTCOMES:

- A general overview of piping engineering
- An awareness of the processes and issues involved with designing, procurement and construction
- An awareness of the materials and equipment used
- An understanding of industry terms and acronyms
- An understanding the stress analysis.

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DEPARTMENT OF MECHANICAL ENGINEERING

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PRIST /MECH/CIRC/ 2019-2020 /VALUE ADDED COURSE/01 18.10.2019

It is informed that the VALUE ADDED COURSE will be conduct from 25.10.2019 to 09.11.2019.

Venue : Lecture hall 2

I) CERTIFICATE COURSES

- **QUALITY ASSURANCE ,SIX SIGMA AND LEAN MANUFACTURING**

Students from mechanical department those who are interest can enroll their names and course to the HOD on or before 22.10.2019

HOD

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INFORMATION BROUCHER ADD ON COURSE- QUALITY ASSURANCE ,SIX SIGMA AND LEAN MANUFACTURING

COURSE HIGHLIGHTS

- Training content are based on latest Six Sigma
- Earn 16 Hours PDU (Training) Certificate
- Training & Exam Fee Course ware Mock Tests and more.
- Best Certified Instructors with decades of experience in subject matter.
- Complimentary 180 Days of High Quality E-Learning Access
- Premium Access to Six Sigma resources and Six Sigma Job Portal.

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COURSE OBJECTIVES

- Skill to predict, prevent and control defects in a process.
- Understanding the elements of waste.
- Skills to achieve sustainable quality improvement through process improvement.
- Understanding of variation in processes.
- Skills to reduce variation in processes and achieve predicted outcomes.
- Ability to identify, measure and analyse process potential.
- Usage of inferential statistics.
- Usage of hypothesis testing.

PRE-REQUISITES

Understand and design basic mechanical concepts and reverse engineering.

ELIGIBILITY

B.Tech – Mechanical students shall be eligible for the admission to the course.

COURSE DURATION: 45 Hours

REGISTRAR
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QUALITY ASSURANCE , SIX SIGMA AND LEAN MANUFACTURING

OBJECTIVES:

- To impart knowledge to enable the students to design and implement Statistical Process Control in any industry

UNIT I QUALITY FUNDAMENTALS 9

Importance of quality- evolution of quality- definitions of quality- dimensions of quality- quality control- quality assurance- areas of quality- quality planning- quality objectives and policiesquality costs- economics of quality- quality loss function- quality Vs productivity- Quality Vs reliability.

UNIT II SIX SIGMA METHODOLOGY– TOOLS & TECHNIQUES 9

Cost of Quality – Conformance and Non-Conformance cost – 7 Basic Quality Control Tools – Seven Management tools – FMEA

Need for Six Sigma – Six Sigma Team – DMAIC Methodology: Define, Measure, Analyse, Improve and Control – Lean Six Sigma

UNIT III EVOLUTION & OVERVIEW OF LEAN MANUFACTURING 9

Evolution of Mass production – Traditional vs. Mass production – Evolution of Toyota (Lean) Production System – Business Dynamics of Lean production – Principles of Lean production: Value, Value stream, Flow, Pull, Perfection.

UNIT IV LEAN MANUFACTURING – TOOLS & TECHNIQUES 9

Ms: Muda, Mura, Muri – 7 Wastes in Manufacturing – Lean Tools to eliminate Muda – 5S – Standardised work – TPM – SMED – Jidoka – Poka Yoke – ST – Heijunka – Kanban – One piece production.

UNIT V VALUE STREAM MAPPING 9

Need for Value Stream mapping – Steps involved in Value stream mapping – Choose value stream – PQ and PR analysis – Current State map – Lean Metrics – Future State Map – Kaizen plans – Lean implementation – Cultural change – Lean in the Supply chain.

TOTAL: 45 PERIODS

OUTCOMES:

- Control the quality of processes using control charts for variables in manufacturing industries.
- The students should apply the various tools, techniques and methodology of lean manufacturing.
- six sigma concepts to the potential quality gaps in manufacturing / production industries.
- Able to learn concept of tool and technique.
- Lean the Supply chain concept.

REGISTRAR
Pennatyah Ramajayam Institute of
Science & Technology (PRIST)
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THANJAVUR - 613 403, TAMIL NADU

REFERENCES:

1. Pascal Dennis, "Lean Production Simplified: A plain Language Guide to the World's Most Powerful Production System", Productivity Press, 2007.

2. Issa Bass and Barbara Lawton, "Lean Six Sigma using Sigma XL and Minitab", Tata McGraw Hill, 2010.

3. Yasuhiro Monden, "Toyota Production System: An Integrated Approach to Just-in-Time", CRC Press, 2012.

REGISTRAR
Ponnaiyah Ramajayam Institute of
Science & Technology (PRIST)
(Institution Deemed to be University-
U/s 3 of the UGC Act, 1956)
THANJAVUR-613 403, Tamil Nadu

PRIST
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NAAC ACCREDITED
THANJAVUR – 613 403 - TAMIL NADU

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF CIVIL ENGINEERING

ACADEMIC YEAR 2019-2020

1.3.2 Number of value-added courses for imparting transferable and life skills offered during the year

1.3.3 Total number of students enrolled in the courses under 1.3.2 above

S. No	Name of the value added courses (with 30 or more contact hours)offered
1.	3D PRINTING TECHNOLOGY.
2.	BIM FUNDAMENTALS FOR ENGINEERS.
3.	TOTAL STATION & GPS.
4.	REVIT ARCHITECTURE.
5.	STADD PRO.
6.	FIRE PROTECTION , SERVICES AND MAINTENANCE.
7.	RIVER ENGINEERING.

REGISTRAR
Pondicherry Bangalayan Institute of Science & Technology (PRIST)
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THANJAVUR - 613 403, TAMIL NADU.

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DEPARTMENT OF CIVIL ENGINEERING

08.07.2019

CIRCULAR

SUB: Add on Course–Reg

It is informed that Add on Course-Certificate Course-2019 for students will be started on 15.07.2019 the academic year 2019-2020 Odd Semester. The detailed schedule will be given by the departments.

Head of the departments are requested to inform their students about the Add on Course–2019 on **3D PRINTING TECHNOLOGY for Civil Engineering** and the course coordinator is Dr. M.KARTHIKEYAN and motivates them to attend the course.

HOD's are requested to nominate one faculty member to co-ordinate the Add on Course.

HOD

HEAD OF THE DEPARTMENT
DEPARTMENT OF CIVIL ENGINEERING
PRIST UNIVERSITY
VALLAM, THANJAVUR

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ENGINEERING&TECHNOLOGY

ADD ON COURSE BROCHURE

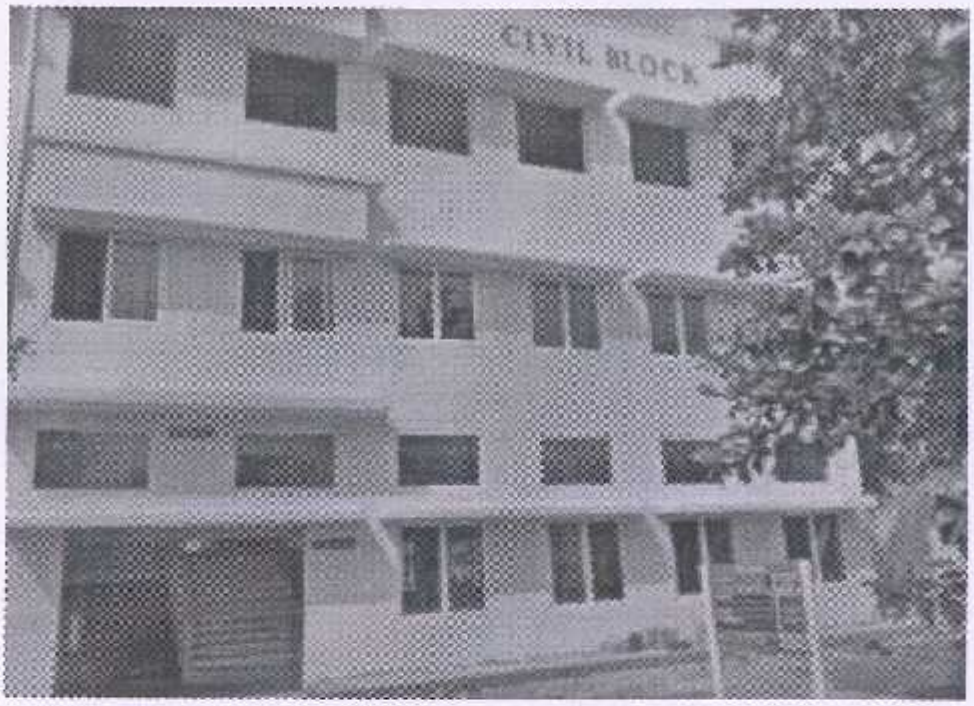
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DEPARTMENT OF CIVIL ENGINEERING



CERTIFICATE COURS

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ABOUTPRISTDEEMEDTOBEUNIVERSITY

Ponnaiyah Ramajayam Institute of Science & Technology (PRIST), made a for into the academic domain, with the establishment of SriRam Institute of Computer Science and Technology in 1985. Over time, various institutions of higher learning such as an Arts and Science College, College of Engineering and Technology, College of Education, Research Institution, Commerce & Business Management. Architecture, Agriculture, Law, Pharmacy & Polytechnic College, added feathers to the PRIST crown. PRIST University received university status under section 3 of UGC Act 1956 &also got NAAC Accredited status. Today, PRIST commands a massive student base, spread across a whole array of campuses such as Trichy, Kumbakonam, Puducherry, Chennai, Madurai etc.

Ponnaiyah Ramajayam College applied for NAAC assessment and accreditation Council and was awarded an "A" grade, thus making it the first "A" grade awarded college in the Bharathidasan University area. The college then submitted its proposal to the Ministry of Human Resource Development,Government of India for deemed university status.
The academic reach extends right from school education up to the level of the Ph.D Doctoral programmes in a rich array of disciplines such as Medicine, Engineering, Arts & Science, Education, Pharmacy, Management, Law, Agriculture &Architecture.

SCHOOL OF ENGINEERING & TECHNOLOGY

The Departments of Civil Engineering, Computer Science and Engineering, Electronics and Communication Engineering, Mechanical Engineering, and Electrical and Electronics Engineering were established in2008 with an objective to impart quality education to meet today's competitive environment. All Departments has well experienced &dedicated faculty with strong commitment to provide vibrant learning environment to student in order to help them excel. To keep pace with the current technological trends, all departments have well designed, constantly reviewed syllabus to incorporate all advanced in existing& Emerging Technologies which gives the students a holistic and pragmatic view of the present scenario of Industry.

HOD

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DEPARTMENT OF CIVIL ENGINEERING
PRIST UNIVERSITY
VALLAM, THANJAVUR

DEAN
School of Engineering and Tech
Ponnaiyah Ramajayam Institute of
Science and Technology (PRIST)
Deemed to be University
Vallam, Thanjavur-613 403.

REGISTRAR
Ponnaiyah Ramajayam Institute of
Science & Technology (PRIST)
(Institution Deemed to be University-
U/s 3 of the UGC Act, 1956)
THANJAVUR-613 403, TAMIL NADU

INTRODUCTION ABOUT THE DEPARTMENT

In PRIST UNIVERSITY the Department of Civil Engineering was established in 2008. Since then its excellence in each and every aspects has played an important role in the Institute. Our Department is offering B.Tech – Civil Engineering M.Tech – Structural Engineering & Doctorate in Civil Engineering. Civil Engineering Department has been actively involved in research and consultancy in all the fields of Civil Engineering. The Department has well equipped laboratories and research facilities. It is constantly modernizing the laboratory facilities with latest technology and research know-how.

The Department offers PG/UG degree courses and a number of add on courses. Group electives or major electives are offered to enable students choose from wide choice of fourteen courses. Also, we offer skill based electives, from the point of view of employment opportunities and free elective courses of inter disciplinary nature. The Advanced Learners are offered Extra Credit courses for earning extra credits.

INTRODUCTION ABOUT THE COURSE

3D printing in construction is a relatively new technology that replaces some manual work in construction with a machine that creates and assembles structures. This can be a more cost-effective, convenient and environmentally sound way to construct new buildings. Learning the benefits of 3D printing in construction can help you decide if the technology would help you streamline workflows and improve client satisfaction.

3D printing in construction is when companies or projects sequentially layer materials via computer-controlled processes to create three-dimensional shapes. 3D printers are useful for creating new structures on-site or manufacturing components off-site for later assembly.

The printer receives dimensions from a software program and builds the structure on a platform using materials, such as cement, plastic or liquid metals. Construction companies install rails around building spaces so the arm can change position and height as needed. People may use this method for smaller 3D printing activities. Depending on the materials, you may need to complete additional labor for projects using this method.

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THANJAVUR-613 403, TAMIL NADU

Outline of the course:

S.No	Topics	Minimum
1.	INTRODUCTION OF 3D PRINTING TECHNOLOGY.	5hrs
2.	PROBLEMS FACING THE CONSTRUCTION INDUSTRY.	5hrs
3.	CONSTRUCTION 3D PRINTING BASICS.	5hrs
4.	COMPARING CONSTRUCTION METHODS.	5hrs
5.	AUTOMATING MASONRY.	5hrs
6.	ON-SITE PRINTING.	5hrs
7.	VARIOUS PRINTING TECHNOLOGIES EXPLAINED.	5hrs
8.	ON – SITE MIXING SYSTEMS.	5hrs
9.	ECONOMICBREAKDOWN.	5hrs

Duration of the Course: 45 hours.

Minimum Eligibility: UG&PG

Learning outcomes:

1. Use software tools for 3D printing .
2. Prepare 3D printed modules.
3. Construct products using LOM and FDM technologies.
4. To create and and edit Pipe Networks and use Plan Production tools.

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SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF CIVIL ENGINEERING

ACADEMIC YEAR 2019-2020

1.3.2 Number of value-added courses for imparting transferable and life skills offered during the year

1.3.3 Total number of students enrolled in the courses under 1.3.2 above

S. No	Name of the value added courses (with 30 or more contact hours)offered
1.	3D PRINTING TECHNOLOGY.
2.	BIM FUNDAMENTALS FOR ENGINEERS.
3.	TOTAL STATION & GPS.
4.	REVIT ARCHITECTURE.
5.	STADD PRO.
6.	FIRE PROTECTION , SERVICES AND MAINTENANCE.
7.	RIVER ENGINEERING.

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THANJAVUR – 613403 - TAMILNADU

DEPARTMENT OF CIVIL ENGINEERING

05.07.2019

CIRCULAR

SUB: Add on Course–Reg

It is informed that Add on Course-Certificate Course-2019 for students will be started on 09.07.2019 the academic year 2019-2020 Odd Semester. The detailed schedule will be given by the departments.

Head of the departments are requested to inform their students about the Add on Course–2019 on **BIM FUNDAMENTALS FOR ENGINEERS** and the course coordinator is Mr. R.SANKAR and motivates them to attend the course.

HOD's are requested to nominate one faculty member to co-ordinate the Add on Course.

HOD

HEAD OF THE DEPARTMENT
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PRIST UNIVERSITY
VALLAM, THANJAVUR

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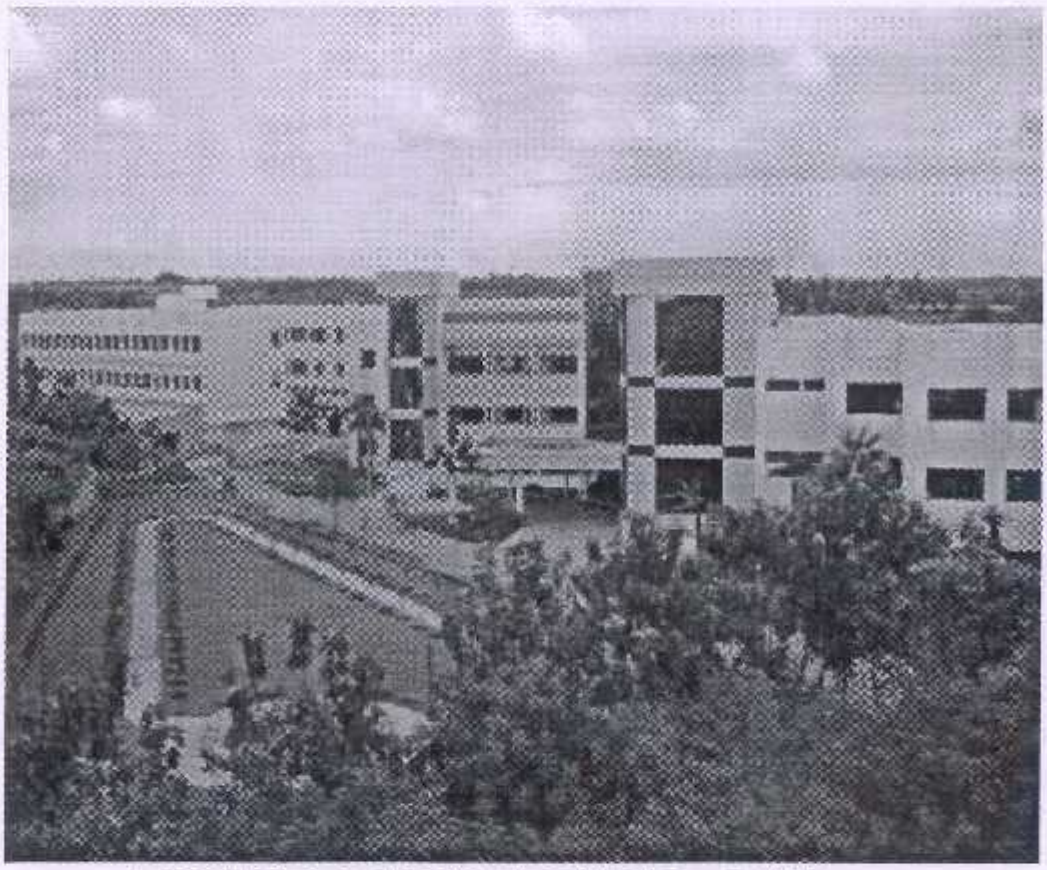
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ENGINEERING&TECHNOLOGY
ADD ON COURSE BROCHURE

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DEPARTMENT OF CIVIL ENGINEERING



CERTIFICATE COURSE

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ABOUT PRIST DEEMED TO BE UNIVERSITY

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INTRODUCTION ABOUT THE DEPARTMENT

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INTRODUCTION ABOUT THE COURSE

BIM is the foundation of digital transformation in the architecture, engineering, and construction (AEC) industry. As the leader in BIM, Autodesk is the industry's partner to realize better ways of working and better outcomes for business and the built world. Try software. Some of the key fundamentals of BIM include the use of parametric modeling, model-based collaboration between project stakeholders, and data-rich models that can support analysis for energy efficiency, clash detection, scheduling, cost estimating, and more.

BIM integrates multi-disciplinary data to create detailed digital representations that are managed in an open cloud platform for real-time collaboration. BIM Engineers plan, design, and supervise Building Information Modelling (BIM), identify and resolve BIM technology implementation issues and problems, and assure quality deliverables of the related construction projects. n the context of BIM development, not only the 3D models of the object become more detailed, but also a series of other information is saved directly on the object. BIM, everything is represented as objects and elements, such as walls, doors, windows, and structural components.

BIM is utilized extensively in the construction industry as a collaborative digital tool for planning, designing, constructing, and managing building projects.These objects have both geometric and data attributes.

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THANJAVUR-613 403, TAMIL NADU.

Outline of the course:

S.No	Topics	Minimum
1.	PREPARE FOR THE CLASS.	5hrs
2.	FUNDAMENTAL BIM KNOWLEDGE.	5hrs
3.	VIEW & RETRIEVE INFORMATION FROM BIM MODELS.	5hrs
4.	COLLABORATION WITH CAD DRAWINGS , PROJECT BUDGET CALCULATION WITH SCHEDULED 3D MODEL.	5hrs
5.	MULTIPLE 3D MODELS FOR DIFFERENT PROJECT TEAMS ON A DIGITAL PLATFORM.	5hrs
6.	ADDITIONAL INFORMATION OF TIME WITH SHARED 3D MODEL.	5hrs
7.	PROJECT BUDGET CALCULATION WITH SCHEDULED 3D MODEL.	5hrs
8.	MODELING A BIM MODEL.	5hrs
9.	CLOSURE.	5hrs
	Total Hours	**45 hrs**

Duration of the Course: 45 hours.

Minimum Eligibility: UG&PG

Learning outcomes:

1. The learning process is mainly organized around theoretical classes.
2. Related production of 2D drawings and representations in different detail levels.
3. Acquired know-how and abilities from these courses are directly transferred.
4. To design studios in various levels and construction project courses.

HOD

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SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF CIVIL ENGINEERING

ACADEMIC YEAR 2019-2020

1.3.2 Number of value-added courses for imparting transferable and life skills offered during the year

1.3.3 Total number of students enrolled in the courses under 1.3.2 above

S. No	Name of the value added courses (with 30 or more contact hours)offered
1.	TOTAL STATION.
2.	AUTOCAD SOFTWARE.
3.	TOTAL STATION & GPS.
4.	REVIT ARCHITECTURE.
5.	STADD PRO.
6.	FIRE PROTECTION, SERVICES AND MAINTENANCE.
7.	RIVER ENGINEERING

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DEPARTMENT OF CIVIL ENGINEERING

03.01.2020

CIRCULAR

SUB: Add on Course–Reg

It is informed that Add on Course-Diploma Course-2020 for students will be started on 10.01.2020 the academic year 2019-2020 Even Semester. The detailed schedule will be given by the departments.

Head of the departments are requested to inform their students about the Add on Course–2020 on **TOTAL STATION & GPS** and the course coordinator is G.PORTCHEJIAN and motivates them to attend the course.

HOD's are requested to nominate one faculty member to co-ordinate the Add on Course.

HOD

HEAD OF THE DEPARTMENT
DEPARTMENT OF CIVIL ENGINEERING
PRIST UNIVERSITY
VALLAM, THANJAVUR

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DEPARTMENT OF CIVIL ENGINEERING



ENGINEERING&TECHNOLOGY

ADD ON COURSE BROCHURE

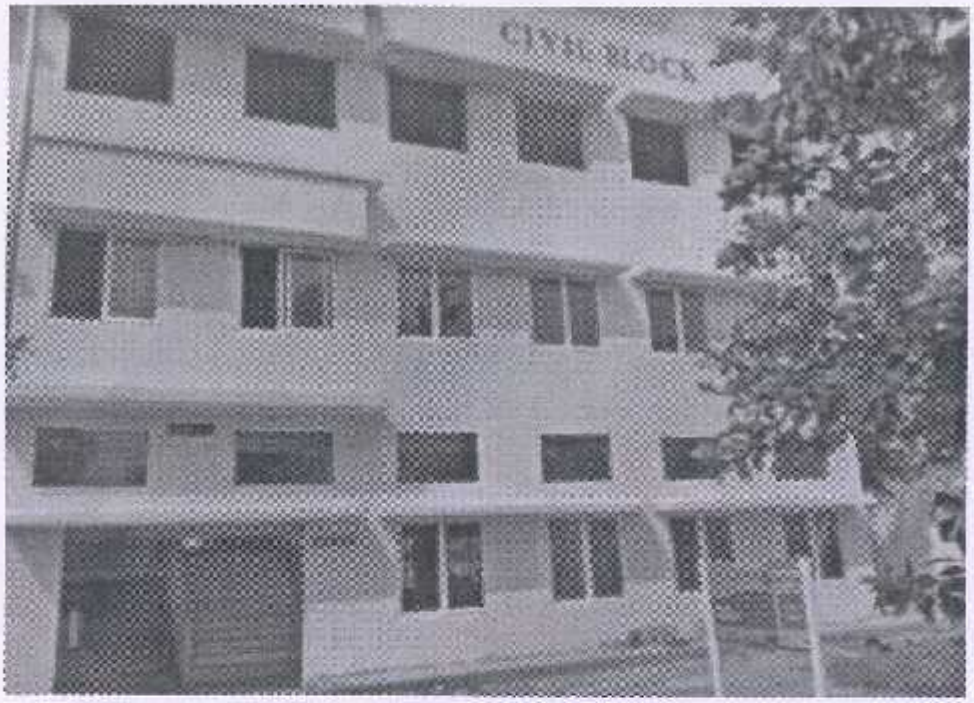
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DIPLOMA COURSE

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SCHOOL OF ENGINEERING & TECHNOLOGY

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INTRODUCTION ABOUT THE DEPARTMENT

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INTRODUCTION ABOUT THE COURSE

A Total Station is an instrument used in modern surveying and building construction. Total Station equipment can measure angles and distances of a surveyed geography. The data gathered from Total Stations is useful for Civil engineering and other projects requiring a full-scale survey.

Also, the information retrieved can be mapped to Geographic Information Systems (GIS) software to perform further geographic analysis of the surveyed area. This program provides participants with real-time experience of a Survey project using Total Station equipment, which will help them build a stronghold on the subject and find new Civil Engineering career opportunities.

HOD

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THANJAVUR - 613 403, TAMIL NADU.

Outline of the course:

S.No	Topics	Minimum
1.	TOTAL STATION OPERATION	7 hrs
2.	CENTRING, LEVELLING AND FOCUSING.	7 hrs
3.	IMPORTING DATA FROM TOTAL STATION TO CADD SOFTWARE	7 hrs
4.	CONTOUR SURVEY , BUILDING MARKING , ANGLE & DISTANCE MEASUREMENT .	7 hrs
5.	CALCULATION OF AREA , MEASUREMENT OF VOLUME.	7 hrs
6.	INTRODUCTION TO GIS.	7 hrs
7.	SPATIAL DATA MODELS & NON-SPATIAL DATA MODELS.	7 hrs
8.	GIS DATA INPUT, AND GEO-CORRECTION.	6 hrs
9.	PREPARATION OF FLUVIO-GEOMORPHIC MAPS.	5 hrs

Duration of the Course: 60 hours.

Minimum Eligibility: UG&PG

Learning outcomes:

1. Setting up total station, Stationing and orienting to a direction and back sight point.
2. Resection/free stationing from known points.
3. Setting out lines and levels for buildings, kerbs, manholes or gullies.
4. Gaining the basic knowledge of mapping the earth and its features.
5. Be able to successfully organize, manage, and present results in the form of a GIS project.
6. Understand how GIS methodologies can be used to address spatial analysis from the theoretical perspective..

HOD

HEAD OF THE DEPARTMENT
DEPARTMENT OF CIVIL ENGINEERING
PRIST UNIVERSITY
VALLAM, THANJAVUR

DEAN
School of Engineering and Tech
Ponnaiyah Ramajayam Institute of
Science and Technology (PRIST)
Deemed to be University
Vallam, Thanjavur - 613 403.

REGISTRAR
Ponnaiyah Ramajayam Institute of
Science & Technology (PRIST)
(Institution Deemed to be University-
U/s 3 of the UGC Act, 1956)
THANJAVUR-613 403, TAMIL NADU

PRIST
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UNIVERSITY
NAAC ACCREDITED
THANJAVUR – 613 403 - TAMIL NADU

DEPARTMENT OF CIVIL ENGINEERING

02.07.2019

CIRCULAR

SUB: Add on Course–Reg

It is informed that Add on Course-Certificate Course-2019 for students will be started on 09.07.2019 the academic year 2019-2020 Odd Semester. The detailed schedule will be given by the departments.

Head of the departments are requested to inform their students about the Add on Course–2019 on **REVIT ARCHITECTURE** and the course coordinator is Mr. K.PRAVEEN and motivates them to attend the course.

HOD's are requested to nominate one faculty member to co-ordinate the Add on Course.

HOD

HEAD OF THE DEPARTMENT
DEPARTMENT OF CIVIL ENGINEERING
PRIST UNIVERSITY
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DEPARTMENT OF CIVIL ENGINEERING



ENGINEERING&TECHNOLOGY

ADD ON COURSE BROCHURE

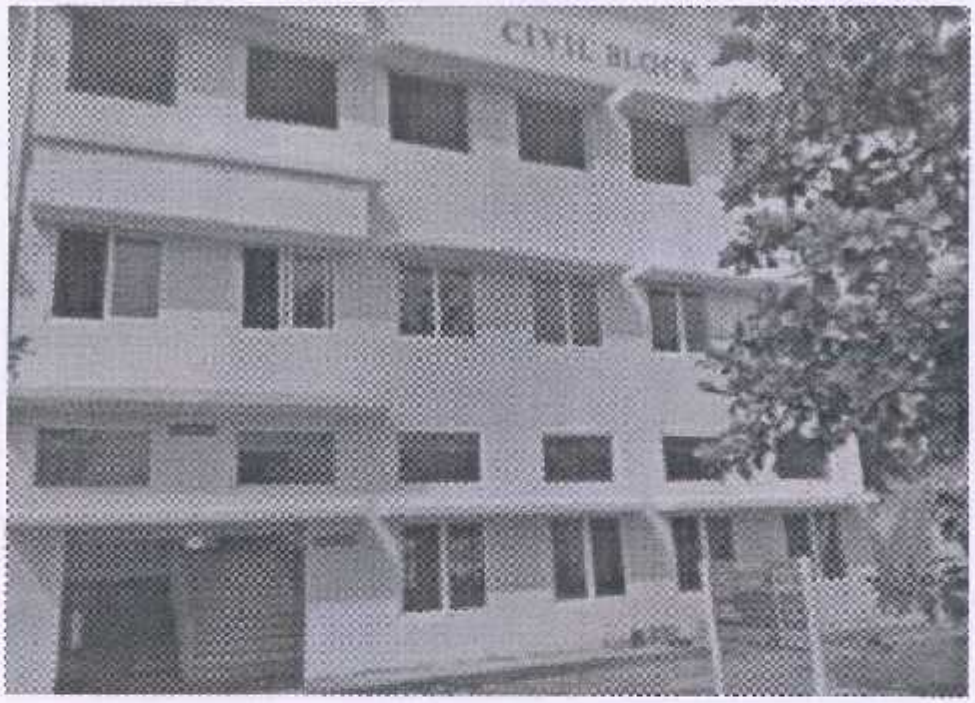
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Pondicherry Ramaiyah Institute of
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DEPARTMENT OF CIVIL ENGINEERING



CERTIFICATE COURSE

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THANJAVUR-613 403, TAMIL NADU.

ABOUTPRISTDEEMEDTOBEUNIVERSITY

Ponnaiyah Ramajayam Institute of Science & Technology (PRIST), made a for into the academic domain, with the establishment of SriRam Institute of Computer Science and Technology in 1985. Over time, various institutions of higher learning such as an Arts and Science College, College of Engineering and Technology, College of Education, Research Institution, Commerce & Business Management, Architecture, Agriculture, Law, Pharmacy & Polytechnic College, added feathers to the PRIST crown. PRIST University received university status under section 3 of UGC Act 1956 &also got NAAC Accredited status. Today, PRIST commands a massive student base, spread across a whole array of campuses such as Trichy, Kumbakonam, Puducherry, Chennai, Madurai etc.

Ponnaiyah Ramajayam College applied for NAAC assessment and accreditation Council and was awarded an "A" grade, thus making it the first "A" grade awarded college in the Bharathidasan University area. The college then submitted its proposal to the Ministry of Human Resource Development,Government of India for deemed university status.

The academic reach extends right from school education up to the level of the Ph.D Doctoral programmes in a rich array of disciplines such as Medicine, Engineering, Arts & Science, Education, Pharmacy, Management, Law, Agriculture &Architecture.

SCHOOL OF ENGINEERING & TECHNOLOGY

The Departments of Civil Engineering, Computer Science and Engineering, Electronics and Communication Engineering, Mechanical Engineering, and Electrical and Electronics Engineering were established in2008 with an objective to impart quality education to meet today's competitive environment. All Departments has well experienced &dedicated faculty with strong commitment to provide vibrant learning environment to student in order to help them excel. To keep pace with the current technological trends, all departments have well designed, constantly reviewed syllabus to incorporate all advanced in existing& Emerging Technologies which gives the students a holistic and pragmatic view of the present scenario of Industry.

HOD

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INTRODUCTION ABOUT THE DEPARTMENT

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The Department offers PG/UG degree courses and a number of add on courses. Group electives or major electives are offered to enable students choose from wide choice of fourteen courses. Also, we offer skill based electives, from the point of view of employment opportunities and free elective courses of inter disciplinary nature. The Advanced Learners are offered Extra Credit courses for earning extra credits.

INTRODUCTION ABOUT THE COURSE

Revit MEP is building information modeling (BIM) software, meant exclusively for MEP engineering, a combination of three engineering disciplines, namely: mechanical, electrical, and plumbing. This software, a specialized version of Revit, is used for 3D design and modeling of designs in architecture, construction, plant, civil, and MEP projects. It is highly useful in conducting simulations and interference detection early in the design process and helps improve communication of design intentions before construction begins.

The course teaches you how to use Revit MEP to streamline the design process. You will also learn how to add mechanical equipment to a project, create HVAC zones, and add insulation, piping and more. Training will be given in the following key areas:

Then you learn design development tools including how to model walls, doors, windows, floors, ceilings, stairs and more. Finally, you learn the processes that take the model into the construction documentation phase. Since building projects themselves tend to be extremely complex, the Autodesk Revit software is also complex. The objective of the Autodesk Revit 2015 (R1): Architecture Fundamentals training guide is to enable students to create full 3D architectural project models and set them up in working drawings.

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Outline of the course:

S.No	Topics	Minimum
1.	INTRODUCTION TO REVIT ARCHITECTURE&BIM	5 hrs
2.	STARTING THE PROJECT & BUILDING THE MODEL..	5 hrs
3.	DETAILING OF THE MODEL .	5 hrs
4.	ADDING FLOORING, CEILING, ROOFING & BALCONY.	5 hrs
5.	MATERIAL APPLICATION & NEW MATERIAL.	5 hrs
6.	MASSING & SITE: TOPO SURFACE, SITE COMPONENT.	5 hrs
7.	3D MODEL OF THE HOUSE WITH MASSING & SITE COMPONENTS.	5 hrs
8.	EXTRUSIONS & OPENING.	5 hrs
9.	FINISHING THE MODEL.	5 hrs

Duration of the Course: 45 hours.

Minimum Eligibility: UG&PG

Learning outcomes:

1. Students will learn to capture and analyze concepts, and maintain your vision through design, documentation, and construction.
2. Students will learn to do building element energy analysis; use the API to perform pipe/duct calculations; perform static analysis from the cloud; create/manage the structural analytical model; automatically update your model with analysis results; and improve BIM-based building performance workflows.
3. Student will learn to dock dialogs in a single window; more easily model, edit, and document designs; place air terminal devices on duct faces; restrict angles for pipe, duct, and cable tray; cap open ends of pipe or duct content quickly; rebar placement constraints customization; gain control over rebar placement; and get more rebar options when modeling.

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SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF CIVIL ENGINEERING

ACADEMIC YEAR 2019-2020

1.3.2 Number of value-added courses for imparting transferable and life skills offered during the year

1.3.3 Total number of students enrolled in the courses under 1.3.2 above

S. No	Name of the value added courses (with 30 or more contact hours)offered
1.	TOTAL STATION.
2.	AUTOCAD SOFTWARE.
3.	TOTAL STATION & GPS.
4.	REVIT ARCHITECTURE.
5.	STADD PRO.
6.	FIRE PROTECTION , SERVICES AND MAINTENANCE.
7.	RIVER ENGINEERING.

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DEPARTMENT OF CIVIL ENGINEERING

02.01.2020

CIRCULAR

SUB: Add on Course–Reg

It is informed that Add on Course-Certificate Course-2020 for students will be started on 06.01.2020 the academic year 2019-2020 Even Semester. The detailed schedule will be given by the departments.

Head of the departments are requested to inform their students about the Add on Course–2020 on STADD PRO and the course coordinator is Mr. D. JEYAKUMAR and motivates them to attend the course.

HOD's are requested to nominate one faculty member to co-ordinate the Add on Course.

HOD

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DEPARTMENT OF CIVIL ENGINEERING
PRIST UNIVERSITY
VALLAM, THANJAVUR

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DEPARTMENT OF CIVIL ENGINEERING



ENGINEERING&TECHNOLOGY
ADD ON COURSE BROCHURE

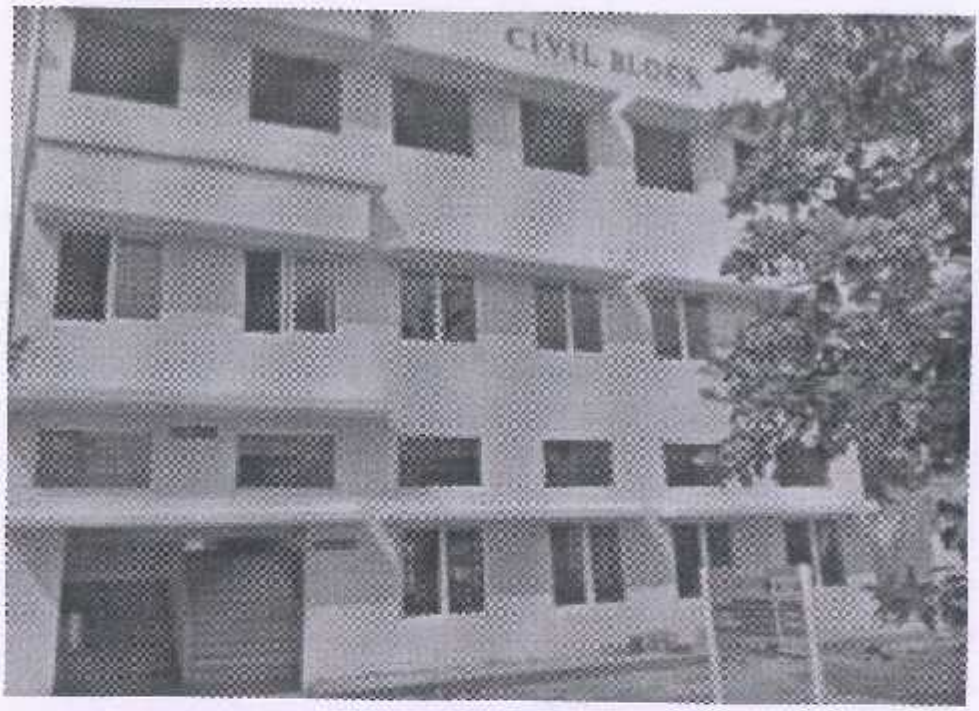
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Pennalyah Ramalingam Institute of
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DEPARTMENT OF CIVIL ENGINEERING



CERTIFICATE COURSE

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THANJAVUR - 613 403, TAMIL NADU

INTRODUCTION ABOUT THE DEPARTMENT

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INTRODUCTION ABOUT THE COURSE

STAAD's full form is Structural Analysis and Design. STAAD Pro is one of the popular software that is used for analyzing & designing structures like – buildings, towers, bridges, industrial, transportation, and utility structures. Designs may include any building structures like tunnels, culverts, bridges, piles, and petrochemical plants; and building materials like timber, concrete, steel, cold-formed steel, and aluminum.

STAAD or STAAD.Pro was developed by Research Engineers International at Yorba Linda, CA in 1997.To get rid of the boring & time-consuming manual procedures architectural Engineers started using automated software STAAD.Pro. STAAD.Pro permits structural engineers to design & analyze any type of structure virtually. Structural consultants, structural engineering firms, departments in construction companies, government agencies, owner/operators, offshore platform designers, and many more are extensively using this software.

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Vallam, Thanjavur-613 403.

REGISTRAR
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U/s 3 of the UGC Act, 1956)
THANJAVUR-613 403, Tamil Nadu

Outline of the course:

S.NO	TOPICS	MINIMUM
1.	INTRODUCTION TO STAAD PRO.	5 hrs
2.	MODEL GENERATION AND EDITING.	5 hrs
3.	INTRODUCTION TO LOADING AND AUTOMATIC LOAD GENERATION.	5 hrs
4.	CONCRETE DESIGN.	5 hrs
5.	SEISMOLOGY.	5 hrs
6.	FEM / FEA.	5 hrs
7.	STEEL DESIGN.	5 hrs
8.	REPORT GENERATION.	5 hrs
9.	FOUNDATION DESIGN.	5 hrs

Duration of the Course: 45 hours.

Minimum Eligibility: UG&PG

Learning outcomes:

1. Students will be able to complete object-oriented instinctive 2D/3D graphic model.
2. Students will know to make isometric & perspective views and 3D.
3. This course will introduce one to STAAD Pro's state-of-the-art user interface, prevailing analysis and design engines with sophisticated finite element (FEM), visualization tools, and dynamic analysis capabilities.
4. Students will learn how to achieve user-specified design parameters to customize.
5. Students will know to perform code check, member selection, and optimized member selection consisting of analysis/design.

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SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF CIVIL ENGINEERING

ACADEMIC YEAR 2019-2020

1.3.2 Number of value-added courses for imparting transferable and life skills offered during the year

1.3.3 Total number of students enrolled in the courses under 1.3.2 above

S. No	Name of the value added courses (with 30 or more contact hours)offered
1.	TOTAL STATION.
2.	AUTOCAD SOFTWARE.
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5.	STADD PRO.
6.	FIRE PROTECTION , SERVICES AND MAINTENANCE.
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DEPARTMENT OF CIVIL ENGINEERING

27.01.2020

CIRCULAR

SUB: Add on Course–Reg

It is informed that Add on Course-Certificate Course-2020 for students will be started on 03.02.2020 the academic year 2019-2020 Even Semester. The detailed schedule will be given by the departments.

Head of the departments are requested to inform their students about the Add on Course– 2020 on **FIRE PROTECTION, SERVICES AND MAINTENANCE** and the course coordinator is Mr. S. VIGNESH and motivates them to attend the course.

HOD's are requested to nominate one faculty member to co-ordinate the Add on Course.

HOD

HEAD OF THE DEPARTMENT
DEPARTMENT OF CIVIL ENGINEERING
PRIST UNIVERSITY
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DEPARTMENT OF CIVIL ENGINEERING

TIME TABLE-ADD ON COURSE FIRE PROTECTION, SERVICES AND MAINTENANCE

Time: 02:00 PM to 04.00 PM

MONTH	DATE	HOURS	INCHARGE
FEBRUARY	03.2.2020	16 hrs	Mr. S. VIGNESH
	07.2.2020		
	10.2.2020		
	14.2.2020		
	17.2.2020		
	21.2.2020		
	24.2.2020		
	28.2.2020		
MARCH	02.03.2020	16 hrs	
	06.03.2020		
	09.03.2020		
	13.03.2020		
	16.03.2020		
	20.03.2020		
	23.03.2020		
	27.3.2020		
APRIL	03.04.2020	13 hrs	
	06.04.2020		
	08.04.2020		
	10.04.2020		
	13.02.2020		
	15.04.2020		
	16.04.2020		

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ENGINEERING&TECHNOLOGY

ADD ON COURSE BROCHURE

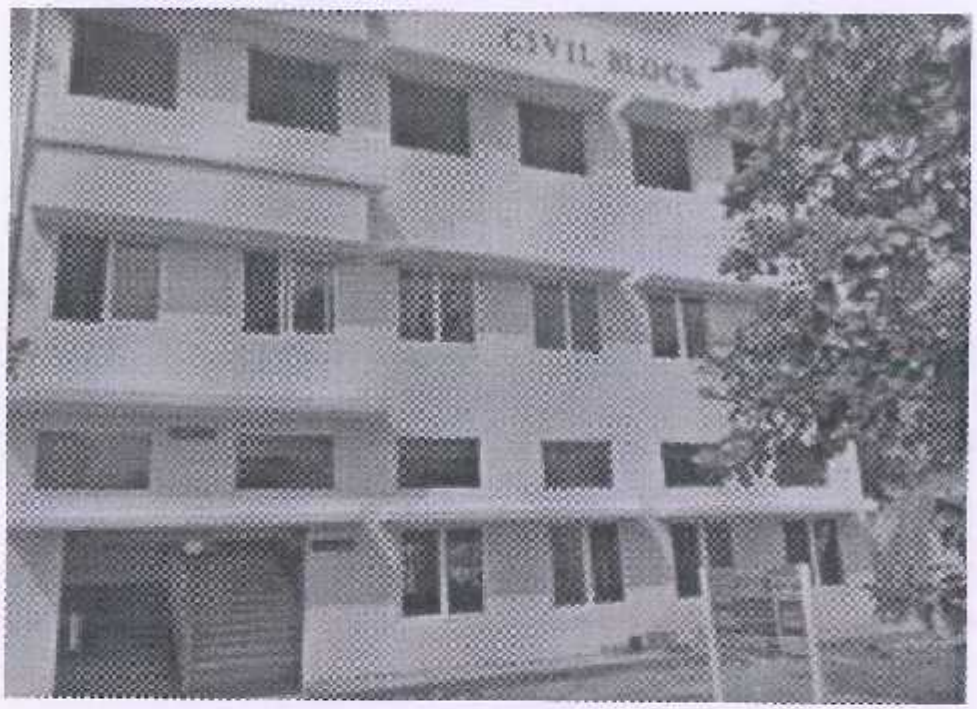
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DEPARTMENT OF CIVIL ENGINEERING



CERTIFICATE COURSE

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INTRODUCTION ABOUT THE COURSE

Effective fire safety equipment is a crucial component of any building's protection plan. As a business owner, it's important that you're knowledgeable in fire safety equipment maintenance and guidelines for regular inspections and understand the significance of keeping these lifesaving devices in optimal condition. Fire alarms, sprinklers, and extinguishers play a pivotal role in early fire detection, containment, and suppression. However, these systems must be well-maintained to ensure they function properly in the event of a fire emergency.

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THANJAVUR - 613 403, TAMIL NADU

Outline of the course:

S.No	Topics	Minimum
1	Fire Protection: Process of combustion in fire, Effect of fire load & ventilation condition on enclosure fire, growth and decay of fire in enclosure	5hrs
2	Concepts of fire resistant and severity, Effect of fire on materials. Simple Design of elements for given fire resistance.	5hrs
3	Planning, Fire detection & suppression systems, Smoke venting	5hrs
4	Lifts & Vertical Transportation: arrangement of lifts and Design for optimum service condition.	5hrs
5	Building Services as a system, Capacity of storage and sizing, control system etc. & intelligent building.	5hrs
6	Water Supply, Hydraulic design, Storage Distribution, Component of cold & hot water supply system.	5hrs
7	Waste water & Drainage systems: Fixture units & Design of system and elements of electrical services.	5hrs
8	Planned maintenance: Planning maintenance, schedule & contingency maintenance, levels of planning, planned inspection, etc	5hrs
9	Effect of design on maintenance, Diagnosis, appraisal, structural defects & various methods of repair	5hrs

Duration of the Course: 45hours
(In hours)

Minimum Eligibility: UG&PG

Learning outcomes:

1. Apply strategies, tactics and Incident Command/Incident Management skills to emergency incidents
2. Application of management and leadership principles to Fire Department operations, inter-agency cooperation and implementation of policies and procedures
3. Development of skills and education for employment and advancement in Fire and Emergency Services.

HOD

HEAD OF THE DEPARTMENT
DEPARTMENT OF CIVIL ENGINEERING
PRIST UNIVERSITY
VALLAM, THANJAVUR

DEAN
School of Engineering and Tech
Pennaiyah Ramaiyam Institute of
Science and Technology (PRIST)
Deemed to be University
Vallam, Thanjavur-613 403.

REGISTRAR
Pennaiyah Ramaiyam Institute of
Science & Technology (PRIST)
(Institution Deemed to be University-
U/s 3 of the UGC Act, 1956)
THANJAVUR-613 403, TAMIL NADU

PRIST
DEEMED TO BE
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NAAC ACCREDITED
THANJAVUR – 613 403 - TAMIL NADU

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF CIVIL ENGINEERING

ACADEMIC YEAR 2019-2020

1.3.2 Number of value-added courses for imparting transferable and life skills offered during the year

1.3.3 Total number of students enrolled in the courses under 1.3.2 above

S. No	Name of the value added courses (with 30 or more contact hours)offered
1.	3D PRINTING TECHNOLOGY.
2.	BIM FUNDAMENTALS FOR ENGINEERS.
3.	TOTAL STATION & GPS.
4.	REVIT ARCHITECTURE.
5.	STADD PRO.
6.	FIRE PROTECTION, SERVICES AND MAINTENANCE.
7.	RIVER ENGINEERING.

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DEPARTMENT OF CIVIL ENGINEERING

27.01.2020

CIRCULAR

SUB: Add on Course–Reg

It is informed that Add on Course-Certificate Course-2020 for students will be started on 03.02.2020 the academic year 2019-2020 Even Semester. The detailed schedule will be given by the departments.

Head of the departments are requested to inform their students about the Add on Course–2020 on **RIVER ENGINEERING** and the course coordinator is Mrs.M. KAJINABEGAM and motivates them to attend the course.

HOD's are requested to nominate one faculty member to co-ordinate the Add on Course.

HOD

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DEPARTMENT OF CIVIL ENGINEERING
PRIST UNIVERSITY
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Vallam, Thanjavur-613 403.

Copy to:

HOD's for necessary action

Notice Board

File

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ENGINEERING&TECHNOLOGY

ADD ON COURSE BROCHURE

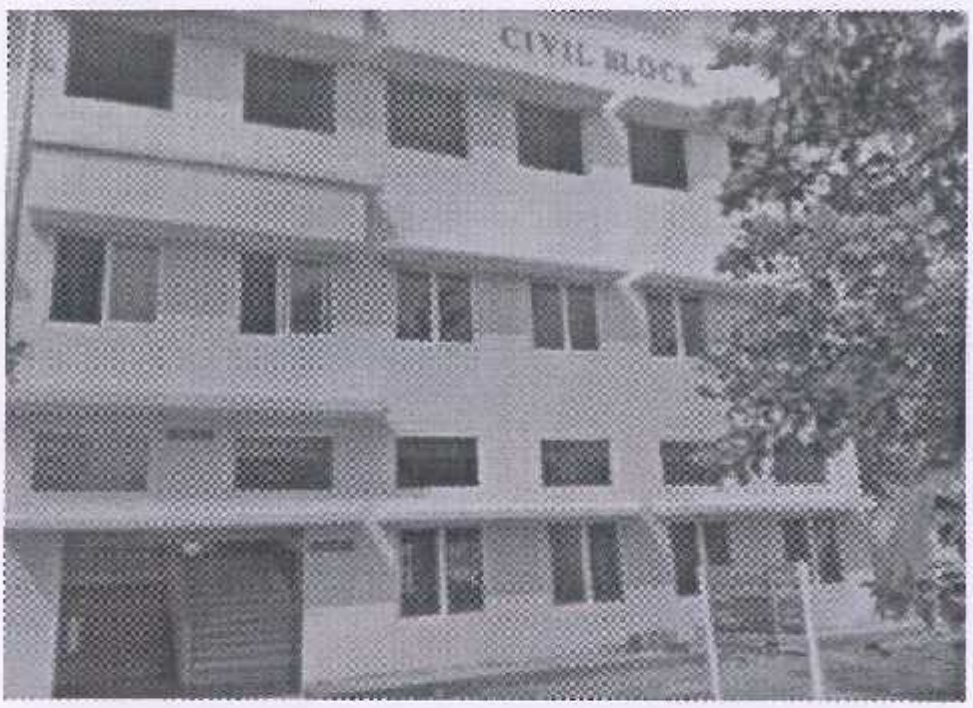
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DEPARTMENT OF CIVIL ENGINEERING



CERTIFICATE COURSE

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(Institution Deemed to be University-
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THANJAVUR-613 403. TAMIL NADU.

ABOUT PRIST DEEMED TO BE UNIVERSITY

Ponnaiyah Ramajayam Institute of Science & Technology (PRIST), made a for into the academic domain, with the establishment of SriRam Institute of Computer Science and Technology in 1985. Over time, various institutions of higher learning such as an Arts and Science College, College of Engineering and Technology, College of Education, Research Institution, Commerce & Business Management, Architecture, Agriculture, Law, Pharmacy & Polytechnic College, added feathers to the PRIST crown. PRIST University received university status under section 3 of UGC Act 1956 &also got NAAC Accredited status. Today, PRIST commands a massive student base, spread across a whole array of campuses such as Trichy, Kumbakonam, Puducherry, Chennai, Madurai etc.

Ponnaiyah Ramajayam College applied for NAAC assessment and accreditation Council and was awarded an "A" grade, thus making it the first "A" grade awarded college in the Bharathidasan University area. The college then submitted its proposal to the Ministry of Human Resource Development, Government of India for deemed university status.

The academic reach extends right from school education up to the level of the Ph.D Doctoral programmes in a rich array of disciplines such as Medicine, Engineering, Arts & Science, Education, Pharmacy, Management, Law, Agriculture &Architecture.

SCHOOL OF ENGINEERING & TECHNOLOGY

The Departments of Civil Engineering, Computer Science and Engineering, Electronics and Communication Engineering, Mechanical Engineering, and Electrical and Electronics Engineering were established in2008 with an objective to impart quality education to meet today's competitive environment. All Departments has well experienced &dedicated faculty with strong commitment to provide vibrant learning environment to student in order to help them excel. To keep pace with the current technological trends, all departments have well designed, constantly reviewed syllabus to incorporate all advanced in existing& Emerging Technologies which gives the students a holistic and pragmatic view of the present scenario of Industry.

HOD

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DEPARTMENT OF CIVIL ENGINEERING
PRIST UNIVERSITY
VALLAM, THANJAVUR

DEAN
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Ponnaiyah Ramajayam Institute of
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INTRODUCTION ABOUT THE DEPARTMENT

In PRIST UNIVERSITY the Department of Civil Engineering was established in 2008. Since then its excellence in each and every aspects has played an important role in the Institute. Our Department is offering B.Tech – Civil Engineering M.Tech – Structural Engineering & Doctorate in Civil Engineering. Civil Engineering Department has been actively involved in research and consultancy in all the fields of Civil Engineering. The Department has well equipped laboratories and research facilities. It is constantly modernizing the laboratory facilities with latest technology and research know-how.

The Department offers PG/UG degree courses and a number of add on courses. Group electives or major electives are offered to enable students choose from wide choice of fourteen courses. Also, we offer skill based electives, from the point of view of employment opportunities and free elective courses of inter disciplinary nature. The Advanced Learners are offered Extra Credit courses for earning extra credits.

INTRODUCTION ABOUT THE COURSE

The primary function of a river channel is the conveyance of water and sediment. It should be appreciated that this primary function cannot be stopped. Nor can the long-term average be changed by measures carried out in the riverbed. Thus alterations in space and time can only be made within the context of ultimate equilibrium. The most conspicuous aspect of a river channel, apart from its size, is the amount of water it carries. This is best shown in a hydrograph. A hydrograph is a time series of water level data or discharge data. Changes in discharge cause changes in water level in the river channel. At very high discharges a river channel overflows its banks on to the adjacent land. This periodically flooded land is called the flood plain. Whilst in the upper reaches the flood plains are usually narrow or even non-existent, in the lower reaches of a river the flood plains could be tens of kilometers wide.

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THANJAVUR-613 403, TAMIL NADU

Outline of the course:

S.No	Topics	Minimum
1.	PHYSICAL PROPERTIES AND EQUATIONS.	5hrs
2.	STEADY FLOW IN RIVERS.	5hrs
3.	UNSTEADY FLOW IN RIVERS.	5hrs
4.	RIVER EQUILIBRIUM.	5hrs
5.	RIVER DYNAMICS.	5hrs
6.	RIVER STABILIZATION AND RIVER TRAINING WORK.	5hrs
7.	RIVER ENGINEERING.	5hrs
8.	RIVER MODELLING.	5hrs
9.	MULTIDIMENSIONAL RIVER MODELS.	5hrs

Duration of the Course: 45hours

Minimum Eligibility: UG&PG

Learning outcomes:

1. River engineering training can help you learn about river ecology, hydrological and hydraulic processes, and river restoration.
2. River ecology: How urbanization and land-use changes can harm aquatic systems and river health.
3. Hydrological and hydraulic processes: How these processes work in rivers.
4. River restoration: How to manage and restore urban rivers to mitigate the effects of urbanization.

HOD

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SCHOOL OF AGRICULTURE

VALUE ADDED COURSE

2019-2020

PRIST
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NAAC ACCREDITED
THANJAVUR – 613 403 - TAMILNADU

SCHOOL OF AGRICULTURE

CIRCULAR

Date: 18.06.2019

This is to inform B.Sc., Agriculture& B.Sc., (HONS.) Agriculture students that the value-added course programme classes for the academic year **2019-2020** will be commenced from **24.06.2019**. Hence, requesting all the registered students to attend the classes without fail.

DEAN

SCHOOL OF AGRICULTURE

DEAN
School of Agriculture
Ponnaiyah Ramajayam Institute of
Science & Technology (PRIST)
Institution Deemed to be University
U/s 3 of the UGC Act, 1956
THANJAVUR - 613 403, TAMIL NADU.

Copy to,

All teaching staff members

Students

Co - Ordinator

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THANJAVUR-613 403, TAMIL NADU.

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SCHOOL OF AGRICULTURE



INFORMATION BROCHURE

VALUE ADDED COURSE

B. Sc., (Agriculture) & B. Sc., (Hons.) Agriculture Programmes

Certificate course on

"INTEGRATED PEST AND DISEASE MANAGEMENT"

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About the University

The Institute was founded in 1985 by Prof. P. Murugesan. It was initially known as the Institute of Computer Science and Technology. Murugesan founded the Institute to introduce computer education to the Thanjavur District. In 1988, the Institute received affiliation from Bharathidasan University to offer Postgraduate Diploma Programmes in Computer Applications.

Thereafter it expanded to include an Arts and Science College, College of Engineering and Technology, College of Education, Research Institution, and Polytechnic College.

In 2004, Ponnaiya Ramajayam College applied for NAAC assessment and accreditation and was awarded an "A" grade, thus making it the first "A" grade awarded college in the Bharathidasan University area.The college then submitted its proposal to the Ministry of Human Resource Development, Government of India for deemed university status.

On 4 January 2008, the Institute was conferred deemed university status based on the recommendations of the UGC Expert Committee, the Ministry of HRD, and the Government of India. The Institute also received approval from the Distance Education Council (DEC) and its B.Ed. course is approved by The National Council for Teacher Education (NCTE).

In 2015, the Institute once again applied for NAAC assessment and accreditation and was awarded a "B" grade. In a letter signed by an undersecretary in the Union Health Ministry, it was stated that the Institute, which was granted conditional approval to offer 150 MBBS seats last year, was debarred from admitting students for the academic years of 2017-18 and 2018-19.

Currently, the Institute offers degrees in Medicine, Engineering, Arts & Science, Education, Pharmacy, Management, Agriculture and Technology, as well as Ph.D. programmes in some of these fields.

About the Department

The School of Agriculture under PonnaiyahRamajayam Institute of Science and Technology (PRIST) was established at Vallam, Thanjavur in the year 2016.

The agriculture is intended to impart high quality education so as to produce not just agricultural graduates but agro technocrats with practical and conceptual skills. With precise curriculum and elaborate course modules, which provides education, research and training along

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School of Agriculture
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Institution Deemed to be University
Thanjavur - 613 403, Tamil Nadu

withfirst hand field experiences, the students would sure be transformed as skilled human resources.

The department has spacious laboratories such as Plant Pathology, Microbiology, Agricultural Entomology, Agricultural Botany and Genetics, Agronomy, Horticulture, Economics lab and Audio – Visual lab. All the laboratories are fully equipped with latest, modern and sophisticated equipment.

The Department has young as well as experienced and dynamic personalities as faculty, is involved in providing quality education at Undergraduate (UG) levels. The staffs are from various disciplines in Doctorate like Plant Pathology, Microbiology, Soil science, Plant Genetics and Veterinary. The staffs are from various disciplines in masters like Agricultural Entomology, Agronomy, Agricultural Extension, Horticulture and Economics. Many of the staff members are encouraged to pursue their higher studies and research works.

About the Course

Introduction and Overview

- The Integrated pest and disease management (IPDM) course as "an ecosystem-based strategy that focuses on long-term prevention of pests, diseases or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties.
- In an effort to increase the sustainability of an agricultural system, IPM "programs" are formulated on a combination of cultural, biological, mechanical, and chemical control methods.
- IPM does not inherently eliminate the use of pesticides as a control method; an IPM program for a specific crop identifies the levels of pest damage that can be feasibly tolerated before chemical control is required to keep pest populations under control to maintain a viable crop.
- Through proper timing and concentration of pesticide applications, farmers may be able to minimize non- target species effects and environmental impacts, while reducing the frequency and associated costs of applications.

What is IPDM?

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IPDM is Integrated pest and disease management and it involves in the pest and disease problems and then applying most appropriate solution. Integrated pest management (IPDM), also known as integrated pest control (IPDC) is a broad-based approach that integrates both chemical and non- chemical practices for economic control of pests. IPDM aims to suppress pest & disease populations below the economic injury level (EIL).

Benefits of starting IPDM

- IPDMisusedin agriculture, horticulture, forestry, human habitations, preventive conservation of cultural property and general pest control, including structural pest management, turf pest management and ornamental pest management. IPM practices help to prevent and slow the development of resistance, known as resistance management.

Learning outcomes of the course unit

- It can help to students to know about pest and damage, how to control pest and what are the methods were useful to prevent insect pest &disease. Students can learn different types of symptoms were take place in plant parts. they can know about what is IPDM and their use.
- This subject helps to identify what kind of pests and their symptoms developed on leaves. They know how to control pests and what are the herbicides used for different crops.

COURSE CONTENT

Eligibility: Any graduates / ongoing degree students shall be eligible for the admission to the course.

Duration of the Program: 45 hrs. Value added Certificate Course.

Lecture Hours: 4.30 p.m. to 5.30 p.m. (Monday to Saturday)

Mode of Examination: Written Exam and seminar

Award of Certificate: The candidate successfully qualifying the course shall be awarded a certificate to that effect in the appropriate form by School of Agriculture, PRIST Deemed to be University, Vallam, Thanjavur.

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SCHOOL OF AGRICULTURE

CIRCULAR

Date: 26.10.2019

This is to inform B.Sc., Agriculture& B.Sc., (HONS.) Agriculture students that the value-added course programme classes for the academic year 2019-2020 will be commenced from 02.11.2019. Hence, requesting all the registered students to attend the classes without fail.

DEAN

SCHOOL OF AGRICULTURE

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THANJAVUR - 613 403, TAMIL NADU.

Copy to,

All teaching staff members

Students

Co - Ordinator

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SCHOOL OF AGRICULTURE



INFORMATION BROCHURE

VALUE ADDED COURSE

B. Sc., (Agriculture) & B. Sc., (Hons.) Agriculture

Certificate course on

"MARKET ANALYSIS"

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THANJAVUR - 613 403, TAMIL NADU.

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About the Department

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The agriculture is intended to impart high quality education so as to produce not just agricultural graduates but agro technocrats with practical and conceptual skills. With precise and deliberate course modules, which provides education, research and training in agriculture and allied fields, experiences, the students would surely be transformed as skilled human resources.

REGISTRAR

Ponnaiyah Ramajayam Institute of Science & Technology (PRIST) (Institution Deemed to be University- U/s 3 of the UGC Act, 1956) THANJAVUR - 613 403, TAMIL NADU.

Thedepartmenthasspaciouslaboratoriessuchas Plant Pathology, Microbiology, Agricultural Entomology, Agricultural Botany and Genetics, Agronomy, Horticulture, Economics lab and Audio-Visual lab. All the laboratories are fully equipped with latest, modern and sophisticated equipment.

The Department has young as well as experienced and dynamic personalities as faculty, is involved in providing quality education at Undergraduate (UG) levels. The staffs are from various disciplines in Doctorate like Plant Pathology, Microbiology, Soil science, Plant Genetics and Veterinary. The staffs are from various disciplines in masters like Agricultural Entomology, Agronomy, Agricultural Extension, Horticulture and Economics. Many of the staff members are encouraged to pursue their higher studies and research works.

About the Course Introduction and Overview

- Market analysis is a business model that is growing in popularity as Indian farmers recognize a need to analyse their farm incomes.
- By combining agriculture and market analysis offers marketing activities to transport facilities and economic diversification to farmers. Planning for market analysis requires a forward-thinking, locally-driven process.

What is Market analysis?

- A Market analysis studies the attractiveness and dynamics of a special market within a special industry. It is part of the industry analysis and thus in turn of the global environmental analysis. With the help of SWOT analysis, adequate business strategies of a company.
- The market analysis is also known as a documented investigation of a market that is used to inform a firm's planning activities, facility expansion, purchases of capital equipment and many other aspects of a company.
- Some elements of market analysis as given below:
  - Market size
  - Market trends
  - Market opportunity

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BenefitsofMarketanalysis

- A market analysis can reduce risk, identify emerging trends and help project revenue. We can use marketing analysis at several stages of our business, and it can even be beneficial to conduct every year to keep up with any major changes in the market.
- , A detailed market analysis will usually be part of our business plan, since it gives a greater understanding of our audience and competition. This will help to build a more targeted marketing strategy.

StepsofMarketanalysis

- Researchyourindustry
- Investigatethecompetitivelandscape Identifymarketgaps
- Defineyourtargetmarket
- Identifybarrierstoentry
- Createsalesforecast

Learningoutcomesofthecourseunit

- To be in and diversify knowledge about contemporary marketing research, explain the relationship and differences between marketing research and marketing information systems.
- Utilize information of a firms external and internal marketing environment to identify and prioritise appropriate marketing strategies.
- Evaluate and act upon the ethical and environmental concerns linked to marketing activities.

Eligibility: Any graduates/ongoing degree students shall be eligible for the admission to the course.

Duration of the Program: 45 hrs. Value added Certificate

Course Lecture Hours: 4.30 p.m. to 5.30 p.m. (Monday to Saturday) **Mode of Examination:** Written Exam and seminar

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Award of Certificate: The candidate successfully qualifying the course shall be awarded acertificate to that effect in the appropriate form by School of Agriculture, PRIST Deemed tobeUniversity, Vallam, Thanjavur.

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SCHOOL OF AGRICULTURE

CIRCULAR

Date: 10.12.2019

This is to inform B.Sc., Agriculture& B.Sc., (HONS.) Agriculture students that the value-added course programme classes for the academic year **2019-2020** will be commenced from **23.12.2019.** Hence, requesting all the registered students to attend the classes without fail.

DEAN

SCHOOL OF AGRICULTURE

DEAN
School of Agriculture
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All teaching staff members

Students

Co - Ordinator

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SCHOOL OF AGRICULTURE

CIRCULAR

Date: 26.08.2019

This is to inform B.Sc., Agriculture& B.Sc., (HONS.) Agriculture students that the value-added course programme classes for the academic year 2019-2020 will be commenced from 02.09.2019. Hence, requesting all the registered students to attend the classes without fail.

DEAN

SCHOOL OF AGRICULTURE

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SCHOOL OF AGRICULTURE



INFORMATION BROCHURE

VALUE ADDED COURSE

B. Sc., (Agriculture),

B. Sc., (Hons.) Agriculture,

Certificate course on

"MEDICINAL GARDEN"

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About the University

The Institute was founded in 1985 by Prof. P. Murugesan. It was initially known as the Institute of Computer Science and Technology. Murugesan founded the Institute to introduce computer education to the Thanjavur District. In 1988, the Institute received affiliation from Bharathidasan University to offer Postgraduate Diploma Programmes in Computer Applications.

Thereafter it expanded to include an Arts and Science College, College of Engineering and Technology, College of Education, Research Institution, and Polytechnic College.

In 2004, Ponnaiya Ramajayam College applied for NAAC assessment and accreditation and was awarded an "A" grade, thus making it the first "A" grade awarded college in the Bharathidasan University area. The college then submitted its proposal to the Ministry of Human Resource Development, Government of India for deemed university status.

On 4 January 2008, the Institute was conferred deemed university status based on the recommendations of the UGC Expert Committee, the Ministry of HRD, and the Government of India. The Institute also received approval from the Distance Education Council (DEC) and its B.Ed. course is approved by The National Council for Teacher Education (NCTE).

In 2015, the Institute once again applied for NAAC assessment and accreditation and was awarded a "B" grade. In a letter signed by an undersecretary in the Union Health Ministry, it was stated that the Institute, which was granted conditional approval to offer 150 MBBS seats last year, was debarred from admitting students for the academic years of 2017-18 and 2018-19.

Currently, the Institute offers degrees in Medicine, Engineering, Arts & Science, Education, Pharmacy, Management, Agriculture and Technology, as well as Ph.D. programmes in some of these fields.

About the Department

The School of Agriculture under Ponnaiyah Ramajayam Institute of Science and Technology (PRIST) was established at Vallam, Thanjavur in the year 2016.

The department has spacious laboratories such as Plant Pathology, Microbiology, Agricultural Entomology, Agricultural Botany and Genetics, Agronomy, Horticulture,

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Economics lab and Audio – Visual lab. All the laboratories are fully equipped with latest, modern and sophisticated equipment.

The Department has young as well as experienced and dynamic personalities as faculty, is involved in providing quality education at Undergraduate (UG) levels. The staffs are from various disciplines in Doctorate like Plant Pathology, Microbiology, Soil science, Plant Genetics and Veterinary. The staffs are from various disciplines in masters like Agricultural Entomology, Agronomy, Agricultural Extension, Horticulture and Economics. Many of the staff members are encouraged to pursue their higher studies and research works.

About the Course

Introduction

Medicinal plant gardens are primarily focused on the conservation, cultivation, research and educational activities related to plant species known for medicinal purposes

What is Medicinal Garden?

Medicinal garden is a natural repository of medicinal plants which signifies a rich heritage of traditional knowledge and plant diversity. A medicinal plant contains substances that can be used for therapeutic purposes.

Benefits of Medicinal Garden

- Medical gardens, also known as healing gardens, can provide many benefits, including: Natural remedies
- Medicinal gardens can offer remedies for various health conditions and ailments.
  Stress relief
- Spending time in a medicinal garden can promote relaxation and reduce stress levels.
- Biodiversity
- Medicinal gardens can provide a habitat for birds, insects, and other wildlife, supporting conservation efforts.

Eligibility: Any graduates / ongoing degree students shall be eligible for the admission to the course.

Duration of the Program: 45 hrs. Value added Certificate Course.

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(Institution Deemed to be University-
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Lecture Hours: 4.30 p.m. to 5.30 p.m. (Monday to Saturday)

Mode of Examination: Written Exam and seminar

Award of Certificate: The candidate successfully qualifying the course shall be awarded a certificate to that effect in the appropriate form by School of Agriculture, PRIST Deemed to be University, Vallam, Thanjavur.

Course content

Unit 1 Medicinal Garden definition, history, importance and future prospects. Medicinal Plants – past and present status in world and India.

Unit 2 - Medicinal plant diversity & local healthcare. Medicinal plant conservation – issues and approaches. Medicinal plant conservation areas (MPCA), Non-timber forest products (NTFP), Good Agriculture Practices (GAP). Indian Himalayan region (IHR).

Unit 3 – Promotion of medicinal plant sector at national level: National Medicinal Plant Board and State Medicinal Plant Boards - objectives and functions.

Unit 4 – Important medicinal plants of India with their systematics, geographical distribution and uses. *Acorus calamus, Adhatoda vasica, Abrus precatorius Aloe vera, Phyllanthus amarus, Stevia rebaudiana, Belladona* and Cinchona.

Unit 5 –Important aromatic plants of India with their systematics, geographical distribution and uses. Introduction and historical background of aromatic plants. Aromatic and cosmetic products. Raw material for perfumes etc. Cosmetic Industries. Major, minor and less known aromatic plants of India.

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SCHOOL OF AGRICULTURE

CIRCULAR

Date: 03.03.2020

This is to inform B.Sc., Agriculture& B.Sc., (HONS.) Agriculture students that the value-added course programme classes for the academic year 2019-2020 will be commenced from **09.03.2020**. Hence, requesting all the registered students to attend the classes without fail.

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Students

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SCHOOL OF AGRICULTURE



INFORMATION BROCHURE

VALUE ADDED COURSE

B. Sc., (Agriculture),

B. Sc., (Hons.) Agriculture,

Certificate course on

"FISH FARMING"

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Thereafter it expanded to include an Arts and Science College, College of Engineering and Technology, College of Education, Research Institution, and Polytechnic College.

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The department has spacious laboratories such as Plant Pathology, Microbiology, Agriculture Entomology, Agricultural Botany and Genetics, Agronomy, Horticulture,

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Economics lab and Audio – Visual lab. All the laboratories are fully equipped with latest, modern and sophisticated equipment.

The Department has young as well as experienced and dynamic personalities as faculty, is involved in providing quality education at Undergraduate (UG) levels. The staffs are from various disciplines in Doctorate like Plant Pathology, Microbiology, Soil science, Plant Genetics and Veterinary. The staffs are from various disciplines in masters like Agricultural Entomology, Agronomy, Agricultural Extension, Horticulture and Economics. Many of the staff members are encouraged to pursue their higher studies and research works.

About the Course

Introduction and Overview

- Identify and understand different types of fishes and fin fish anatomy related to classification of commercially important crustaceans and mollusks up to sub class level and their salient features and distribution.
- Apply knowledge on shell fish anatomy and examine identification and morphology of cultivable organisms

What is Fish Farming?

Fish farming or Pisciculture involves commercial breeding of fish, most often for food, in fish tanks or artificial enclosures such as fish ponds.

Objectives of Fish Farming

- To reduce operating costs and maximize the farmer's income.
- To develop a more economic ration for fish from wastes to useful fish protein production.
- To solve the waste management problem.
- To control the pollution problem associated with livestock (in the form of fly and odour).

Eligibility: Any graduates / ongoing degree students shall be eligible for the admission to the course.

Duration of the Program: 45 hrs. Value added Certificate Course

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SCHOOL OF AGRICULTURE

CIRCULAR

Date: 21.08.2019

This is to inform B.Sc., Agriculture& B.Sc., (HONS.) Agriculture students that the value-added course programme classes for the academic year 2019-2020 will be commenced from 28.08.2019. Hence, requesting all the registered students to attend the classes without fail.

DEAN

SCHOOL OF AGRICULTURE

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Copy to,

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Students

Co - Ordinator

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SCHOOL OF AGRICULTURE



INFORMATION BROCHURE

VALUE ADDED COURSE

B. Sc., (Agriculture) & B. Sc., (Hons.) Agriculture Programmes

Certificate course on

"SUSTAINABLE SUGARCANE INITIATIVE"

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About the Department

The School of Agriculture under Ponnaiyah Ramajayam Institute of Science and Technology (PRIST) was established at Vallam, Thanjavur in the year 2018.

The agriculture is intended to impart high quality education so as to produce not just agricultural graduates but agro technocrats with practical and conceptual skills. With precise and deliberate course modules, which provides education, research and training along with first hand field experiences, the students would sure be transformed as skilled human resources.

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About the Course

Introduction and Overview

- The major principles that govern SSI can be stated as below
- Cultivation aspects
- Fertigation schedule for sugarcane in SSI
- Comparison between SSI methods of Sugarcane Cultivation

What Conventional and is Sustainable Sugarcane Initiative (SSI)?

- The Sustainable Sugarcane Initiative (SSI) is yet another practical approach to sugarcane production which is based on the principles of 'more with less' in agriculture like System of Rice Intensification (SRI). SSI improves the productivity of water, land and labor, all at the same time, while reducing the overall pressure on water resources.
- Sustainable Sugarcane Initiative is a method of sugarcane production which involves using less seeds, less water and optimum utilization of fertilizers and land to achieve more yields. Driven by farmers, SSI is an alternate to conventional seed, water and space intensive Sugarcane cultivation.

The major principles that govern SSI

- Raising nursery in portrays using single budded chips
- Transplanting young seedlings (25-35 days old)
- Maintaining wider spacing (5x2 feet) in the main field

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- Providing sufficient moisture through effieient water manngement technological viz., drip fertigation (sub or sub surface)
- Encouraging organic method of nutrient and plant protection measures
- Practicing intercropping with effective utilization of land

Overall Benefits

- Improved water use efficiency
- Optimum use of fertilizers favour balanced availability of nutrient
- Better aeration and more penetration of sunlight favours higher sugar content
- Reduced cost of cultivation and increased returns through intercropping

Opportunities offered by SSI:

- Addresses the issue of late planting by raising seedlings and their transplantation later on which actually advances the entire process.
- Addresses the issue of narrow spacing as the technology is based on successful exploitation of sunlight and air by following wider spacing in the main field.
- Addresses the problem of improper method of irrigation, namely, flooding. Significant reduction in seed requirement, as only the bud is used as seed material

Learning outcomes of the course unit:

The students finally come up with the practical knowledge of growing sugarcane in SSI method which promote self employability by providing more yield.

Eligibility: Any graduates / ongoing degree students shall be eligible for the admission to the course.

Duration of the Program: 45 hrs. Value added Certificate Course.

Lecture Hours: 4.30 p.m. to 5.30 p.m. (Monday to Saturday)

Mode of Examination: Written Exam and seminar

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COURSE OUTCOMES

1. Describe the construction, working, merits and demerits of different combustion chamber of S I and C I engines.
2. Explain the need, construction and working of different advancements in Air intake systems of engine.
3. Explain the need, construction and working of different alternate/modern propulsion systems of Auto mobiles.
4. Explain the need, construction and working of different alternate/modern suspension and steering systems of Automobile.
5. Explain the need, construction and working of different alternate/modern Final drive and Braking systems of Automobiles.

REFERENCES

1. Understanding Automotive electronics William Ribben Butterworth Heinemann.
2. A Systems Approach to Automotive technology Jack Erjavec Cengage Learning.
3. Electronic Engine Controls Steve.V.Hatch Cengage Learning.
4. Truck engines Fuel& computerized management systems Sean Bennett Cengage Learning.
5. Advanced vehicle technology Heinz Heisler Butterworth Heinemann.

HOD
Department of Mechanical Engineering
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PONNAIYAH RAMAJAYAM INSTITUTE OF SCIENCE & TECHNOLOGY (PRIST)

Declared as DEEMED-TO-BE-UNIVERSITY U/s 3 of UGC Act, 1956

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL ENGINEERING

CIRCULAR

PRIST /MECH/CIRC/ 2022-2023 /VALUE-ADDED COURSES/02 20.02.2023

It is informed that the VALUE-ADDED COURSES will be conduct from 04.03.2023 to 29.04.2023.

I) CERTIFICATE COURSES

- **ARTIFICIAL NEURAL NETWORKS**

Venue : Lecture hall 2.

Timing : 10.00 A.M to 4.00 P.M

Duration: 45 hrs

Students from mechanical department those who are interest can enroll their names and course to the HOD on or before 24.02.2023

HOD

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HOD
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PRIST
DEEMED TO BE UNIVERSITY
SCHOOL OF ENGINEERING & TECHNOLOGY
DEPARTMENT OF MECHANICAL ENGINEERING

ABOUT THE INSTITUTION

Ponnaiyah Ramajayam Institute of Science and Technology (PRIST) Deemed to be University (U/s 3 of the UGC Act 1956), is one of the renowned units of Ponnaiyah Ramajayam Institutions, which are serving for more than 25 years in promoting quality education and research for our Indian community, since its Inception. The Institution is now brimming with many social responsibilities, particularly in promoting quality education through research.

ABOUT THE DEPARTMENT

The department of Mechanical Engineering came into existence in 2000 with an objective to impart quality education to meet today's competitive environment.

Department has well experienced and dedicated Faculty with strong commitment to provide a vibrant learning environment to the students in order to help them excel.

To keep pace with the current technological trends, the department has a well designed, constantly reviewed syllabus to incorporate all advancements in existing and emerging technologies which gives the students a holistic and pragmatic view of the present scenario of industry.

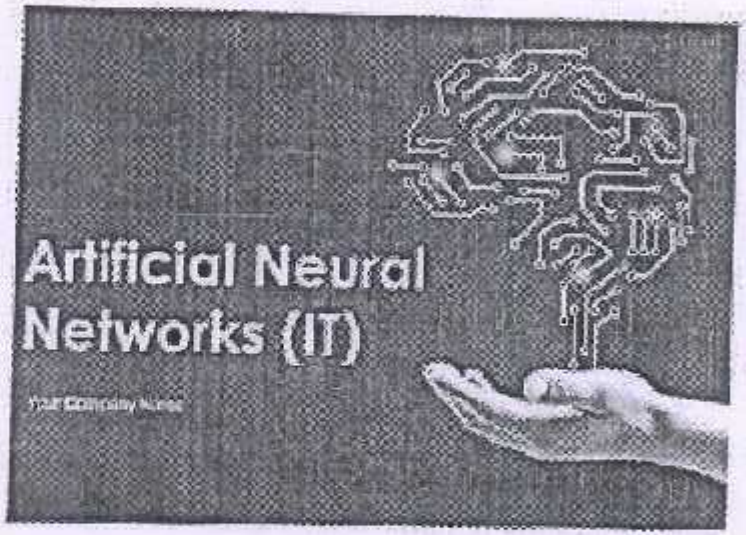
INFORMATION BROUCHER VALUE ADDED COURSE- ARTIFICIAL NEURAL NETWORKS

COURSE HIGHLIGHTS

- The topics of deep learning and artificial intelligence have become very popular due to their potential applications in many practical situations. The reason for the surge in these areas is the availability of huge computing power and large volumes of data.
- The key architectures used in these applications are deep neural networks and recurrent neural networks.
- The objectives of this course is to trace the historical developments of artificial intelligence leading to artificial neural networks (ANN).
- The course introduces the basic concepts and models of ANN for solving simple pattern recognition problems.

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- In particular, it includes analysis of feedforward and feedback neural networks, involving the key concepts of backpropagation learning and Boltzmann machine, and the pattern recognition tasks they perform.
- The course concludes with a discussion on the evolution of ANN architectures from learning to deep learning.



COURSE OBJECTIVES

Neural Networks are used in deep learning and machine learning and are one of the leading areas of innovation. You can get started in the field of neural networks with this free Neural Network Training basics course. In this course, you will learn the following:

- ✓ Artificial neural networks
- ✓ Backpropagation and gradient descent
- ✓ Convolutional neural networks
- ✓ Recurrent neural networks
- ✓ Long Short term memory

PRE-REQUISITES

Understand and design basic AI concepts and reverse engineering.

ELIGIBILITY

B.Tech – Mechanical students shall be eligible for the admission to the course.

COURSE DURATION: 45 Hours

Timing: 10.00 a.m - 4.00 pm

Department of ...
Ponnaiyah ...
Science & ...
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... 613 403.

ARTIFICIAL NEURAL NETWORKS

OBJECTIVES

1. To understand the biological neural network and to model equivalent neuron models.
2. To understand the architecture, learning algorithms.
3. To know the issues of various feed forward and feedback neural networks.
4. To explore the Neuro dynamic models for various problems.

UNIT-I INTRODUCTION 9

A Neural Network, Human Brain, Models of a Neuron, Neural Networks viewed as Directed Graphs, Network Architectures, Knowledge Representation, Artificial Intelligence and Neural NetworksLearning Process: Error Correction Learning, Memory Based Learning, Hebbian Learning, Competitive, Boltzmann Learning, Credit Assignment Problem, Memory, Adaption, Statistical Nature of the Learning Process

UNIT-II SINGLE LAYER PERCEPTRONS 9

Adaptive Filtering Problem, Unconstrained Organization Techniques, Linear Least Square Filters, Least Mean Square Algorithm, Learning Curves, Learning Rate Annealing Techniques, Perceptron --Convergence Theorem, Relation Between Perceptron and Bayes Classifier for a Gaussian Environment Multilayer Perceptron: Back Propagation Algorithm XOR Problem, Heuristics, Output Representation and Decision Rule, Computer Experiment, Feature Detection.

UNIT-III BACK PROPAGATION 9

Back Propagation and Differentiation, Hessian Matrix, Generalization, Cross Validation, Network Pruning Techniques, Virtues and Limitations of Back Propagation Learning, Accelerated Convergence, Supervised Learning

UNIT – IV SELF-ORGANIZATION MAPS (SOM) 9

Two Basic Feature Mapping Models, Self-Organization Map, SOM Algorithm, Properties of Feature Map, Computer Simulations, Learning Vector Quantization, Adaptive Patter Classification.

UNIT-V NEURO DYNAMICS 9

Dynamical Systems, Stability of Equilibrium States, Attractors, Neuro Dynamical Models, Manipulation of Attractors as a Recurrent Network Paradigm Hopfield Models – Hopfield Models, restricted boltzmen machine.

TOTAL HOURS: 45

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COURSE OUTCOMES

1. Upon completing this course, the student will be able to
2. Understand the similarity of Biological networks and Neural networks
3. Perform the training of neural networks using various learning rules.
4. Understanding the concepts of forward and backward propagations.
5. Understand and Construct the Hopfield models.

REFERENCES

1.Neural Networks in Computer Inteligance, Li Min Fu TMH 2003
2.Neural Networks -James A Freeman David M S Kapora Pearson Ed., 2004.
3.Artificial Neural Networks -- B. Vegnanarayana Prentice Hall of India P Ltd 2005

HOD
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DEAN
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Deemed to be University
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SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL ENGINEERING

CIRCULAR

PRIST /MECH/CIRC/ 2022-2023 /VALUE-ADDED COURSES/02 03.12.2022

It is informed that the VALUE-ADDED COURSES will be conduct from 17.12.2022 to 25.02.2023.

I) CERTIFICATE COURSES

➢ METROLOGY AND QUALITY CONTROL

Venue : Lecture hall 2.

Timing : 10.00 A.M to 4.00 P.M

Duration: 45 hrs

Students from mechanical department those who are interest can enroll their names and course to the HOD on or before 08.07.2019

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ABOUT THE INSTITUTION

Ponnaiyah Ramajayam Institute of Science and Technology (PRIST) Deemed to be University (U/s 3 of the UGC Act 1956), is one of the renowned units of Ponnaiyah Ramajayam Institutions, which are serving for more than 25 years in promoting quality education and research for our Indian community, since its Inception. The institution is now brimming with many social responsibilities, particularly in promoting quality education through research.

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ABOUT THE DEPARTMENT

The department of Mechanical Engineering came into existence in 2000 with an objective to impart quality education to meet today's competitive environment.

Department has well experienced and dedicated faculty with strong commitment to provide a vibrant learning environment to the students in order to help them excel.

To keep pace with the current technological trends, the department has a well designed, constantly reviewed syllabus to incorporate all advancements in existing and emerging technologies which gives the students a holistic and pragmatic view of the present scenario of industry.

INFORMATION BROUCHER VALUE ADDED COURSE-METROLOGY AND QUALITY CONTROL

COURSE HIGHLIGHTS

Metrology is divided into three basic overlapping activities:

- ✓ The definition of units of measurement
- ✓ The realization of these units of measurement in practice
- ✓ Traceability—linking measurements made in practice to the reference standards

These overlapping activities are used in varying degrees by the three basic sub-fields of metrology.

- ✓ Scientific or fundamental metrology, concerned with the establishment of units of measurement
- ✓ Applied, technical or industrial metrology—the application of measurement to manufacturing and other processes in society
- ✓ Legal metrology, covering the regulation and statutory requirements for measuring instruments and methods of measurement

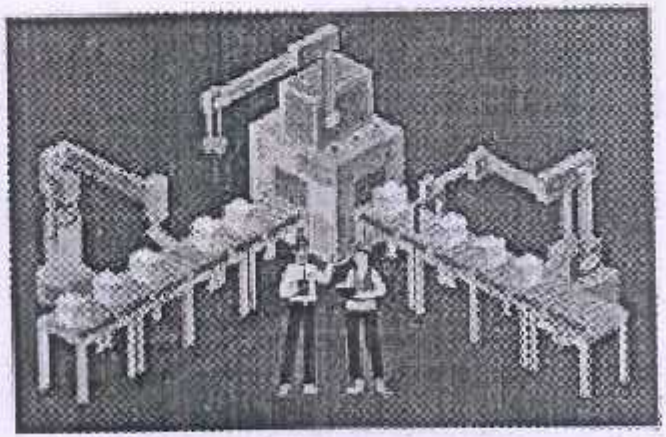
COURSE OBJECTIVES

"Metrology is the science of measurement, embracing both experimental and theoretical determinations at any level of uncertainty in any field of science and technology." Metrology is surely at the core of all practical scientific endeavours.

- Inspection of engineering parts with various precision instruments. Design of part, tolerances and fits.
- Principles of measuring instruments and gauges and their uses.
- Evaluation and inspection of surface roughness.
- Inspection of spur gear and thread elements.
- Machine tool testing to evaluate machine tool quality.



Metrology and Quality Control Notes



THE SCOPE OF METROLOGY

Metrology is used in many industries to enforce, validate and verify pre-defined standards. The study of metrology is divided into the following 3 subfields which are used to ensure accuracy, reliability and precision.

- ✓ 'Applied, Technical or Industrial Metrology' establishes the importance of measurement and the maintenance, quality control, and calibration of instruments.
- ✓ 'Legal Metrology' refers to the regulation requirements of measusement and measuring instruments so that consumers are protected and fair trade is observed.
- ✓ 'Scientific Metrology' establishes common understanding of measurements and units. It is therefore vital for being able to achieve high levels of accuracy and reliability, particularly for precision engineers.

PRE-REQUISITES

Understand and design basic mechanical concepts and reverse engineering .

ELIGIBILITY

B.Tech – Mechanical students shall be eligible for the admission to the course.

COURSE DURATION: 45 Hours

Timing : 10.00 a.m - 4.00 pm

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METROLOGY AND QUALITY CONTROL

OBJECTIVES

- To understand the concept of metrology and principles of measuring instruments
- To understand the concept of different types of comparative measurements
- To gain the knowledge about calibration technique in measuring instruments
- To impart knowledge on quality control and control charts • To impart the knowledge on control charts for variables

UNIT - I BASICS OF METROLOGY 9

Definition of metrology - Objective of metrology - Precision and Accuracy - Sources of errors - Concept of Repeatability, Sensitivity, Readability and Reliability – Linear measurements – types – Vernier caliper Micrometer – types – Vernier height gauges – depth gauges – Slip gauges – Angular measurements – Types - Vernier and optical Bevel protractor - Sine Principle and Sine Bar - Optical Instruments for angular measurement – Autocollimator - Angle Gauge.

UNIT–II COMPARATIVEMEASUREMENT 9

Comparators – Introduction – Characteristics and uses – types – mechanical – Optical – profile projector – Electrical – pneumatic – Testing of straightness – Flatness – parallelism and circularity- Limit gauges – types- Taylors principle - Snap gauges – plain plug gauges – progressive plug gauges - Ring gauges – Thread pitch gauges - feeler gauges – radius gauges – engineers square and parallel – dial gauges – types – plunger type – needle type – Magnetic V block.

UNIT - III CALIBRATION AND MEASURING MACHINES 9

Introduction – sensitivity – Range – standards – Traceability - Calibration of Vernier caliper – Micrometer – Dial gauges – Measurement using surface roughness tester – Co-ordinate measuring machine – Types - Tool makers microscope - Gear measurement – Gear tooth caliper – Circular pitch measuring machine.

UNIT - IV QUALITY CONTROL FOR VARIABLES 9

Introduction, definition of quality – Facts of quality - basic concept of quality, definition of SQC, benefits and limitation of SQC, Quality assurance - Concepts of Quality control - Quality cost- Variation in process- factors – process capability – process capability studies and simple problems.

UNIT - V PROCESS CONTROL FOR ATTRIBUTES 9

Control chart for proportion or fraction defectives – p chart and np chart – control chart for defects – C and U charts, State of control and process out of control identification in charts – Acceptance sampling plan – Types - O.C. curves – producer's Risk and consumer's Risk. AQL, LTPD, AOQL concepts-standard sampling plans for AQL and LTPD- uses of standard sampling plans.

TOTAL HOURS: 45

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COURSE OUTCOMES

1. Understand the basics of metrology and linear and angular measuring instruments
2. Explain the working principles of comparators and limit gauges
3. Determine the status of the measuring instruments and different parameters using measuring machines
4. Understand the concepts of quality and to Solve the problems in process control charts for variables
5. Solve the problems in process control charts for attributes

TEXT BOOK

1. R.K.JAIN, Engineering Metrology, Khanna publishers, 21st edition, 1984
2. GRANT, EUGENE.L "Statistical Quality Control", Tata McGraw-Hill, 7th edition, 2005

REFERENCES

1. MONOHAR MAHAJAN, "Statistical Quality Control", Dhanpat Rai & Sons, 2001.
2. R.C.GUPTA, "Statistical Quality control", Khanna Publishers, 9th edition, 1998.
3. BESTERFIELD D.H., "Quality Control", Prentice Hall, 7th edition, 2003.
4. SHARMA S.C., "Inspection Quality Control and Reliability", Khanna Publishers, 2002.

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SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL ENGINEERING

CIRCULAR

PRIST /MECH/CIRC/ 2022-2023 /VALUE-ADDED COURSES/03 01.08.2022

It is informed that the VALUE-ADDED COURSES will be conduct from 13.08.2022 to 08.10.2022.

I) CERTIFICATE COURSES

- PIPING TECHNOLOGY

Venue : Lecture hall 2.

Timing : 10.00 A.M to 4.00 P.M

Duration: 45 hrs

Students from mechanical department those who are interest can enroll their names and course to the HOD on or before 05.08.2022

HOD

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ABOUT THE INSTITUTION

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ABOUT THE DEPARTMENT

The department of Mechanical Engineering came into existence in 2000 with an objective to impart quality education to meet today's competitive environment.

Department has well experienced and dedicated faculty with strong commitment to provide a vibrant learning environment to the students in order to help them excel.

To keep pace with the current technological trends, the department has a well designed, constantly reviewed syllabus to incorporate all advancements in existing and emerging technologies which gives the students a holistic and pragmatic view of the present scenario of industry.

INFORMATION BROUCHER VALUE ADDED COURSE- PIPING TECHNOLOGY

COURSE HIGHLIGHTS

- Piping system designers that may decide to use expansion joints
- Expansion joint designers that use the information provided by piping system designers.
- To determine the best design to meet the requirements.
- Designers that use modern software systems to evaluate different options.
- Engineers / Managers: field, maintenance, process, operations, construction, surveyors.

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About the Program

The objective of this course is to provide the candidates the Detail knowledge and skills in Piping Design discipline to facilitate faster learning curves while on the job.

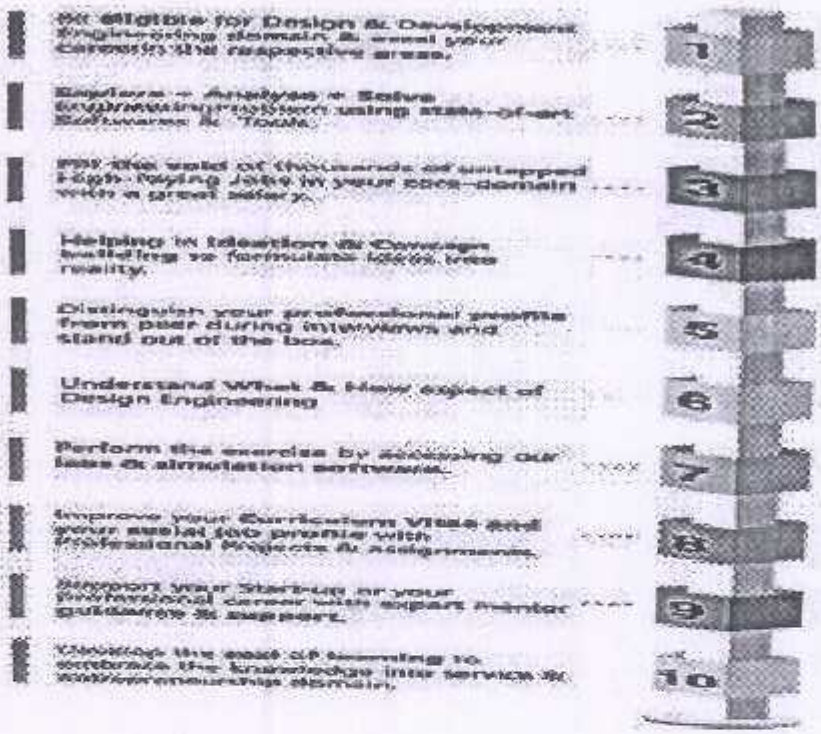
This course will cover the fundamental principles and concepts used in Process Plant Layout and Piping Design Engineering. Upon completion of this course, students will have a clear understanding of the design and principles used in Piping Design System for Oil & Gas Energy Sector.

Learning-Based Outcomes

Get hands-on experience in applying design tools & techniques to real engineering problems and understand Design, Engineering, Construction, O & M, etc. Thus, become a Technology Driven Engineering Professional.

Trainer

Delivered by Senior Industry Professionals having extensive experience in Design & Engineering in diverse domains & industries. These practitioners are also Empanelled as subject matter experts with SmartBrains Engineers & Technologist Pvt. Ltd.



PRE-REQUISITES

Understand and design basic mechanical concepts and reverse engineering.

ELIGIBILITY

B.Tech – Mechanical students shall be eligible for the admission to the course.

COURSE DURATION: 45 Hours
Timing : 10.00 a.m - 4.00 pm

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PIPING TECHNOLOGY

OBJECTIVE:

This class covers the following topics: piping design, the effects on overall configuration on preliminary piping design, initial layout, the total system, introduction to pipe stress analysis, detailed piping design, and how all of this influences pipe support and pipe hanger design.

Syllabus

Part 1: Introduction - Overview of Piping

1. This section serves as an introductory overview of piping system design.
   a. Effects of operating conditions, including flow rate, design pressure and temperature on piping design
   b. Impact of internal and external forces on the design.
   c. Influences that the different modes of failure and the applicable codes have on the entire system.
   d. Piping layout, an overview of the general support classifications.

Part 2: Preliminary Piping Design - Piping System Components

1. Concepts used in developing an initial piping layout.
2. Design principles including fluid properties, flow rate, and physical laws which influence the complete piping system layout.
3. Understand the effect of different piping system components, such as tanks, vessels, valves, and pumps, on the overall configuration.

Part 3: Preliminary Piping Design - The Total System

1. The total piping system.
2. The different types of equipment and components that define various types of piping systems.
3. Differences between series piping, parallel piping and branch piping as well as their specialized applications.
4. The piping system conditions such as static and dynamic head loss
5. Influences on the selection and distribution of piping components throughout the entire system.

Part 4: Basic Concepts of Stress Analysis - Flexibility Analysis

1. Historical perspective of how earlier analysis techniques were developed in the absence of today' computer technology.
2. Review how earlier techniques have evolved ultimately leading to today's finite element practices.
3. The basic concepts of stress analysis will be covered, including failure theories, stress intensification factors and the overall purpose of stress analysis.

Part 5: Basic Concepts of Stress Analysis - Design Bases

1. A review of the different phases of project evolution.
2. The design bases which form the foundation of all our analyses, including physical attributes.

TOTAL : 45 PERIODS

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OUTCOMES:

1. A general overview of piping engineering
2. An awareness of the processes and issues involved with designing, procurement and construction
3. An awareness of the materials and equipment used
4. An understanding of industry terms and acronyms
5. An understanding the stress analysis.

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SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL ENGINEERING

CIRCULAR

PRIST /MECH/CIRC/ 2022-2023 /VALUE-ADDED COURSES/04 27.09.2022

It is informed that the VALUE-ADDED COURSES will be conduct from 15.10.2022 to 19.12.2022.

I) CERTIFICATE COURSES

- **QUALITY ASSURANCE, SIX SIGMA AND LEAN MANUFACTURING**

Venue : Lecture hall 2.

Timing : 10.00 A.M to 4.00 P.M

Duration: 45 hrs

Students from mechanical department those who are interest can enroll their names and course to the HOD on or before 06.10.2022

HOD

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INFORMATION BROUCHER VALUE ADDED COURSE- QUALITY ASSURANCE ,SIX SIGMA AND LEAN MANUFACTURING

COURSE HIGHLIGHTS

- Training content are based on latest Six Sigma
- Earn 16 Hours PDU (Training) Certificate
- Training & Exam Fee Course ware Mock Tests and more.
- Best Certified Instructors with decades of experience in subject matter.
- Complimentary 180 Days of High Quality E-Learning Access
- Premium Access to Six Sigma resources and Six Sigma Job Portal.

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COURSE OBJECTIVES

- Skill to predict, prevent and control defects in a process.
- Understanding the elements of waste.
- Skills to achieve sustainable quality improvement through process improvement.
- Understanding of variation in processes.
- Skills to reduce variation in processes and achieve predicted outcomes.
- Ability to identify, measure and analyse process potential.
- Usage of inferential statistics.
- Usage of hypothesis testing.

PRE-REQUISITES

Understand and design basic mechanical concepts and reverse engineering.

ELIGIBILITY

B.Tech – Mechanical students shall be eligible for the admission to the course.

COURSE DURATION: 45 Hours

Timing : 10.00 a.m – 4.00 pm

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QUALITY ASSURANCE , SIX SIGMA AND LEAN MANUFACTURING

OBJECTIVES:

* To impart knowledge to enable the students to design and implement Statistical Process Control in any industry

UNIT I QUALITY FUNDAMENTALS 9

Importance of quality- evolution of quality- definitions of quality- dimensions of quality- quality control- quality assurance- areas of quality- quality planning- quality objectives and policiesquality costs- economics of quality- quality loss function- quality Vs productivity- Quality Vs reliability.

UNIT II SIX SIGMA METHODOLOGY– TOOLS & TECHNIQUES 9

Cost of Quality – Conformance and Non-Conformance cost – 7 Basic Quality Control Tools – Seven Management tools – FMEA

Need for Six Sigma – Six Sigma Teams – DMAIC Methodology: Define, Measure, Analyse, Improve and Control – Lean Six Sigma

UNIT III EVOLUTION & OVERVIEW OF LEAN MANUFACTURING 9

Evolution of Mass production – Traditional vs. Mass production – Evolution of Toyota (Lean) Production System – Business Dynamics of Lean production – Principles of Lean production: Value, Value stream, Flow, Pull, Perfection.

UNIT IV LEAN MANUFACTURING – TOOLS & TECHNIQUES 9

Ms: Muda, Mura, Muri – 7 Wastes in Manufacturing – Lean Tools to eliminate Muda – 5S – Standardised work – TPM – SMED – Jidoka – Poka Yoke – JIT – Heijunka – Kanban – One piece production.

UNIT V VALUE STREAM MAPPING 9

Need for Value Stream mapping – Steps involved in Value stream mapping – Choose value stream – PQ and PR analysis – Current State map – Lean Metrics – Future State Map – Kaizen plans – Lean implementation – Cultural change – Lean in the Supply chain.

TOTAL: 45 PERIODS

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OUTCOMES:

- Control the quality of processes using control charts for variables in manufacturing indusuries.
- The students should apply the various tools, techniques and methodology of lean manufacturing.
- six sigma concepts to the potential quality gaps in manufacturing / production industries.
- Able to learn concept of tool and technique.
- Lean the Supply chain concept.

REFERENCES:

1. Pascal Dennis, "Lean Production Simplified: A plain Language Guide to the World's Most Powerful Production System", Productivity Press, 2007.
2. Issa Bass and Barbara Lawton, "Lean Six Sigma using Sigma XL and Minitab", Tata McGraw Hill, 2010.
3. Yasuhiro Monden, "Toyota Production System: An Integrated Approach to Just-in-Time", CRC Press, 2012.

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SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

CIRCULAR

It is informed that the department of AIDS is planning to organized a certified course on Web Development on 02.03.2022 for the academic year 2020-2021.

Students from 1 year to 3rd/Diploma and Data Science class who are interested can enroll their names and courses to the HOD on or before 22.10.2022.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

ACADEMIC YEAR 2022-23

Ref:PREC/ECE/2022-23/ODD/08 Date: 01.07.2022

CIRCULAR

It is hereby informed that the Department is offering Add on course for the students. The following courses were offered and their corresponding co-ordinators are also mentioned. The interested students are intimated to register for the same. The classes commences on 04.07.2022, detailed schedule is also provided. The registered students are informed to attend the class without fail.

- Certificate Course onINTRODUCTION TO MICROCONTROLLER
- Certificate Course on INTRODUCTION TO R PROGRAMMING
- Certificate Course on INTRODUCTION TO LABVIEW
- Certificate Course on MOBILE PHONE TECHNOLOGY
- Certificate Course on PCB DESIGN
- Certificate Course on INTRODUCTION TO SCI LAB PROGRAMMING
- Certificate Course on PLC AND SCADA

HOD

Head Of the Department
Department Of Electronics and Communication Engineering
Ponnaiyah Ramajayam Institute of Science & Technology (PRIST)

DEAN

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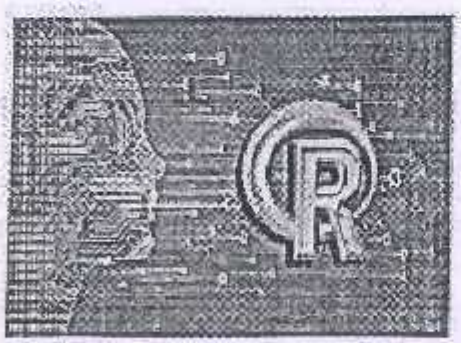
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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

ON

INTRODUCTION TO R PROGRAMMING



ABOUT THE INSTITUTION

Ponnaiyah Ramajayam Institute of Science and Technology (PRIST), a Deemed University (U/s 3 of the UGC Act 1956), is one of the renowned units of Ponnaiyah Ramajayam Institutions, which are serving for more than 25 years in promoting quality education and research for our Indian community, since its inception. The institution is now brimming with many social responsibilities, particularly in promoting quality education through research.

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The department of Electronics and Communication Engineering came into existence in 2008 with an objective to impart quality education to meet today's competitive environment.

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ABOUT THE COURSE

Introduction to R Programming

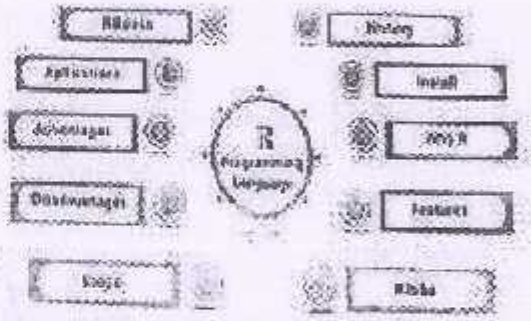
R is an integrated suite of software facilities for data manipulation, calculation and graphical display. Among other things it has

- an effective data handling and storage facility,
- a suite of operators for calculations on arrays, in particular matrices,
- a large, coherent, integrated collection of intermediate tools for data analysis,
- graphical facilities for data analysis and display either directly at the computer or on hardcopy, and
- a well-developed, simple and effective programming language (called 'S') which includes conditionals, loops, user defined recursive functions and input and output facilities.

The term "environment" is intended to characterize it as a fully planned and coherent system, rather than an incremental accretion of very specific and inflexible tools, as is frequently the case with other data analysis software. R is very much a vehicle for newly developing methods of interactive data analysis. It has developed rapidly, and has been extended by a large collection of packages. However, most programs written in R are essentially ephemeral, written for a single piece of data analysis.

COURSE OBJECTIVE

- Understand the different data types in R
- Understand the different data structures in R
- Understand how to create and manipulate datas in R



HOD/ECE

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R programming Syllabus

Module – 1

Introduction and preliminaries, organize scientific and technical data

- The R environment
- R and the window system
- R commands, case sensitivity, etc
- Executing commands from or diverting output to a file
- Data permanency and removing objects

Module – 2

Simple manipulations; numbers and vectors FIR algorithms

- Vectors and assignment
- Vector arithmetic
- Generating regular sequences
- Logical vectors
- Character vectors
- Index vectors; selecting and modifying subsets of a data set

Module – 3

Arrays and matrices Intrinsic attributes: mode and length

- Array indexing. Subsections of an array
- The array() function
- Generalized transpose of an array
- Matrix facilities
- Forming partitioned matrices, cbind() and rbind()
- The concatenation function, c(), with arrays
- Frequency tables from factors

Module – 4

Lists and data frames

- Constructing and modifying lists
- Data frames
- The read.table() function
- The scan() function
- Accessing built-in datasets
- Editing data

Module – 5

Grouping, loops and conditional execution

- Grouped expressions
- Named arguments and defaults
- Assignments within functions
- Analysis of variance and model comparison
- Generalized linear models
- The glm() function
- Some non-standard models

COURSE OUTCOME

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

1. Do statistical analysis and data visualization
2. Analyze the results of experiments
3. Crunch the data gathered in pre-clinical trials

Software Used: R 4.3.1

Course Duration: 45 Hours:

Eligibility: II year ECE and EEE students

HOD(ECE)

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PONNAIYAH RAMAJAYAM INSTITUTE OF SCIENCE & TECHNOLOGY (PRIST)

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

ON

INTRODUCTION TO LABVIEW

ABOUT THE INSTITUTION

Ponnaiyah Ramajayam Institute of Science and Technology (PRIST), a Deemed University (U/s 3 of the UGC Act, 1956), is one of the renowned units of Ponnaiyah Ramajayam Institutions, which are serving for more than 25 years in promoting quality education and research for our Indian community, since its Inception. The institution is now brimming with many social responsibilities, particularly in promoting quality education through research.

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Introduction to LabView

LabVIEW is a graphical programming environment software that is optimized for engineers and scientists. Developed by National Instruments, this software uses a visual approach to programming and is a great program for beginner programmers. You can create visual charts like data flow charts and connect hardware created by NI and other vendors. The programming environment software is available for Apple Mac, Unix, and Microsoft Windows PC 32-bit and 64-bit operating systems. MATLAB is another programming environment that is similar to LabVIEW. MATLAB is geared toward numbers whereas LabVIEW focuses on visualizations. While MATLAB computes and processes data, LabVIEW gathers and tests information. Simulink is another interactive app that is created by MathWorks, the same developers of MATLAB. The Simulink user experience is more comparable to LabVIEW since diagrams are used in both applications.

LabVIEW

COURSE OBJECTIVE

1. Use LabVIEW to create data acquisition, analysis and display operations
2. Create user interfaces with charts, graph and buttons
3. Use the programming structures and data types that exist in LabVIEW
4. Use various editing and debugging techniques

Lab View Syllabus

Module – 1

Lab View over MATLAB

- Organize scientific and technical data
- Populate the data into flow charts
- Illustrative charts
- Control instruments and virtual instruments
- Hardware integration

Module – 2

Algorithms and languages used

- PID algorithms
- Addcot algorithms
- Graphical programming language called G
- Custom user interfaces
- Connector and Icon Panel

Module – 3

Navigating Labview

- Menus and tools
- Creating and using labview projects
- Labview front panel and block diagram
- Searching for controls, vis, and functions

Module – 4

Troubleshooting and Debugging

- Build a simple labview application With Development
- Various debugging and error-checking techniques in labview
- Problems with block diagram organization
- Problems with data passing within a block diagram

(HOD ECE)

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Module – 5

Familiarizing Labview

- Using loops
- Creating and Leveraging Structures
- Modularity (Subvis)
- Acquiring measurements with hardware
- Basic concept of file I/O
- To access and modify file resources
- Using sequential and state machine programming

COURSE OUTCOME

At the end of the course, students will be able to

- Explore the LabVIEW environment
- Do interactive analysis, dataflow programming
- Develop data acquisition, instrument control, data-logging
- Create applications using the state machine design pattern
- Acquire, analyze, process, visualize, and store real-world data

Eligibility: ECE & III YEAR B.Sc Physics students are eligible to attend the course.

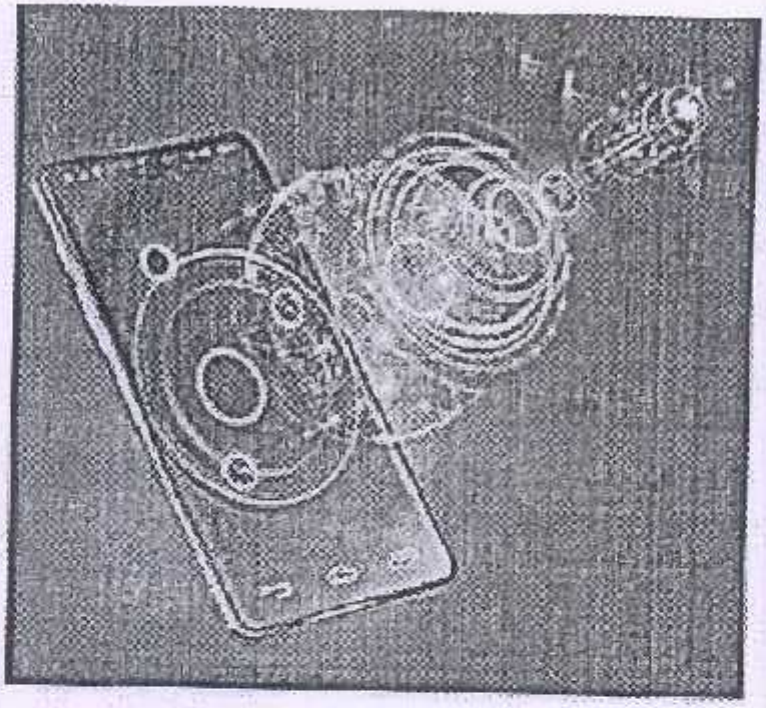
Software Used: LABVIEW

Course Duration: 45 Hours:

CHOD (ECE)

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MOBILE PHONE TECHNOLOGY

MOBILE APPLICATION

Banking (check balance, make transaction)
Restaurant (order and payment)
Mobile Payment (bill, ticket, vending machine)
Tourism (tourist guide)
Education (mobile learning)
Location (mobile learning, location dependent)
Scientific (controlling and monitoring)

SOURCES OF MOBILE PHONE

Mobile phone metadata may contain significant information related to the network infrastructure, mobile phone usage, and services. It does not contain contents of calls, text messages, and mail.

OPERATING SYSTEM (OS)

The Operating System (OS) is the program that manages all the application in a computer and is often considered the most important software in order for a computer to run. Applications make requests to the OS through an application programming interface (API) and users are able to interact with the OS through command line or graphical user interface, commonly through a keyboard and mouse or by touch.

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ABOUT THE COURSE

In the highly competitive electronics industry, the knowledge and skills of students directly responsible for schematic capture and design documentation can have a direct impact on successful design implementation and time to market.

PCB (Printed Circuit Board) designing is an integral part of each Electronics products and should known to each electronics engineering students and who are working in electronics industry

PCB Design training course helps all the engineering students to design and develop an electronics prototype accurately. A high-quality PCB eliminates the risk of loose solder joints

This program is designed to make students and professionals capable of designing PCB up to Industrial grade.

After the completion of Training, Students will be able to design and print their own PCB (Printed Circuit Board).

COURSE OBJECTIVES



- Understanding of Electronics Project Design Flow
- Knowledge of Schematic Design techniques
- Knowledge of PCB Design techniques
- Personal Experience of working with PCB

Pre-requisites

Knowledge of Electronics Components

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COURSE CONTENT –PCB FUNDAMENTALS SCHEMATIC CAPTURE

Module 1 – Introduction to PCB Design

Program overview outlining class schedule and options for accessing class material and assignments. An overview of the fundamentals of PCB Design and review of passive components. Lecture 1 will focus on passive components and basic electrical engineering equations.

Module 2 – Component Library Concepts

Creation of library components, including schematic symbol and PCB footprint generation, component parameters, and simulation models.

Module 3 – Basic Schematic Concepts

Proper structure and layout of a good schematic.
Key concepts include:

- Page sequencing
- Symbol placement
- Net naming
- Power / ground symbols
- IPC standards

Module 4 – Advanced Schematic Concepts

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- Port / off-sheet connections
- Circuit reuse
- Design hierarchy
- Circuit simulation
- Net classes
- Design rules
- Multi-channel design
- Differential nets
- Busses / wire harnesses

Module 5 – Schematic Documentation

Proper documentation of schematics and review application of IPC-26xx standards

Key concepts include:

- Use of standard title blocks
- Standard page sequencing
- Readability
- Standard notes
- ECO and revision history
- Annotation methodology
- Design rules
- Parts lists

SOFTWARE USED : ORCAD SOFTWARE

ELIGIBILITY : ECE & EEE students shall be eligible for the admission to the course.

COURSE DURATION: 45 Hours

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PCB DESIGN

Course Outcomes

Upon the completion of this course, students will demonstrate the ability to:

1 Understand basics of PCB designing.
2 Apply advance techniques, skills and modern tools for designing and fabrication of PCBs.
3 Apply the knowledge and techniques to fabricate Multilayer, SMT and HDI PCB.
4 Understand concepts of Packaging.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

ACADEMIC YEAR 2022-2023 ODD SEMESTER

COURSE CONTENT –INTRODUCTION TO SCILAB PROGRAMMING

COURSE OBJECTIVES

1.Numerical Analysis Data visualization Algorithm development Application development.

2.Model Customization & Modelica blocks creation Model building & edition Simulation Standard Palettes & Blocks.

3.It can be used for signal processing, statistical analysis, image enhancement, fluid dynamics simulations, numerical optimization, and modeling, simulation of explicit and implicit dynamical systems and (if the corresponding toolbox is installed) symbolic manipulations.

COURSE CONTENT

Module-1-A Learning fundamentals of Sci lab

Scilab is an interpreted language, which implies that there is no need to declare a variable before using it. Variables are created at the moment where they are first set. In the following example, we create and set the real variable x to 1 and perform a multiplication on this variable.

Module-2-SIGNAL PROCESSING WITH SCILAB

Signal processing involves converting or transforming data in a way that allows us to see things in it that are not possible via direct observation. Signal processing allows engineers and scientists to analyze, optimize, and correct signals, including scientific data, audio streams, images, and video.Further features:Data windowing.Power spectral density estimation. Digital FIR and IIR filter design. Analog filter design.Signal transforms including fftw

Module-3-IMAGE PROCESSING USING SCILAB

SIP is a toolbox for processing images in Scilab. SIP is meant to be a free, complete, and useful image toolbox for Scilab. Its goals include tasks such as filtering, blurring, edge detection, thresholding, histogram manipulation, segmentation, mathematical morphology, and color image processing.

Module-4-PRATICAL EXAMPLES ON IMAGE &SIGNAL PROCESSING WITH SCILAB

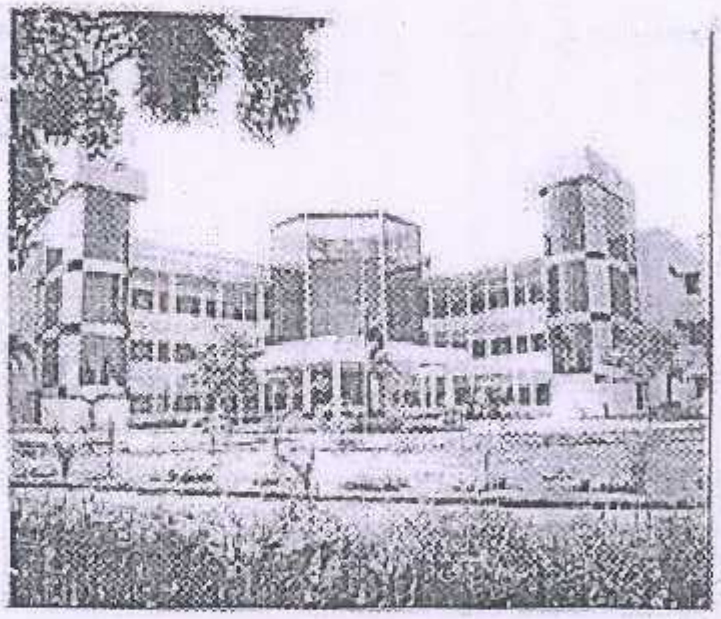
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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INFORMATION BROCHURE

ADD ON COURSE and SCI LAB PROGRAM

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Scilab

Introduction to SciLab

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ABOUT THE COURSE

Scilab is an open source, cross-platform numerical computational package and a high-level, numerically oriented programming language. As the syntax of Scilab is similar to MATLAB(R), Scilab includes a source code translator for assisting the conversion of code from MATLAB(R) to Scilab. Scilab is available free of cost under an open source license and is one of several open source alternatives to MATLAB(R). Scilab has been widely exploited for different applications in signal processing, statistical analysis, image processing, fluid dynamics simulations, numerical optimization, and modeling, simulation of explicit and implicit dynamical systems and symbolic manipulations. The Course is intended to provide basic understanding about the Scilab platform and to exploit its integration in the field of signal and image processingScilab is an open source, cross-platform numerical computational package and a high-level, numerically oriented programming language. As the syntax of Scilab is similar to MATLAB(R), Scilab includes a source code translator for assisting the conversion of code from MATLAB(R) to Scilab. Scilab is available free of cost under an open source license and is one of several open source alternatives to MATLAB(R). Scilab has been widely exploited for different applications in signal processing, statistical analysis, image processing, fluid dynamics simulations, numerical optimization, and modeling, simulation of explicit and implicit dynamical systems and symbolic manipulations. The workshop is intended to provide basic understanding about the Scilab platform and to exploit its integration in the field of signal and image processing.

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PRE-REQUISITES

Scilab is free and open source software for numerical computation providing a

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powerful computing environment for engineering and scientific applications. Scilab is released as open source under the GPL License, and is available for download free of charge.

COURSE CONTENT

Module-1-A Learning fundamentals of Sci lab

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Module-5-INTERFACING MATLAB® AND SCILAB

Scilab is one of the two major open-source alternatives to MATLAB, the other one being GNU Octave. Scilab puts less emphasis on syntactic compatibility with MATLAB than Octave does, but it is similar enough that some authors suggest that it is easy to transfer skills between the two systems.

SOFTWARE TOOL USED:

Scilab.Xcos. Model Customization & Modelica blocks creation Model building & edition Simulation Standard Palettes & Blocks.

Atoms.

ELIGIBILITY

ECE students shall be eligible for the admission to the course.

COURSE DURATION: 45 Hours

Monday:	4.00-5.30 P.M
Wednesday:	4.00-5.30P.M
Friday:	4.00-5.30 P.M

LEARNING OUTCOMES:

Scilab environment and programming language.
Use decision making control statements like if , if else and loops (for, while) to develop programs.
Use data structures like list , struct and cell arrays available in scilab to manage and work with

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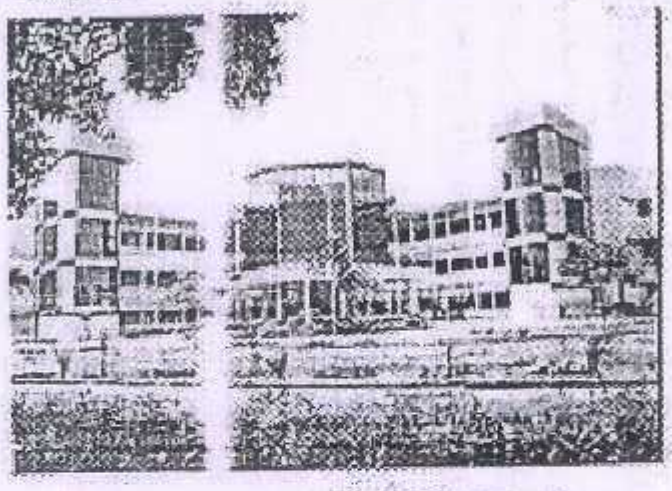
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The Department has state-of-the-art laboratories, such as VLSI lab, Digital Image Processing Lab, Circuit Simulation Lab, Communication Lab, and higher end softwares like MATLAB, PSPICE., Xilinx, IAR,L-Sim & N-Sim.

The Department runs an undergraduate course in B.Tech. - Electronics and Communication Engineering and post graduate programme like M.Tech in Communication Systems. Department also offers part time programmes in Electronics and Communication Engineering and

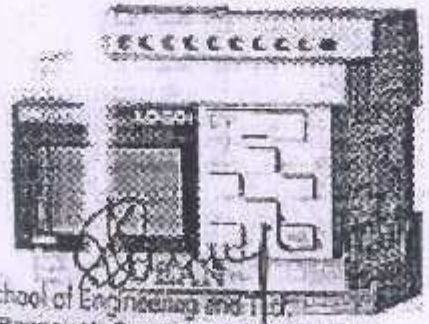
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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

CERTIFICATE COURSE

TRAINING PROGRAMME ON PLC AND SCADA



Dean
School of Engineering and Technology
Ponnaiyah Ramajayam Institute of Science and Technology

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(Institution Deemed to be University-U/s 3 of the UGC Act 1956)
THANJAVUR-613 403, TAMIL NADU

137

373

COURSE OBJECTIVE

The main objective of PLC & SCADA training programme is to make aspiring engineers acquainted with the conceptual and practical knowledge of the industrial automation and latest them with a platform to work on, in make aspiring engineers acquainted with the conceptual and practical knowledge of the industrial automation and latest them with a platform to work on, in the near future.

COURSE OUTCOME

PLC or Programmable Logic Controller is a computing system used to control electromechanical processes.

SCADA stands for supervisory control and data acquisition; it is a type of industrial control system that is used to monitor and control facilities and infrastructure in industries.

The automation is an ever evolving domain, which requires constant innovation and technology advancement in the domain. To instill a love and passion for electronic and automation in the student and provide them with a platform

Head of the Department
Department of Electronics and
Communication Engineering
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Vallam, Thanjavur

COURSE CONTENT

- Introduction to automation.
- Why we need automation?
- Introduction to PLCs.
- PLC fundamentals
- PLC hardware and operation
- PLC programming Basics
- PLC implementation
- PLC advantage over microcontroller
- Hands-on with 2 or more major PLC brands
- Upload, download to PLC
- Modify existing programs
- Sensor introduction and their need.
- HMI introduction and their need.
- Introduction to SCADA.
- Detail study of PLC & SCADA.
- Programming of PLC through SCADA.
- PLCs I/Os basics, burning and interfacing concepts(Ladder logic,RSLogix)
- Downloading a ladder program in PLC using RSLinx.
- Hands on PLC training kit and SCADA software.

PRE-REQUISITES

- Electrical and Electronics basics
- Industrial control

COURSE DURATION : 45 Hrs

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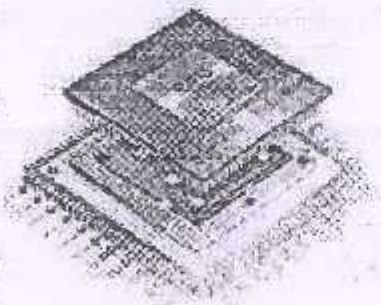
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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

ON

INTRODUCTION TO MICROCONTROLLER



ABOUT THE INSTITUTION

Ponnaiyah Ramajayam Institute of Science and Technology (PRIST), a Deemed University (U/s 3 of the UGC Act 1956), is one of the renowned units of Ponnaiyah Ramajayam Institutions, which are serving for more than 25 years in promoting quality education and research for our Indian community, since its inception. The institution is now brimming with many social responsibilities, particularly in promoting quality education through research.

ABOUT THE DEPARTMENT

The department of Electronics and Communication Engineering came into existence in 2008 with an objective to impart quality education to meet today's competitive environment.

Department has well experienced and dedicated faculty with strong commitment to provide a vibrant learning environment to the students in order to help them excel. To keep pace with the present technological trends, the department has a well designed, constantly reviewed syllabus to incorporate all advancements in existing and emerging technologies which gives the students a holistic and pragmatic view of the present scenario of industry.

The Department runs an undergraduate course in B. Tech - Electronics and Communication Engineering and postgraduate programme like M. Tech in Communication Systems. Department also offers part time programmes in B. Tech - Electronics and Communication Engineering and M. Tech - Communication Systems.

The Department has state-of-the-art laboratories, such as VLSI lab, Digital Image Processing Lab, Circuit Simulation Lab, Communication Lab, and higher end software like MATLAB, PSPICE, Xilinx, IAR, L-Sim & N-Sim.

ABOUT THE COURSE

Introduction to Microcontroller

- A microcontroller is a compact integrated circuit designed to govern a specific operation in an embedded system. A typical microcontroller includes a processor, memory and input/output (I/O) peripherals on a single chip.
- Sometimes referred to as an embedded controller or microcontroller unit (MCU), microcontrollers are found in vehicles, robots, office machines, medical devices, mobile radio transceivers, vending machines and home appliances, among other devices. They are essentially simple miniature personal computers (PCs) designed to control small features of a larger component, without a complex front-end operating system (OS).
- A microcontroller is embedded inside of a system to control a singular function in a device. It does this by interpreting data it receives from its I/O peripherals using its central processor. The temporary information that the microcontroller receives is stored in its data memory, where the processor accesses it and uses instructions stored in its program memory to decipher and apply the incoming data. It then uses its I/O peripherals to communicate and enact the appropriate action.

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(HOD (ECE)

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Ponnaiyah Ramajayam Institute of

COURSE OBJECTIVE

- To introduce students with the architecture and operation of typical microprocessors and microcontrollers.
- To familiarize the students with the programming and interfacing of microprocessors and microcontrollers.
- To provide strong foundation for designing real world applications using microprocessors and microcontrollers.
- To understand the basic concepts of Embedded Systems and working of a general purpose 8- bitmicroprocessor operations.
- Analyze how to access Microcontroller ports

Syllabus

Module – 1
The 8051 Instruction Set

- Program Status Word
- Addressing Modes
- Arithmetic Instructions
- Logical Instructions
- Data Transfers
- External RAM
- Lookup Tables

Module – 2
Common Features Description Vectors and assignment

- 8051 Architecture Block Diagram
- Special Function Registers
- Oscillator and Clock Circuit
- CPU Timing
- Port Structures and Operation

Module – 3
Serial Interface

- Baud Rates
- Baud Rate Selection Table for UART
- Internal Baud Rate Generator (BRG)
- Using Timer 1 to Generate Baud Rates
- Using Timer 2 to Generate Baud Rates
- More About Mode 0

Module – 4
Framing Error Detection

- Automatic Address Recognition
- Multiprocessor Communications
- Broadcast Address
- Reset Addresses

Module – 5
UART Registers & Interrupts

- SCON Register
- T2CON Register
- PCON Register
- SADRCON Register
- How Interrupts Are Handled
- External Interrupts
- Response Time

COURSE OUTCOME

- At the end of the course the student will be able to:
- Be familiar with the composition, design, and implementation
- Be familiar with reading and understanding processor and component datasheets
- Be familiar with working on a team to create and apply microcontroller
- Be familiar with the basics of interfacing hardware and software
- Be exposed to history of embedded interfaces

Processor: Atmel 8051 Microcontrollers

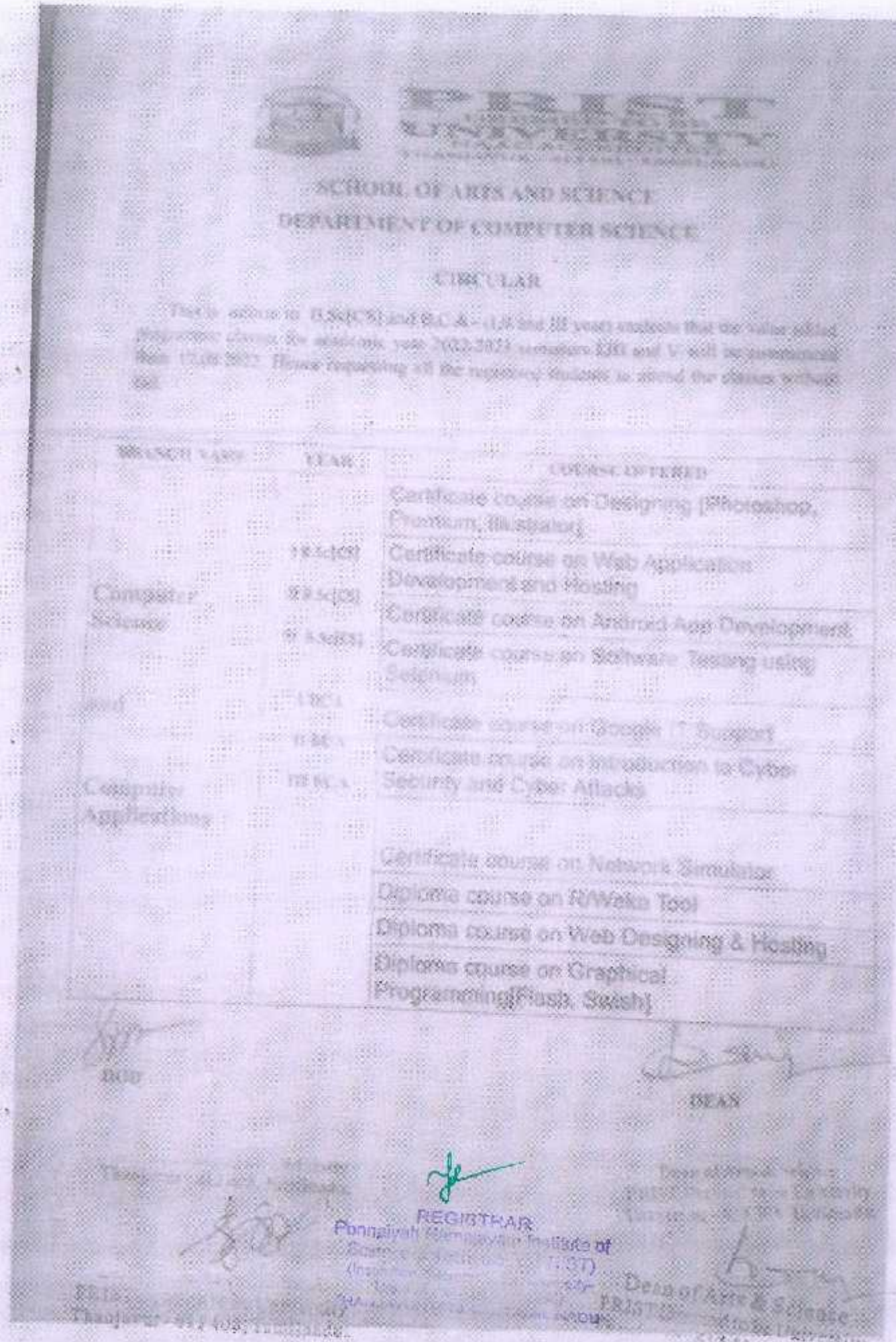
Course Duration: 45 Hours

Eligibility: III year Agriculture students

HOD (ECE)

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SCHOOL OF ARTS AND SCIENCE

DEPARTMENT OF COMPUTER SCIENCE

CIRCULAR

BRANCH/ YEAR	YEAR	COURSE OFFERED
Computer Science	I B.Sc(CS)	Certificate course on Designing [Photoshop, Premium, Illustrator]
	II B.Sc(CS)	Certificate course on Web Application Development and Hosting
	III B.Sc(CS)	Certificate course on Android App Development
	I BCA	Certificate course on Software Testing using Selenium
	II BCA	Certificate course on Google IT Support
Computer Applications	III BCA	Certificate course on Introduction to Cyber Security and Cyber Attacks
		Certificate course on Network Simulator
		Diploma course on R/Weka Tool
		Diploma course on Web Designing & Hosting
		Diploma course on Graphical Programming(Flash, Swish)

HOD

DEAN

REGISTRAR

Ponnaiyah Ramajayam Institute of Science & Technology (Deemed to be University) Thanjavur-613 403, Tamilnadu.

Dean of Arts & Science

PRIST UNIVERSITY

Academic year: 2022-2023

Course: Designing [Photoshop, Premium, Illustrator]

Subject Code: 22CC03

Aims:

To create the image creation, graphic design and photo editing software developed by Adobe.

Objectives:

- Navigate the Photoshop interface.
- Perform basic photo retouching tasks.
- Understand how to work with layers.
- Use Paths and filters.
- Combine two separate images into one.
- Understand image resolution and file output for print and web graphics.

UNIT-I

Getting Started, Photo Retouching, Cropping Photos, Creating Graphics, Creating Paths for Complex Files.

UNIT-II

Beginning Backgrounds, Blend Modes & Opacity, Layer Correction, Using Layer Masks, Advanced Layer Masks, Retouching.

UNIT-III

Working with Selections, Layers, Working with Layer Masks, Working with Channels, Working with Color, Correcting Color and Tone, Sharpening Images, Working with Text, Working with Vector Graphics, Creating Web Graphics, Automating Photoshop.

UNIT-IV

Introduction to Black & White & Lens Correction, Planning Your Design in Photoshop, Working with Layers, Layer Masks, Retouching.

UNIT-V

Working with Selections, Working with a Blending Mode, Creating Masks, Fixing Images with Layer Masks and Channels, Advanced Layer Masks, Creating Web Graphics, Creating Rare Fundamentals, Creative Ruts and Uses.

COURSE OUTCOMES:

Appreciate the importance of visualization in the data analysis solution.

Apply structured thinking to unstructured problems. Understand a very broad collection of machine learning algorithms and problems.

Learn algorithmic topics of machine learning and mathematically deep enough to introduce the required theory. Develop an appreciation for what is involved in learning from data.

REFERENCES:

Adobe Photoshop CS6 on Demand

Adobe Illustrator CS6 Classroom in a Book

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Ponnaiyah Ramajayam Institute of
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Dean of Arts & Science
Ponnaiyah Ramajayam Institute of
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Course: Certificate Course On Web Application Development And Hosting
Subject Code: 22CC22

Aim:

- To learn the basics of web application and development of hosting

Course objective:

- To learn the fundamental concepts of web designing
- To learn fundamental web application using in hosting
- To apply validation techniques on stream data

MODULE-1

Basics of Web Designing
Multimedia and its Applications
Web Technologies
Introduction to Web Design & applications
Computer Graphics

MODULE-2

MODULE-3

Course Outcomes:

- Create real world problems to web accessing in real time
- Perform installation and hosting the packet hosting
- Design efficient rendering of image data and work in deep platforms.

1. Castro, Elizabeth and Hyslop , *HTML5 and CSS: Sixth Edition (Visual QuickStart Guide)*, Peachpit Press, 2013.
2. Duckett, Jon, *HTML5: Multimedia Develop and Design*, Peachpit Press, 2017.

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COURSE: Certificate Course On Android App Development
Subject Code: 12CC03

AIM

OBJECTIVE

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PRIST UNIVERSITY

Course: Certificate Course On Software Testing Using Selenium
Subject Code: 22CC04

Aim:

- To learn the basics of software testing using java environment.

Course objectives:

- To know the fundamental concepts of software testing.
- To learn fundamental testing the application using selenium
- To study various aspect Web/HTML Elements

Module 1: Java Programming for Selenium

1.Java Environment Setup

2.Java Program Structure

Java Program Structure, Java Syntax, Java Keywords & Literals, Java main method, Create Java Variables, Methods, conditions, loops, and IO

3. Java Data Types

Java Data Types, Categories of Data Types in Java, Java Primitive Data Types, Java Non-primitive Data Types, and Data Type Conversion in Java.

4. Java Variables

Java Variables, What is Variable, Types of Variables in Java, Declare Variables, assign values to Variables, and Java Variable Naming Rules.

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KRIST
UNIVERSITY

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U/s 3 of UGC Act, 1956)
THANJAVUR, TAMIL NADU

Course: Certificate Course On Google IT Support
Subject Code: 22CC05

Aim:

- To learn the basics of Google IT Support is all about troubleshooting and problem solving and providing great customer service along the way.

Course objective:

- To know the fundamental concepts of Google IT Support
- To study various services on storage data

Technical Support Fundamentals: Offered by Google. This course is the first of a series that aims to prepare you for a role as an entry-level IT Support Specialist.

The Bits and Bytes of Computer Networking: Offered by Google. This course is designed to provide a full overview of computer networking. We'll cover everything from the

Becoming a Power User: Offered by Google. In this

Managing IT Assets and Data: Offered by Google. This course

COURSE OUTCOMES

- Explain the importance of visualization in the data analytics solution
- Apply structured thinking to unstructured problems Understand a very broad collection of machine learning algorithms and problems
- Learn about the topics of machine learning and mathematically deep enough to introduce the required theory Develop an appreciation for what is involved in learning from data

REFERENCE BOOKS

1. IT Support Handbook: A How To Guide to Providing Effective Help and

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Ponnaiyah Ramajayam Institute of
Science & Technology (PRIST)
(Deemed to be University)

Course: Diploma Course On Web Designing & Hosting
Subject Code: 12201p02

Aim:

To learn the basics of web designing & hosting to increasing sales, generate brand awareness, generating more leads, customer support or supply resources.

Objectives:

COURSE OUTCOMES:

REFERENCE BOOKS:

REGISTRAR
Himalayan International Institute of Science & Technology (HIIST)
Dean of Arts & Science
HIST Deemed to be University

Course: Diploma courses on Graphical Programming[Flash, Swish]
Subject Code: 220IP03

Aim:

To learn the basics of Web Designing & Scripting. To introduce students with mentioned concepts and theory of computer graphics. It presents the important drawing algorithms, polygon fitting, clipping and 2D transformation curves and an introduction to 3D transformation.

Objectives:

Unit-1

Unit-2

Unit-3

Unit-4

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PRIST UNIVERSITY

Course: Certificate Course On Introduction To Cyber Security Tools And Cyber Attacks
Subject Code: 22CC06

Unit:

Syllabus: Overview of Introduction to Cyber Security Tools and Cyber Attacks

Course objective:

- To learn the Fundamental concepts of Introduction to Cyber Security Tools and Cyber Attacks
- To apply various analytics on system data.

UNIT-1

• Introduction to cyber security • Cybercrime and different modes of attacks • Information security system

UNIT-2

• It assets and weakness scanning • Cyber security assessment framework • Database

UNIT-3

UNIT-4

UNIT-5

Course Outcome:

Find and select appropriate data that can be used in order to create a visualization that answers a particular question

Understand how Cultures of Practice influence the way data may be collected, described or presented in order to align their own data management practices with those of their discipline

REFERENCE BOOKS

Introduction to Cyber Warfare A Multidisciplinary Approach By Paulo Shakarian, Jana Shakarian, Andrew Ruef, 2013

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THANJAVUR-613 403, TAMIL NADU

PRIST Deemed to be University
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COURSE: Certificate Course On Network Simulator
SUBJECT CODE: 22CC07

Aim:

To learn the basics of Network Simulator using a network simulator is a software program that can predict the performance of a computer network or a wireless communication network.

Objectives:

- NS2 is a software program that can predict the performance of a computer network or a wireless communication network.

Units:

Simulation of Computer Networks: Computer Networks and the Layering Concept, System Modelling- Basics of Computer Network Simulation- Time-Dependent Simulations - A Simulation Example: A Single-Channel Queuing System.

Unit 2:

Introduction to Network Simulator 2 (NS2)- Installation — Directories and Files — Using NS2- Simulation- A Simulation Example- Including C++ Files and the make Utility.

Unit 3:

Unit 4:

Unit 5:

COURSE OUTCOMES:

1. Develop effective presentation of business analyses, research, and recommendations through written forms of communication with specificity and appropriate to the intended audience.

2. Develop effective presentation of business analyses, research, and recommendations through oral communication of conventions and forms with specificity and appropriate to the intended audience.

REFERENCE BOOKS:

1. Introduction to Network Simulator NS2 By Teerawat Issariyakul, Ekram Hossain 2008
2. How to Write a Perfect Network Simulator - 3 Program (NS - 3)
3. NS - 3 Web Style Manual for All By Ns Manual - 2019

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THANJAVUR - 613 403, Tamil Nadu

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Course: Diploma Course On R, WEKA TOOL
Subject Code: 22DSP01

Aim:

- To learn the basics of data analysis in R, Weka Tool and WEKA as open source software for data preprocessing, implementation of ar

Objectives:

- To acquire the fundamental concepts of data handling and analytics
- To learn fundamental data analysis using R
- To apply various analytics on stream data

MODULE 1

History and overview of R, Install and configuration of R programming environment, R language elements and data structures, R - Color, Mathematical

Data Operations, Clustering, Association, Feature Selection

COURSE OUTCOMES:

- Convert real world problems to hypothesis and perform statistical analysis.
- Perform data analysis using R.
- Design efficient modelling of huge data and work on big data platforms.

REFERENCE BOOKS:

1. Beginning Statistical Programming with R, W Braun
2. Beyond Spreadsheets with R
3. Data Mining Practical Machine Learning Tools and Techniques
4. Programming Collective Intelligence

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Name .....

Programme .....

Discipline .....

Institution's .....

Hostel Ref. .....

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E.Mail(s) .....

Mobile No .....

Permanent Address .....

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Signature of the Applicant

Submission of Application Form

Submit your Application in person to Head-of-Center, School of Arts and Science, PRIST University, Thanjavur, Pincode 613403.

Application may be send to

Chairman/Co-Ordinator

The Head of the Department
Department of Computer Science, PRIST University, Thanjavur
E-mail: [illegible]

Department of Computer Science
School of Arts and Science
Ponnaiyah Ramajayam Institute of Science & Technology (PRIST)
Thanjavur - 613 403, Tamil Nadu.



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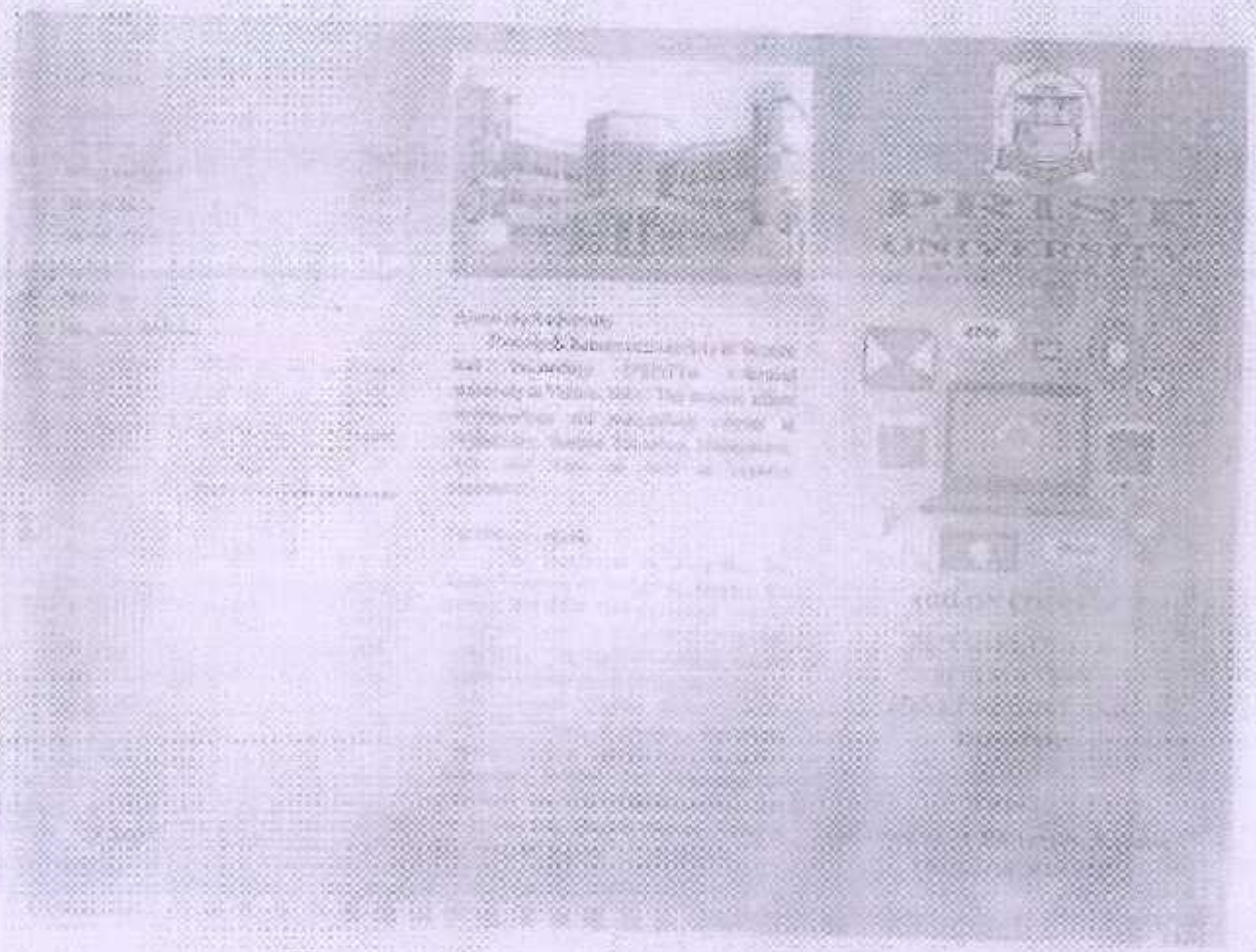
ADD-ON COURSES
Certificate in Designing
Photoshop, Premium, Illustrator

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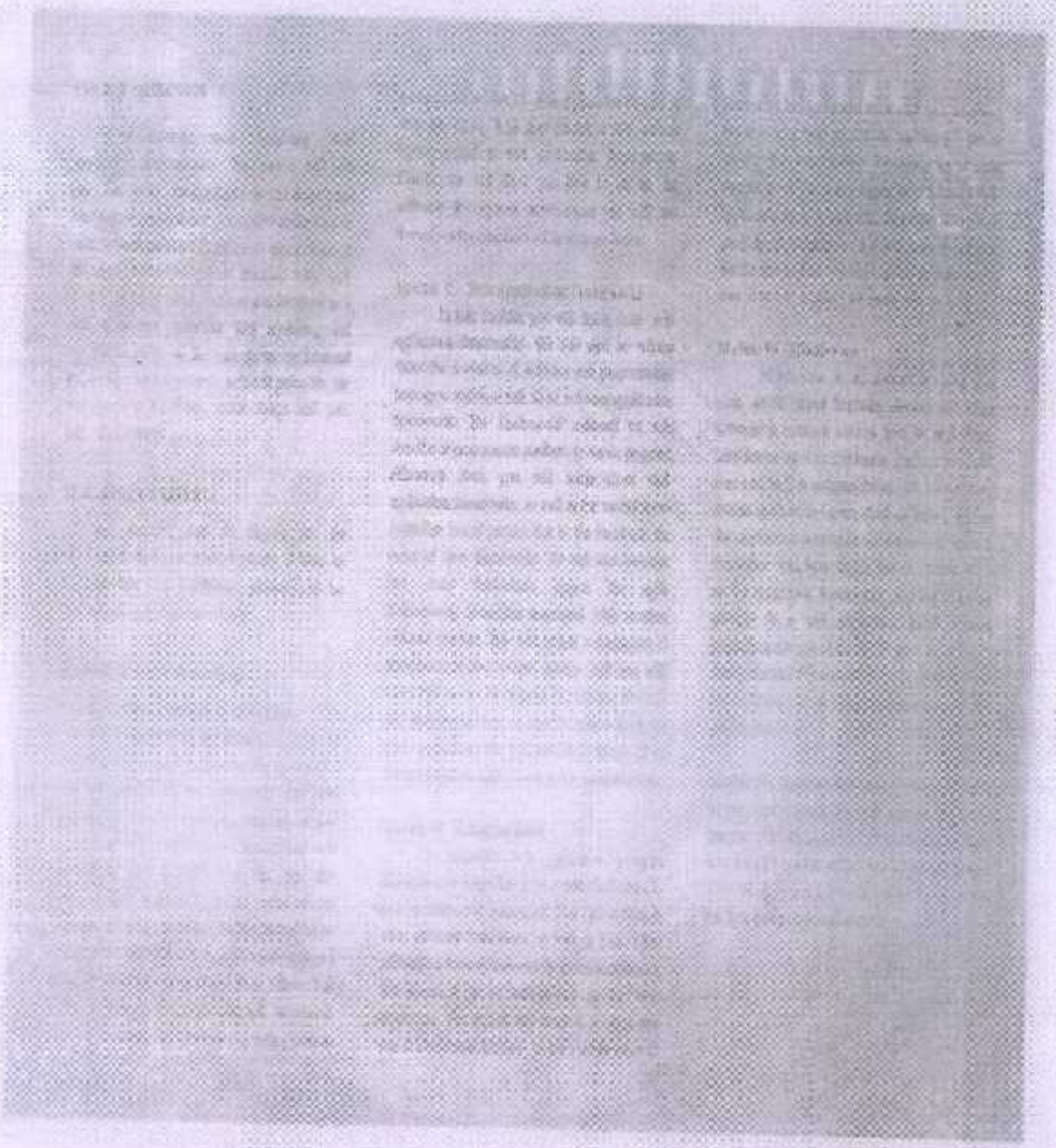
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(Institution Deemed to be University-
U/s 3 of the UGC Act, 1956)
THANJAVUR - 613 403, TAMIL NADU

Signature of the Applicant

Submission of Application Form

Submit your Application form complete in all respects to Co-ordinator, School of Arts and Science, PRIST University, Thanjavur, Vallam-613 403.

Application may be send to

Course Co-Ordinator

The Head of the Department
Department of Computer Science PRIST University, Thanjavur.

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ADD-ON COURSES
Certificate in GOOGLE IT SUPPORT

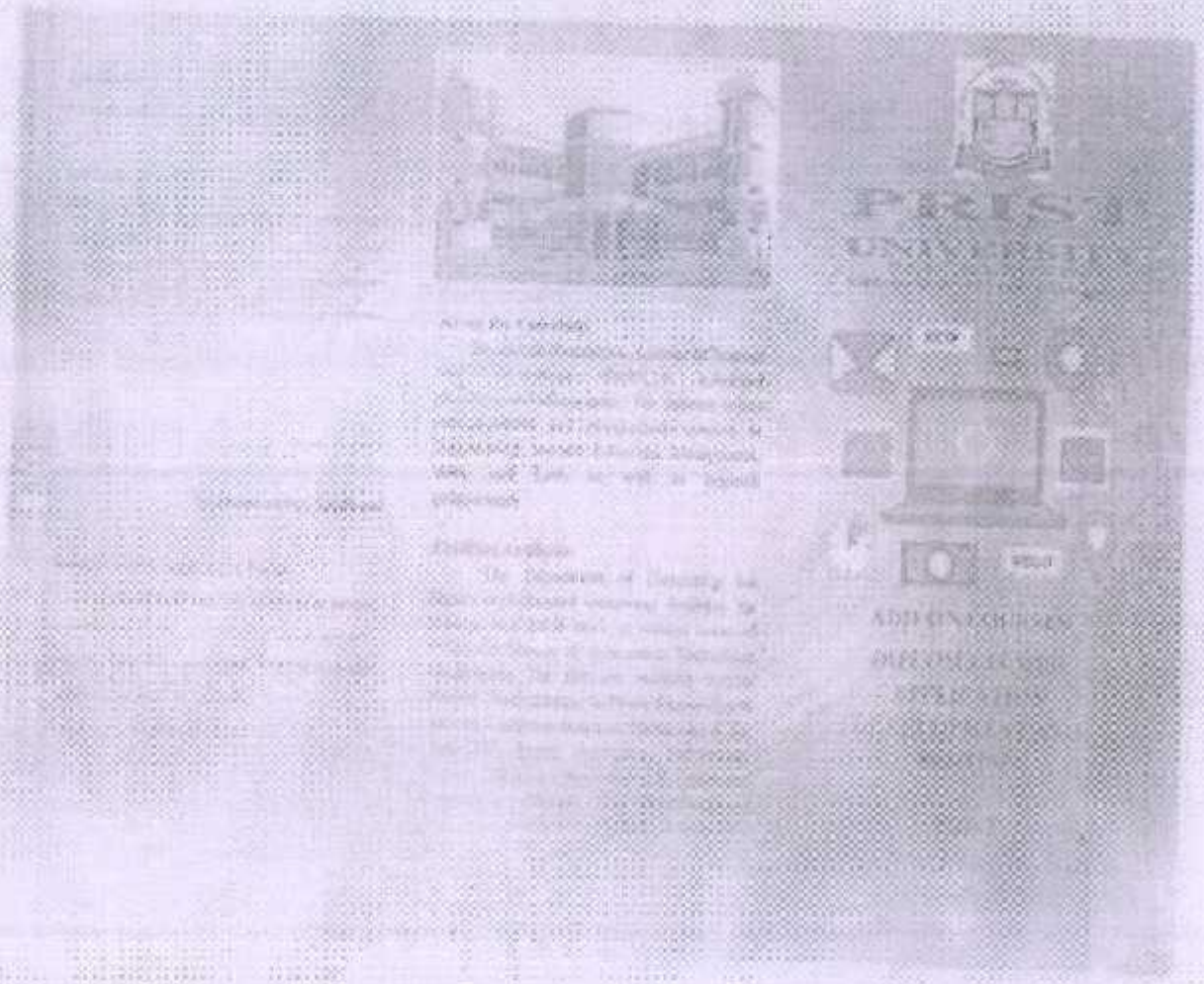
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REGISTRAR





REGISTRAR
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Science & Technology

Dean of Arts & Science



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SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CIRCULAR

SUB: ADD ON COURSE-reg.

It is informed that the department of computer science and engineering is planning to organized a certified course on Digital Marketing on 15.07.22 for the academic year 2022-2023 odd semester. The detailed schedule will be given by the department. Head of the departments are requested to inform their students about the certified course on Digital Marketing and motivate them to attend the course. HOD's are requested to nominate one faculty member to coordinate the same.

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THANJAVUR-613 403, TAMIL NADU

PRIST
DEEMED TO BE
UNIVERSITY
NAAC ACCREDITED
THANJAVUR - 613 403 - TAMIL NADU

From

The HOD,
Department of CSE,
Prist University,
Vallam, Thanjavur.

To:

The DEAN,
Prist University,
Vallam, Thanjavur.

Respected Sir,

Sub:- Requesting Permission for conducting Add on Course - Reg.

I wish to bring to your kind information that the department of computer science and engineering has planned to conduct the following Add On course programme for the academic year 2022-23 odd semester.

As the department is equipped with relevant lab facilities and enterprise in the same field, we are requesting the permission for the conduct of the same.

Duration: 45 Hrs.

Thanking You.

Yours Truly,
HOD/AIDS

REGISTRAR
Ponnaiyah Ramajayam Institute of
Science & Technology (PRIST)
(Institution Deemed to be University u/s 3 of the UGC Act, 1956)
THANJAVUR-613 403, TAMIL NADU.

DIGITAL MARKETING

COURSE OBJECTIVES:

- To understand the difference between Traditional Marketing and digital Marketing
- To understand and analyze the search engine functions
- To develop a deep knowledge about the Digital marketing platforms and the theoreticalaspects of creating a website
- To analyze inbuilt tools for digital Marketing

UNIT I INTRODUCTION TO DIGITAL MARKETING

What is Digital Marketing- Need of Digital Marketing-Digital Marketing Platforms – Understanding digital marketing process- Difference between Traditional Marketing and digital Marketing- tools of Digital marketing - Advantage of Digital Marketing- Digital Marketing Manager Role and functions – How we use both Digital & Traditional Marketing

UNIT II WEBSITE & SEARCH ENGINE

Website –Hosting and Domain– Different platforms for website creation- Introduction to SERP- What are search engines- How search engines work- Major functions of a search engine- What are keywords -Different types of keywords- Google keyword planner tool.

UNIT III MISC TOOLS- GOOGLE WEBMASTER TOOLS

Site Map Creators- Browser-based analysis tools-Page Rank tools-pinging & indexing tools-Dead links identification tools- Open site explorer Domain information/ whois tools- Quick sprout

UNIT IV LEAD MANAGEMENT & DIGITAL MARKETING

Web to lead forms- Web to case forms- Lead generation techniques- Leads are everywhere- Social media and lead gen Inbuilt tools for Digital Marketing-Ip Tracker- CPC reduction (in case of paid ads) Group posting on Social Media platforms.

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UNIT V TRENDING DIGITAL MARKETINGSKILLS

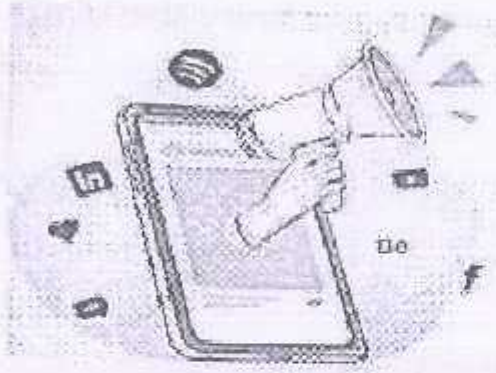
Search Engine Optimization(SEO)-Search Engine Marketing(SEM)-Social Media Marketing/Optimization- Email Marketing Website Product Marketing- Content Writing Marketing the created content online Copywriting- Blogging- Local Marketing, Google Ad Words - Campaign Management- PPC Advertising- Affiliate Marketing, Mobile and SMS Marketing- Marketing Automation-Web Analytics- Growth Hacking

DIGITAL MARKETING

Nowadays, everyone is connected to the internet through their mobile phones and laptop devices. Understanding why **digital marketing** is essential for businesses aiming to succeed online through modern marketing and for individuals looking to make a career in **digital marketing**. Digital **marketing**, or online **marketing**, strategically promotes brands, products, or services using various digital channels and technologies. With the rise of the internet and mobile devices, businesses now have huge opportunities to reach a global audience.

Whether through innovative **search engine marketing (SEM)** strategies or advanced **digital marketing software**, companies can connect with potential customers like never before. Utilizing **search engine optimization (SEO)**, **content marketing**, **social media advertising**, and email **marketing** allows businesses to effectively reach and engage their target audience, driving growth and achieving marketing objectives.

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Panimalar Engineering College
Science & Technology (PIST)
(Institution Deemed to be University)
Under Section 3 of the UGC Act, 1956)
NANDIVARAM - 602 103, Tamil Nadu



What is

DIGITAL MARKETING

Digital marketing is the use of online platforms & digital technologies to promote brands, products, or services.

Types of Digital Marketing

Digital marketing encompasses a wide range of strategies and techniques aimed at promoting products or services through digital channels. Here are the key types of digital marketing:

1. Search Engine Optimization (SEO)

SEO involves optimizing a website to improve its visibility in **search engine results pages (SERPs)**. The goal is to attract organic traffic by using relevant **keywords**, improving site structure, and earning **backlinks**. Effective **SEO** can enhance online visibility and drive long-term traffic.

2. Content Marketing

Content marketing focuses on creating and distributing valuable, relevant content to attract and engage a target audience. This includes blog posts, articles, videos, infographics, and eBooks. The objective is to provide useful information that encourages customer loyalty and drives conversions.

3. Social Media Marketing

Social media marketing involves using platforms like Facebook, Instagram, Twitter, LinkedIn, and TikTok to promote products and engage with customers. This type of marketing can include organic content, **paid advertising**, and influencer partnerships to reach a broader audience and build brand awareness.

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Search Engine Optimization (SEO)

SEO, or **Search Engine Optimization**, is the process of optimizing your website and content to rank higher on search engine results pages (SERPs). It involves keyword research, on-page optimization, and building high-quality backlinks. For example, **Moz**, a leading SEO software company, uses SEO services to improve their visibility for high-volume keywords like "SEO tools" and "search engine optimization strategies."

Content Marketing

Content marketing focuses on creating and distributing valuable, relevant content to attract and engage a target audience. This includes blog posts, videos, infographics, and ebooks. **HubSpot**, a prominent digital marketing **agency**, utilizes a robust **content marketing strategy** by offering free resources such as blogs, ebooks, and webinars to drive traffic and generate leads for their **marketing automation software**.

Social Media Marketing

Social media marketing involves using platforms like Facebook, Instagram, Twitter, and LinkedIn to promote products, engage with customers, and build brand awareness. For example, **Nike effectively uses social media advertising on** Instagram and Twitter to showcase their products, engage with followers, and drive online sales, often targeting their audience with visually compelling ads.

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THANJAVUR - 613 403 - TAMIL NADU

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CIRCULAR

SUB: ADD ON COURSE-Reg.

It is informed that the department of computer science and engineering is planning to organized a certified course on Data Science on 14.09.23 for the academic year 2022-2023 odd semester. The detailed schedule will be given by the departments. Head of the departments are requested to inform their students about the certified course on Data Science and motivate them to attend the course. HOD's are requested to nominate one faculty member to co-ordinate the same.

DEAN

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Pannaiyah Ramaiyaran Institute of
Science & Technology (PRIST)
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U/s 3 of the UGC Act, 1956)
THANJAVUR-613 403, TAMIL NADU.

PRIST
UNIVERSITY

From

The HOD
Department of CSE,
Prist University,
Vallam, Thanjavur

To

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Prist University,
Vallam, Thanjavur

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As the department is equipped with relevant facilities and strength for the same, we are requesting the permission for the conduct of the same.

Thanking You.

Yours faithfully,

REGISTRAR
Pannaiyah Ramajayam Institute of
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DATA SCIENCE

COURSE OUTCOMES:

- To understand the techniques and processes of data science
- To apply descriptive data analytics
- To visualize data for various applications
- To understand inferential data analytics
- To analysis and build predictive models from data

UNIT I INTRODUCTION TO DATA SCIENCE

Need for data science – benefits and uses – facets of data – data science process – setting the research goal – retrieving data – cleansing, integrating, and transforming data – exploratory data analysis – build the models – presenting and building applications.

UNIT II DESCRIPTIVE ANALYTICS

Frequency distributions – Outliers –interpreting distributions – graphs – averages - describing variability – interquartile range – variability for qualitative and ranked data - Normal distributions – z scores –correlation – scatter plots – regression – regression line – least squares regression line – standard error of estimate – interpretation of r^2 – multiple regression equations – regression toward the mean.

UNIT III INFERENTIAL STATISTICS

Populations – samples – random sampling – Sampling distribution- standard error of the mean - Hypothesis testing – z-test – z-test procedure –decision rule – calculations – decisions – interpretations - one-tailed and two-tailed tests – Estimation – point estimate – confidence interval – level of confidence – effect of sample size.

UNIT IV ANALYSIS OF VARIANCE

t-test for one sample – sampling distribution of t – t-test procedure – t-test for two independent samples – p-value – statistical significance – t-test for two related samples. F-test – ANOVA – Two- factor experiments – three &

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tests – two-factor ANOVA – Introduction to chi-square tests.

UNIT V PREDICTIVE ANALYTICS

Linear least squares – implementation – goodness of fit – testing a linear model – weighted resampling. Regression using StatsModels – multiple regression – nonlinear relationships – logistic regression – estimating parameters – Time series analysis – moving averages – missing values – serial correlation – autocorrelation. Introduction to survival analysis

DATA SCIENCE

In a world of data space where organizations deal with petabytes and exabytes of data, the era of Big Data emerged, and the essence of its storage also grew. It was a great challenge and concern for industries for the storage of data until 2010. Now when frameworks like Hadoop and others solved the problem of storage, the focus shifted to the processing of data. Data Science plays a big role here. All those fancy Sci-fi movies you love to watch around can be turned into reality by Data Science. Nowadays its growth has



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been increased in multiple ways and thus one should be ready for our future by learning what it is and how can we add value to it.

Data science is not a one-step process such that you will get to learn it in a short time and call ourselves a Data Scientist. It's passes from many stages and every element is important. One should always follow the proper steps to reach the ladder. Every step has its value and it counts in your model. Buckle up in your seats and get ready to learn about those steps.

1. Problem Statement:

No work start without motivation, Data science is no exception though. It's really important to declare or formulate your problem statement very clearly and precisely. Your whole model and it's working depend on your statement. Many scientist considers this as the main and much important step of Date Science. So make sure what's your problem statement and how well can it add value to business or any other organization.

2. Data Collection:

After defining the problem statement, the next obvious step is to go in search of data that you might require for your model. You must do good research, find all that you need. Data can be in any form i.e unstructured or structured, it might be in various forms like videos, spreadsheets, coded forms, etc. You must collect all these kinds of sources.

3. Data Cleaning:

As you have formulated your motive and also you did collect your data, the next step to do is cleaning. Yes, it is! Data cleaning is the most favorite thing for data scientists to do. Data cleaning is all about the removal of missing, redundant, unnecessary and duplicate data from your collection. There are various tools to do so with the help of programming in either R or Python. It's totally on you to choose one of them. Various scientist have their opinion on which to choose. When it comes to the statistical part, R is preferred over Python, as it has the privilege of more than 12,000 packages. While

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python is used as it is fast, easily accessible and we can perform the same things as we can in R with the help of various packages.

4. Data Analysis and Exploration:

It's one of the prime things in data science to do and time to get inner Holmes out. It's about analyzing the structure of data, finding hidden patterns in them, studying behaviors, visualizing the effects of one variable over others and then concluding. We can explore the data with the help of various graphs formed with the help of libraries using any programming language. In R, GGplot is one of the most famous models while Matplotlib in Python.

5. Data Modelling:

Once you are done with your study that you have formed from data visualization, you must start building a hypothesis model such that it may yield you a good prediction in future. Here, you must choose a good algorithm that best fit to your model. There different kinds of algorithms from regression to classification, SVM(Support vector machines), Clustering, etc. Your model can be of a Machine Learning algorithm. You train your model with the train data and then test it with test data. There are various methods to do so.

6. Optimization and Deployment:

You followed each and every step and hence build a model that you feel is the best fit. But how can you decide how well your model is performing? This where optimization comes. You test your data and find how well it is performing by checking its accuracy. In short, you check the efficiency of the data model and thus try to optimize it for better accurate prediction. Deployment deals with the launch of your model and let the people outside there to benefit from that. You can also obtain feedback from organizations and people to know their need and then to work more on your model.

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THANJAVUR – 613 403 – TAMILNADU

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CIRCULAR

SUB: ADD ON COURSE-Reg.,

It is informed that the department of computer science and engineering is planning to organized a certified course on Ethical Hacking on 08.11.22 for the academic year 2022-2023 odd semester. The detailed schedule will be given by the departments. Head of the departments are requested to inform their students about the certified course on Ethical Hacking and motivate them to attend the course. HOD's are requested to nominate one faculty member to co-ordinate the same.

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THANJAVUR - 613403 - TAMIL NADU

From

The HOD,
Department of CSE,
Prist University,
Vallam, Thanjavur.

To

The DEAN,
Prist University,
Vallam, Thanjavur.

Respected Sir,

Sub:- Requesting Permission for conducting Add on Course – Reg.

I wish to bring to your kind information that the department of computer science and engineering has planned to conduct the following Add On course programme for the academic year 2022-23 odd semester.

As the department is equipped with relevant lab facilities and enterprise in the same field, we are requesting the permission for the conduct of the same.

Duration: 45 Hrs.

Thanking You.

Yours Truly,
HOD/AIDS

DEAN

REGISTRAR
Ponnaiyah Ramajayam Institute of
Science & Technology (PRIST)
(Institution Deemed to be University-
U/s 3 of the UGC Act, 1956)
THANJAVUR-613 403, TAMIL NADU.

What is CEH^{v12}?

The Certified Ethical Hacker has been battle-hardened over the last 20 years, creating hundreds of thousands of Certified Ethical Hackers employed by top companies, militaries, and governments worldwide.In its 12th version, the Certified Ethical Hacker provides comprehensive training, hands-on learning labs, practice cyber ranges for engagement, certification assessments, cyber competitions, and opportunities for continuous learning into one comprehensive program curated through our new learning framework: 1. Learn 2. Certify 3. Engage 4. Compete

The CEHv12 is a specialized and one-of-a-kind training program to teach you everything you need to know about ethical hacking with hands-on training, labs, assessment, a mock engagement (practice), and global hacking competition. Stay on top of the game with the most in-demand skills required to succeed in the field of cyber security.





COURSE OUTCOMES:

At the end of this course, the students will be able:

1. To express knowledge on basics of computer based vulnerabilities
2. To gain understanding on different foot printing, reconnaissance and scanning methods
3. To demonstrate the enumerations and vulnerability analysis methods
4. To gain knowledge on hacking options available in Web and wireless applications
5. To acquire knowledge on the options for network protection
6.

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Unit I INTRODUCTION TO HACKING

Introduction to Hacking – Important Terminologies – Penetration Test – Vulnerability Assessments versus Penetration Test – Pre-Engagement – Rules of Engagement –Penetration Testing Methodologies – OSSTMM – NIST – OWASP – Categories of Penetration Test – Types of Penetration Tests – Vulnerability Assessment Summary –Reports.

Unit II FOOT PRINTING AND RECONNAISSANCE

Scanning Networks – Enumeration – Vulnerability Analysis – System Hacking – Malware Threats – Sniffing.

Unit–III NETWORK ATTACKS

Vulnerability Data Resources – Exploit Databases – Network Sniffing – Types of Sniffing – Promiscuous versus Non promiscuous Mode – MITM Attacks – ARP Attacks – Denial of Service Attacks –Hijacking Session with MITM Attack – SSL Strip: Stripping HTTPS Traffic – DNS Spoofing – ARP Spoofing Attack Manipulating the DNS Records – DHCP Spoofing –

Unit IV TYPES OF HACKERS

Black Hat Hacker - White Hat Hacker - Grey Hat Hacker - Hacking Process - Foot Printing – Scanning - Gaining Access - Maintaining Access

Unit V WIRELESS AND WEB HACKING

Wireless Hacking – Introducing Aircrack- Cracking the WEP – Cracking a WPA/WPA2 Wireless Network Using Aircrack-ng – Evil Twin Attack – Causing Denial of Service on the Original AP – Web Hacking – Attacking the Authentication – Brute Force and Dictionary Attacks – Types of Authentication – Log-In Protection Mechanisms – Captcha Validation Flaw

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PONNAIYAH RAMAJAYAM INSTITUTE OF SCIENCE & TECHNOLOGY (PRIST)

(Declared as DEEMED TO BE UNIVERSITY U/s 3 of UGC Act, 1956)

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CIRCULAR

SUB: MOOC'S COURSE-Reg.

It is informed that the department of computer science and engineering is planning to organized a certified course on Virtual Reality on 13.01.23 for the academic year 2022-2023 odd semester. The detailed schedule will be given by the department. Head of the departments are requested to inform their students about the certified course on Virtual Reality and motivate them to attend the course. HOD's are requested to nominate one faculty member to co-ordinate the same.

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PONNAIYAH RAMAJAYAM INSTITUTE OF SCIENCE & TECHNOLOGY (PRIST)

Declared as Deemed-to-be University U/s 3 of UGC Act, 1956

From

The HOD,
Department of CSE,
Prist University,
Vallam, Thanjavur.

To

The DEAN,
Prist University,
Vallam, Thanjavur.

Respected Sir,

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As the department is equipped with relevant lab facilities and enterprise in the same field, we are requesting the permission for the conduct of the same.

Duration: 45 Hrs

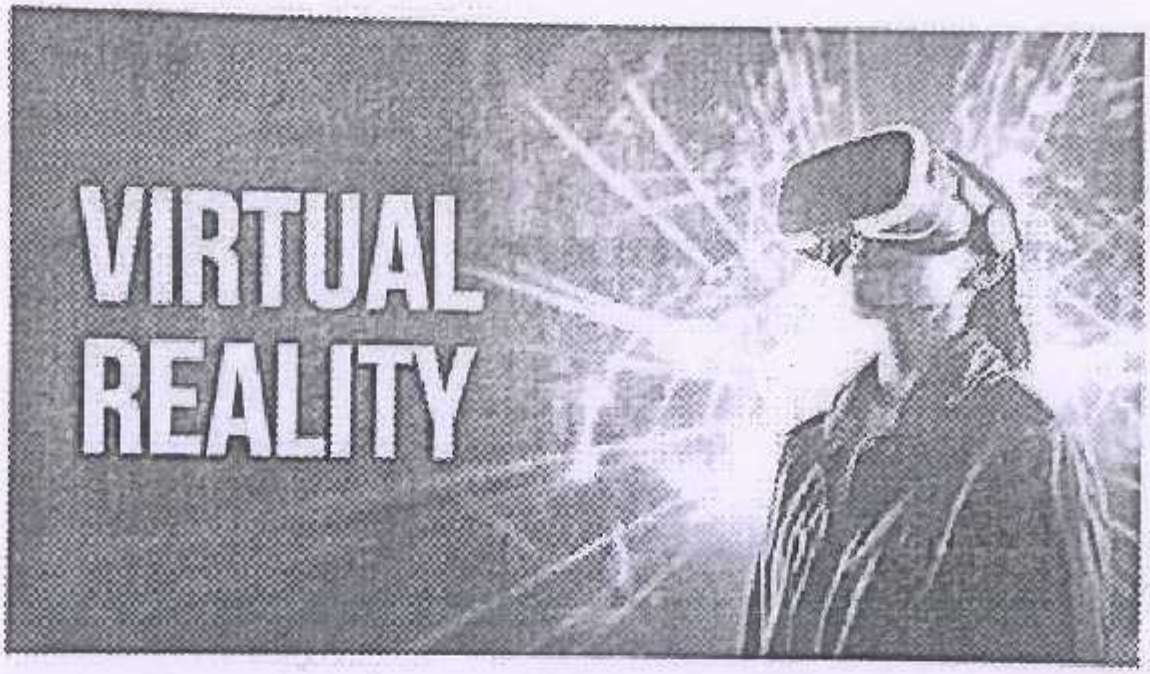
Thanking You.

Yours Truly,
HOD/AIDS

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VIRTUAL REALITY

Virtual Reality (VR) is a technology that creates a simulated environment, allowing users to feel like they are in a different place or world. VR puts you inside a computer-generated world that feels real. It does this by using special equipment that covers your eyes and sometimes your ears called **VR Headset**. Virtual Reality creates a believable, interactive 3D environment that you can explore and interact with, making you feel like you are really there.



This is made possible by putting on a head-mounted display that sends a form of input tracking. The display is split between the eyes and thus creates a stereoscopic 3D effect with stereo sound to give you a graphic experience.

The technology feeds in the images of the objects taken at slightly different angles which creates an impression of depth and solidity. The LCD or OLED panels inside are refracted by lenses completely fill the field of vision with what is to be displayed and experienced. Together with the technology

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and the input tracking, it creates an immersive and exciting believable world that the computer generates. What we know today as VR, has been existing for decades now. Taking you back to when 360° paintings took the world by surprise, giving a virtual element.

VR merely is 'The Wise Guy' of the digital world. It creates a world that neither functions according to you, nor does it respond to your actions. It gives you a first-hand experience with even the after-effects of an event along with the ability to interact and interrelate with the world created. This technology holds vast potential insights into the workings of the Human Brain.

Types of Virtual Reality (VR)

On the basis of the most important feature of VR i.e. immersion and the types of systems and interfaces used, The VR systems can be classified into 3 types :

1. **Immersive**
2. **Semi-immersive**
3. **Non – immersive**

1. Immersive VR system

Immersive VR system is closest to the virtual environment. It makes us experience the highest level of immersion. This VR system is expensive than others. It provides the closest feeling of being in virtual world. Tools and gadgets used in this system are advanced and not so common to use.

2. Semi – immersive VR system

Semi – immersive VR systems also make us to experience a high level of immersion but the tools and gadgets used are not so advanced and costly. Tools and gadgets used in this system are common to us and utilize physical models.

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3. Non-immersive VR system

Non-immersive VR system is the least immersive and least immersive VR system. It is not expensive to use this system. It is also known as desktop VR system because the gadgets used are limited to glasses and display monitors and it uses the least expensive components.

UNIT -I

INTRODUCTION TO VIRTUAL REALITY (VR): Defining Virtual Reality, Key elements of virtual reality experience, Virtual Reality, Telepresence, Augmented Reality and Cyberspace.

UNIT-II

Input Devices: (Trackers, Navigation, and Gesture Interfaces): Three-dimensional position trackers, navigation and manipulation, interfaces and gesture interfaces.

UNIT-III

Modeling: Geometric modeling, Kinematics modeling, Physical modeling, Behaviour modeling, Model management.

UNIT-IV

Augmented Reality (AR): Taxonomy, Technology and Features of Augmented Reality, AR Vs VR, Challenges with AR, AR systems and functionality, Augmented Reality Methods, Visualization Techniques for Augmented Reality, Enhancing interactivity in AR Environments.

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UNIT-V

Interaction & Audio:

Interaction - Motor Programs and Remapping, Locomotion, Manipulation, Social Interaction. Audio - The Physics of Sound, The Physiology of Human Hearing, Auditory Perception, Auditory Rendering.

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SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CIRCULAR

SUB: ADD ON COURSE- Reg..

It is informed that the department of computer science and engineering is planning to organized a certificate course on Software testing Automation on 20.01.23 for the academic year 2022-2023 odd semester. The detailed schedule will be given by the departments. Head of the departments are requested to inform their students about the certified course on Software testing Automation and motivate them to attend the course. HOD's are requested to nominate one faculty member to co-ordinate the same.

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PONNAIYAH RAMAJAYAM INSTITUTE OF SCIENCE & TECHNOLOGY (PRIST)

Deemed-to-be UNIVERSITY
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From

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Duration: 45 Hrs.

Thanking You,

Yours Truly,

HOD/CSE

REGISTRAR
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VALLAM-613 403, THANJAVUR

UNIT I FOUNDATIONS OF SOFTWARE TESTING

Why do we test Software?, Black-Box Testing and White-Box Testing, Software Testing Life Cycle, V- model of Software Testing, Program Correctness and Verification, Reliability versus Safety, Failures, Errors and Faults (Defects), Software Testing Principles, Program Inspections, Stages of Testing: Unit Testing, Integration Testing, System Testing

UNIT II TEST PLANNING

The Goal of Test Planning, High Level Expectations,Intergroup Responsibilities, TestPhases, Test Strategy, Resource Requirements, Tester Assignments, Test Schedule, Test Cases, Bug Reporting, Metrics and Statistics.

UNIT III TEST DESIGN AND EXECUTION

Test Objective Identification, Test Design Factors, Requirement identification, Testable Requirements, Modeling a Test Design Process, Modeling Test Results, Boundary Value Testing, Equivalence Class Testing, Path Testing, Data Flow Testing, Test Design Preparedness Metrics, Test Case Design Effectiveness, Model-Driven Test Design, Test Procedures, Test Case Organization and Tracking, Bug Reporting, Bug LifeCycle.

UNIT IV ADVANCED TESTING CONCEPTS

Performance Testing: Load Testing, Stress Testing, Volume Testing, Fail-Over Testing, Recovery Testing, Configuration Testing, Compatibility Testing, Usability Testing, Testing the Documentation, Security testing, Testing in the Agile Environment, Testing Web and Mobile Applications.

UNIT V TEST AUTOMATION AND TOOLS

Automated Software Testing, Automate Testing of Web Applications, Selenium: Introducing Web Driver and Web Elements, Locating Web Elements, Actions on Web Elements, Different Web Drivers, Understanding Web Driver

REGISTRAR
Ponnaiyah Ramajayam Institute of
Science & Technology

Events. Testing: Understanding Testing.xml, Adding Classes, Packages.

The Software Testing Tutorial serves as a comprehensive guide for learning Software Testing. It covers all software testing basics to the most advanced concepts, making it beneficial for both beginners and experienced professionals.

Testing is basically a collection of methods to evaluate an application's suitability for use by a predetermined script. The basic goal of testing is to find application flaws so that they may be identified and fixed.

As the field evolves, gaining proficiency in automated testing tools and frameworks becomes increasingly important. This not only streamlines the testing process but also enhances accuracy and efficiency, making it a vital skill set for anyone looking to excel in the software testing domain.

For those who want a thorough, hands-on approach, kindly explore our **dedicated course Manual to Automation Testing** which covers both theoretical and practical aspects and can be invaluable in mastering these techniques.



Automated Testing

It is using special software for tasks that people usually do when checking and testing a software product. Nowadays, many software projects use

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automation testing from start to end, especially in agile and DevOps methods. This means the engineering team runs tests automatically with the help of software tools. It will help to keep the testing team to make the process faster. Continuous delivery (CD) and quickly sends the new code to users. Automated testing is important for this because it converts the manual steps into automation. Continuous integration (CI) checks the new code changes to prevent issues. CD gets after CI done everything well. Automated testing, CI & CD will together prove that the new code is error-free and ready for deployment quickly for the project purpose.

some of the reasons for using automation testing:

- **Quality Assurance:** Manual testing is a tedious task that can be boring and at the same time error-prone. Thus, using automation testing improves the quality of the software under test as more test coverage can be achieved.
- **Error or Bug-free Software:** Automation testing is more efficient for detecting bugs in comparison to manual testing.
- **No Human Intervention:** Manual testing requires huge manpower in comparison to automation testing which requires no human intervention and the test cases can be executed unattended.
- **Increased test coverage:** Automation testing ensures more test coverage in comparison to manual testing where it is not possible to achieve 100% test coverage.

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SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CIRCULAR

SUB: ADD ON COURSE-Reg.,

It is informed that the department of computer science and engineering is planning to organized a certified course on Neural Networks on 3.04.23 for the academic year 2022-2023 odd semester. The detailed schedule will be given by the departments. Head of the departments are requested to inform their students about the certified course on Neural Networks and motivate them to attend the course. HOD's are requested to nominate one faculty member to co-ordinate the same.

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PONNAIYAH RAMAJAYAM INSTITUTE OF SCIENCE & TECHNOLOGY (PRIST)

Declared as DEEMED TO BE UNIVERSITY
U/S 3 OF UGC ACT, 1956

From

The HOD,
Department of CSE,
Prist University,
Vallam, Thanjavur

To,

The DEAN,
Prist University,
Vallam, Thanjavur.

Respected Sir,

Sub:- Requesting Permission for conducting Add on Course – Reg.

I wish to bring to your Kind information that the department of computer science and engineering has planned to conduct the following Add On course programme for the academic year 2022-23 odd semester.

As the department is equipped with relevant lab facilities and enterprise in the same field, we are requesting the permission for the conduct of the same.

Duration: 45 Hrs.

Thanking You,

Yours Truly,
HOD/AIDS

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UNIT I FUNDAMENTALS OF NEURAL NETWORKS

Neuron, Nerve Structure and Synapse, Artificial Neuron and its Model, Activation Functions. Neural Network Architecture: Single Layer and Multilayer Feed Forward Networks, Recurrent Networks. Various Learning Techniques: Perception and Convergence Rule, Auto-Associative and Hetero-Associative Memory

UNIT II BACKPROPAGATION NETWORKS

Back Propagation Networks) Architecture: Perceptron Model, Solution, Single Layer Artificial Neural Network, Multilayer Perceptron Model: Back Propagation Learning Methods, Effect of Learning Rule Co -- Efficient ,Back Propagation Algorithm, Factors Affecting Backpropagation Training, Applications

UNIT III COMPETITIVE NEURAL NETWORKS

Kohonen's Self Organizing Map – SOM Architecture, learning procedure – Applications: Learning Vector Quantization – learning by LVQ; Adaptive Resonance Theory – Learning procedure – Applications.

UNIT VI PARAMETRIC MACHINE LEARNING

Logistic Regression: Classification and representation – Cost function – Gradient descent – Advanced optimization – Regularization - Solving the problems on overfitting, Perceptron –Neural Networks – Multi – class Classification - Backpropagation – Non-linearity with activation functions (Tanh, Sigmoid, Relu, PRelu) - Dropout as regularization

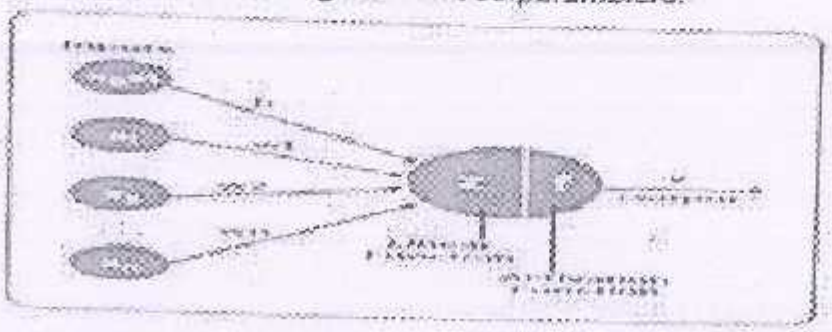
NEURAL NETWORKS

Neural networks extract identifying features from data, lacking pre-programmed understanding. Network components include neurons, connections, weights, biases, propagation functions, and a learning rule. Neurons receive inputs, governed by thresholds and activation functions. Connections involve weights and biases regulating information transfer. Learning, adjusting weights and biases, occurs in three stages: input

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computation, output generation, and iterative refinement enhancing the network's proficiency in diverse tasks.
These include:

1. The neural network is simulated by a new environment.
2. Then the free parameters of the neural network are changed as a result of this simulation.
3. The neural network then responds in a new way to the environment because of the changes in its free parameters.



Importance of Neural Networks

The ability of neural networks to identify patterns, solve intricate puzzles, and adjust to changing surroundings is essential. Their capacity to learn from data has far-reaching effects, ranging from revolutionizing technology like natural language processing and self-driving automobiles to automating decision-making processes and increasing efficiency in numerous industries. The development of artificial intelligence is largely dependent on neural networks, which also drive innovation and influence the direction of technology.

Neural Networks work

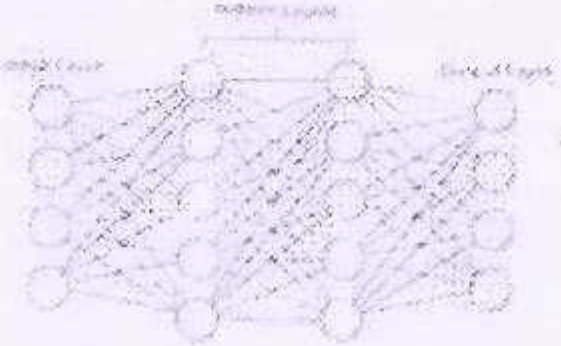
Let's understand with an example of how a neural network works:
Consider a neural network for email classification. The input layer takes features like email content, sender information, and subject. These inputs, multiplied by adjusted weights, pass through hidden layers. The network, through training, learns to recognize patterns indicating whether an email is spam or not. The output layer, with a binary activation function, predicts whether the email is spam (1) or not (0). As the network iteratively refines its weights through backpropagation, it becomes adept at distinguishing

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between spam and legitimate emails, showcasing the practicality of neural networks in real-world applications like email filtering.

Working of a Neural Network

Neural networks are complex systems that mimic some features of the functioning of the human brain. It is composed of an input layer, one or more hidden layers, and an output layer made up of layers of artificial neurons that are coupled. The two stages of the basic process are called backpropagation and forward propagation.



Types of Neural Networks

There are seven types of neural networks that can be used

- **Feedforward Neteworks:** A feedforward neural network is a simple artificial neural network architecture in which data moves from input to output in a single direction
- **Multilayer Perceptron (MLP):** MLP is a type of feedforward neural network with three or more layers, including an input layer, one or more hidden layers, and an output layer
- **Convolutional Neural Network (CNN):** A Convolutional Neural Network (CNN) is a specialized artificial neural network designed for image processing
- **Recurrent Neural Network (RNN):** An artificial neural network type intended for sequential data processing is called a Recurrent Neural Network (RNN).
- **Long Short-Term Memory (LSTM):** LSTM is a type of RNN that is designed to overcome the vanishing gradient problem in training RNNs.

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SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CIRCULAR

SUB: ADD ON COURSE- Reg.

It is informed that the departments of computer science and engineering is planning to organized a certified course on Deep Learning on 10.05.23 for the academic year 2022-2023 odd semester. The detailed schedule will be given by the departments. Head of the departments are requested to inform their students about the certified course on Deep Learning motivate them to attend the course. HOD's are requested to nominate one faculty member to co-ordinate the same.

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From

The HOD,
Department of CSE,
Prist University,
Vallam, Thanjavur.

To

The DEAN,
Prist University,
Vallam, Thanjavur

Respected Sir,

Sub:- Requesting Permission for conducting Add on Course – Reg.

I wish to bring to your kind information that the department of computer science and engineering has planned to conduct the following Add On course programme for the academic year 2022-23 odd semester.

As the department is equipped with relevant lab facilities and enterprise in the same field, we are requesting the permission for the conduct of the same.

Duration: 45 Hrs.

Thanking You.

Yours faithfully,
HOD/CSE

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UNIT I DEEP NETWORKS BASICS

Linear Algebra: Scalars -- Vectors -- Matrices and tensors; Probability Distributions -- Gradient-based Optimization -- Machine Learning Basics: Capacity -- Overfitting and underfitting --Hyperparameters and validation sets -- Estimators -- Bias and variance -- Stochastic gradient descent -- Challenges motivating deep learning; Deep Networks: Deep feedforward networks; Regularization -- Optimization.

UNIT II CONVOLUTIONAL NEURAL NETWORKS

Convolution Operation -- Sparse Interactions -- Parameter Sharing -- Equivariance -- Pooling -- Convolution Variants: Strided -- Tiled -- Transposed and dilated convolutions; CNN Learning: Nonlinearity Functions -- Loss Functions -- Regularization -- Optimizers --Gradient Computation.

UNIT III RECURRENT NEURAL NETWORKS

Unfolding Graphs -- RNN Design Patterns: Acceptor -- Encoder --Transducer; Gradient Computation

-- Sequence Modeling Conditioned on Contexts -- Bidirectional RNN -- Sequence to Sequence RNN -- Deep Recurrent Networks -- Recursive Neural Networks -- Long Term Dependencies; Leaky Units: Skip connections and dropout; Gated Architecture: LSTM.

UNIT IV MODEL EVALUATION

Performance metrics -- Baseline Models -- Hyperparameters: Manual Hyperparameter -- Automatic Hyperparameter -- Grid search -- Random search -- Debugging strategies.

UNIT V AUTOENCODERS AND GENERATIVE MODELS

Autoencoders: Undercomplete autoencoders -- Regularized autoencoders -- Stochastic encoders and decoders -- Learning with autoencoders; Deep Generative Models: Variational autoencoders -- Generative adversarial networks.

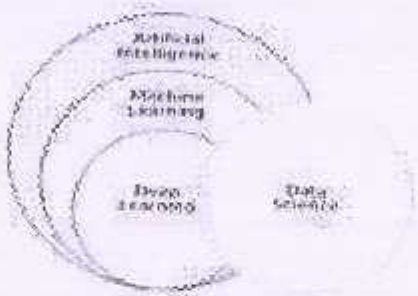
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DEEP LEARNING

In the fast-evolving era of artificial intelligence, Deep Learning stands as a cornerstone technology, revolutionizing how machines understand, learn, and interact with complex data. At its essence, Deep Learning AI mimics the intricate neural networks of the human brain, enabling computers to autonomously discover patterns and make decisions from vast amounts of unstructured data. This transformative field has propelled breakthroughs across various domains, from computer vision and natural language processing to healthcare diagnostics and autonomous driving.

The definition of Deep learning is that it is the branch of machine learning that is based on artificial neural network architecture. An artificial neural network or ANN uses layers of interconnected nodes called neurons that work together to process and learn from the input data.

In a fully connected Deep neural network, there is an input layer and one or more hidden layers connected one after the other. Each neuron receives input from the previous layer neurons or the input layer. The output of one neuron becomes the input to other neurons in the next layer of the network, and this process continues until the final layer produces the output of the network. The layers of the neural network transform the input data through a series of nonlinear transformations, allowing the network to learn complex representations of the input data.)



Deep learning AI can be used for supervised, unsupervised as well as reinforcement machine learning. It uses a variety of ways to process these.

- **Supervised Machine Learning:** Supervised machine learning is the machine learning technique in which the neural network learns to

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make predictions or classify data based on the labeled datasets. Here we input both input features along with the target variables.

- **Unsupervised Machine Learning:** Unsupervised machine learning is the machine learning technique in which the neural network learns to discover the patterns or to cluster the dataset based on unlabeled datasets. Here there are no target variables.
- **Reinforcement Machine Learning** Reinforcement Machine Learning is the machine learning technique in which an agent learns to make decisions in an environment to maximize a reward signal. The agent interacts with the environment by taking action and observing the resulting rewards..

COURSE OUTCOMES :

- Illustrate the categorization of machine learning algorithms.
- Compare and contrast the types of neural network architectures, activation functions.
- Acquaint with the pattern association using neural networks
- Elaborate various terminologies related with pattern recognition and architectures of convolutional neural networks
- Construct different feature selection and classification techniques and advanced neural network architectures such as RNN, Autoencoders, and GANs.

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2022-2023

SCHOOL OF COMMERCE AND MANAGEMENT

DEPARTMENT OF MANAGEMENT

PRIST/C&M/22-23/3.2

This is to inform all commerce students that the value added course classes for the academic year 2022-2023 odd semester will be commenced from 18.07.2022.Hence requesting all registered students to attend the classes without fail.

COURSE OFFERED:

- Certificate Course In E-Banking
- Diploma In Tax Procedure & Practices
- Certificate Course In Sales And Marketing
- Certificate Course In Investment Management
- Certificate Course In Business Writing
- Certificate Course In Intelligence For Excellence
- Certificate Course In Internet Things

HOD

Dean

Copy To:

Hon'ble Vice Chancellor (for your kind information)
Registrar
Registrar office
Dean
Department file

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Academic year: 2022-2023

ODD SEMSTER

Course: Diploma in Tax Procedure & Practice
Subject Code: 2261TP

AIMS: To emphasis Better performance ihatt the Overall GST

Objectives:

- This course to provide knowledge of the Indian tax system.
- To provide a basic knowledge on the role of tax laws in constitution.
- To provide a basic knowledge on State Sales Tax act and rules made there under State Sales Tax Procedure and Practice.

OUTCOMES:

To help the students form a clear idea of Managerial Economics. To enable the students, understand determination of price under different market forms. To enable the students, understand the situation of consumer and producer equilibrium. To describe the concepts of inflation and its consequences in an economy. To illustrate the calculation of national income.

Unit I: Introduction

Amendment to Constitution and GST – Concept of VAT: Meaning, variants and methods; major defects in the structure of indirect taxes prior to GST - Applicability of GST – Types of GST – Benefits of implementing GST - Goods and Services Tax Council.

Unit II: Definitions under CGST Act

Aggregate turnover – Agriculturist – Business – Business Vertical – capital goods – electroniccommerce operator – fixed establishment – goods – Inward Supply – Job work – Manufacture -Person – services – supplier.

Unit III: Concept of Supply

Meaning and Scope of Supply under Section 7 of the CGST Act – Inward and Outward Supply –Tax liability under Section 8 - Determination of Nature of Supply under Section 7 of the IGST Act – Intra-state supply under Section 8 of the IGST Act - Activities to be treated as supply even if made without consideration (Schedule I to the CGST Act)

Unit IV: Registration under GST

Persons liable for registration – Aggregate turnover - Persons not liable for registration – compulsory registration cases under Section 24 of the CGST Act – Procedure for registrationincluding verification of the application and approval – Issue of Registration Certificate including Goods and Services Tax Registration Number – cancellation of registration – revocation of cancellation of registration.

Unit V: Composition levy.

Applicability – Rate of tax of the composition levy – Conditions and restrictions for opting for composition levy – Validity of composition levy.

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BOOKS FOR REFERENCE:

1. Indirect Tax Laws- Bangar's Publication- Dr. Yogendra Bangar, Dr. Vandana Bangar
2. Students guide to Income Tax (including GST- Taxman's publication- Dr. Vinod Singhania and Dr. Monica Singhania
3. Business Taxation- Dr. Ravi M.N, Mr. Bhanu Prakash B.E, Dr. Suman Shetty N

HOD
Department of Business Management
Ponnaiyah Ramajayam Institute of
Science & Technology (PRIST)
THANJAVUR-613 403.

DEAN
Head of Commerce and Management
Ponnaiyah Ramajayam Institute of
Science & Technology (PRIST)
THANJAVUR-613 403.

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ADD-ON COURSES

ODD SEMESTER

Diploma in Tax Procedure & Practice

2022-2023

ABOUT UNIVERSITY:

PRIST University, Ponnaiyah Ramajayam Institution, made a foray into the Academic Domain, with the establishment of Sri Ram Institute of Computer Science and Technology in 1985. Over time, various institutions of higher learning such as Arts and Science College, commerce and business management College of Engineering and Technology, College of Education, Research Institution, Polytechnic college are added features to the PRIST crown.

DEPARTMENT OF MANAGEMENT

The department of commerce and business management was established in the year 2004, with commerce Dept focused on research and education diffused courses like Undergraduate/Postgraduate/M.Phil and Ph.D programs offered. In this department there are 19 faculty members (Professor, Associate and Assistant Professor The faculty offers B.Com, BBA, M.Com, MBA and research programmes in Accountancy, Finance, Business administration, Banking & Business Economics, Human Resource Management, Marketing Management, Retail Management, Family Business & Entrepreneurship etc

APPLICATION FORM:

10. FULL NAME _____
11. PROGRAMME _____
12. DISCIPLINE _____
13. INSTITUTION NAME _____
14. DATE OF BIRTH _____
15. SEX(M/F) _____
16. E-MAIL _____
17. MOBILE NO _____
18. ADDRESS _____

Signature of the Applicant

SUBMISSION OF APPLICATION FORM

Submit your application form in person to the coordinator, school of commerce and Business and Management, PRIST University Thanjavur, vallam,-613403.

APPLICATION MAY BE SENT TO COURSE CO-ORDINATOR:

Mrs.K.Sujatha,
Dean(I/c) of Commerce and Management,
PRIST University,Thanjavur,Thanjavur

HOD
Department of Business Management
Ponnaiyah Ramajayam Institute of
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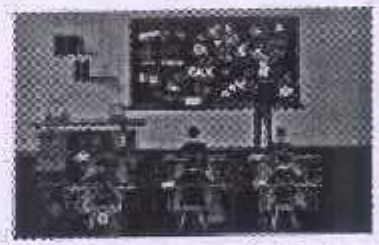
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ADD-ON COURSES

ODD SEMESTER

Diploma in Tax Procedure & Practice
2022-2023



INTRODUCTION

Tax Procedure and Practice is the complex study of Tax processes. Tax Procedure and Practice degree programs often include Value added tax, Service tax, Property tax, Income tax, etc. and to equip the students with knowledge in indirect taxes like wealth tax, central excise tax, and customs tax.

IMPORTANCE OF TAX PROCEDURE & PRACTICE

Direct taxation is one of the main sources of income for the government. It also affects inflation, demand and supply within the economy by regulating disposable incomes across the board.

OBJECTIVES OF THE PROGRAM

This Course to provide knowledge of the Indirect Tax System.
To Provide a basic knowledge on the role of tax laws in Constitution.
To Provide a basic knowledge on state Sales Tax and rules made there under state Sales Tax and Procedure and Practice.

DURATION OF PROGRAM

45 Hours add on certificate course

PROGRAM OUTCOME

To help the students form a clear idea of Managerial Economics. To enable the students understand determination of price under different market forms. To enable the students understand the situation of consumer and producer equilibrium. To describe the concept of inflation and its consequences in an economy. To illustrate the calculation of national income

ELIGIBILITY CRITERIA AND STRUCTURE

Any graduate shall be eligible for the admission to the course.

CERTIFICATION:

The candidate successfully qualification

The course shall be awarded a certificate to that effect in the appropriate form by School of Commerce and Business Management, Department of Commerce, PRIST University, Thanjavur-Vallam.

Department of Business Management
Pennalyal Ramalingam Institute of
Science & Technology (PRIST)
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Pennalyal Ramalingam Institute of
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Text and Reference Books (latest revised edition only)

1. Meaning with information by H. Jerome Lester
2. Computer information Technology Global business by Puri and Vidin Puri
3. Fundamentals of data base systems by Jerome Lester, Pearson
4. An introduction to information Technology by Dr.Srinivasa Vallabhan, Sultan Chand & Sons
5. Law of Information Technology by D.P.Mittal, Tax Men, E-Markets, Macmillan 2007

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THANJAVUR-613 403.

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Academic year: 2022-2023
ODD SEMESTER

Course: CERTIFICATE COURSE IN E-BANKING
Subject Code: 2261EB

AIMS: To emphasis Better performance of E-Banking.

OBJECTIVES:

To help students assimilates knowledge of various digital products in Banking Sector and different
Payment Systems in India.
There is a need to understand the New Technologies and Digital Disruptions taking place in transformation of Business Models.

OUTCOME:

1. Understand banking and finance system in India.
2. Acquaint commercial bank and its product.
3. Build customer relationship in banking sector.
4. Well verse with e-banking services and internet Banking.

Unit – 1

E-Banking: Introduction – Meaning – Definition – Features – use of information technology to banking company – E-Banking channels: Automatic Teller Machine – Internet Banking – Tele banking – Mobile banking – IFSC Number.

Unit – 2

ATM: Meaning – Characters – Features – Functions – service available from ATM – Cash Deposit – Cash Withdraw – loan enquiry – Last few transactions – Balance – fund transfer – ticket booking – payments – ATM card – Pin Number.

Unit – 3

Internet Banking: Introduction – World Wide Web – Net banking account opening – Username and Password – secrecy of maintaining One Time Password – Net Banking Services – Fund Transfer – Make Payment.

Unit – 4

National Electronic Fund Transfer (NEFT): Introduction – Meaning – Functions – services. Real Time Gross Settlement (RTGS): Introduction – Meaning – Functions – Service infrastructure requirement – RTGS transactions.

Unit – 5

Security features SFMS: formats of SFMS – SFMS transaction – security aspects – RAS: requirements of RAS – application – security features of RAS – IT Act: legal status – electronic records Cyber crime and law.

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ADD-ON COURSES

ODD SEMESTER

Certificate Course in

E-Banking

2022-2023

ABOUT UNIVERSITY:

PRIST University, Pondicherry Ramajayam Institutions, made a foray into the Academic domain, with the establishment of Sri Ram Institute of Computer Science and Technology in 1985. Over time, various institutions of higher learning such as Arts and Science College, commerce and business management College of Engineering and Technology, College of Education, Research Institution, Polytechnic colleges are added feathers to the PRIST crown.

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APPLICATION FORM

1. FULL NAME _____
2. PROGRAMME _____
3. DISCIPLINE _____
4. INSTITUTION NAME _____
5. DATE-OF-BIRTH _____
6. SEX(F/M) _____
7. E-MAIL _____
8. MOBILE NO _____
9. ADDRESS _____

Signature of the Applicant

SUBMISSION OF APPLICATION FORM

Submit your application form in person to the coordinators, school of commerce and Business and Management, PRIST University Thanjavur, Pincode-613403.

APPLICATION MAY BE SENT TO COURSE CO-ORDINATOR:
Mr.K.RATHYA,
Dean(i/c) of Commerce and Management,
PRIST University, Thodavur, Thanjavur

Department of Business Management
Pondicherry Ramajayam Institute of
Science & Technology (PRIST)
THANJAVUR-613403

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ADD -ON COURSES

ODD SEMESTER

Certificate Course in E-Banking

2022-2023



INTRODUCTION

Internet banking, also known as online banking, e-banking or virtual banking, is an electronic payment system that enables customers of a bank or other financial institution to conduct a range of financial transactions through the financial institution's website.

IMPORTANCE OF E-BANKING

The major advantage of using internet banking is that you can move funds and see them at any time. You don't need to go to the bank to transfer money because you can do it from anywhere without going to the bank. Internet banking allows for lower operational expenses and higher service quality.

OBJECTIVES OF THE PROGRAM

To help students assimilate knowledge of various digital products in Banking Sector and different Payment Systems in India. There is a need to understand the New Technologies and Digital Disruptions taking place in transformation of Business Models.

DURATION OF PROGRAM

45 Hours add on certificate course

PROGRAM OUTCOME

1. Understand banking and finance system in India.
2. Acquaint commercial bank and its product.
3. Build customer relationship in banking sector.
4. Well verse with e-banking services and internet Banking.

ELIGIBILITY CRITERIA AND FEE STRUCTURE

Any graduate shall be eligible for the admission in the course.

CERTIFICATION:

The candidates successfully qualification

The course shall be awarded a certificate to the effect in the appropriate form by School of Commerce and Business Management, Department of Commerce, PRIST University, Thanjavur-Vallam.

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Academic year: 2022-2023
ODD SEMESTER

Course: Certificate Course in Sales & Marketing
Subject Code: 226ISM

AIMS: To emphasis Better performance in Sales and Marketing

OBJECTIVES: The objective of the Sales and Marketing course is to gain an understanding to make good decisions to market goods and services in a manner to be able to sell as per targets and a never-ending demand for it is created in the marketplace

OUTCOMES:

1. To communicate positively the purpose & objectives of the store to all store team members
2. To explain the importance of effective team communication
3. To understand the concept of team dynamics

UNIT I

Meaning of marketing Management – Functions of Marketing Management - Difference between Marketing Management and Sales Management – Advertising management – Need Importance –Advertising Strategy– Advertisement Copy – Media Planning – Effectiveness of Advertisement.

UNIT II

Marketing manager's responsibility – marketing planning – need, importance and process of planning - Marketing control and marketing audit – types and methods of conducting marketing audit – marketing risks – methods of dealing with marketing risks.

UNIT III

Sales Management - meaning and scope – functions of sales management –sales policy – selling process – responsibilities of sales manager - AIDA Formula- Need for sales force – recruitment and selection of sales force –training of salesman – qualities of a good salesman

UNIT IV

Sales office functions – interviews – receiving of orders – handling mails – filing– Record keeping – sales bulletin - Sales promotion – Dealer & Consumer sales promotion tools.

UNIT V

Sales Planning –Budgeting & Evaluation - Distribution functions – distribution policy components of physical distribution

TEXT BOOKS RECOMMENDED:

1. Dr.N.Rajan Nair – Marketing.
2. R.S.N. Pillai and Bagavathi – Modern marketing. – S.Chand.
3. Salesmanship and Advertising – Dawar.
4. Salesmanship – RSN Pillai and Bagavathi
5. Salesmanship and Publicity – JSK Patel.

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ADD-ON COURSES

ODD SEMESTER

Certificate Coursein Sales & Marketing

2022-2023

ABOUT UNIVERSITY

PRIST University, Pennaiyah Ramajayam Institutions, made a foray into the Academic Domain, with the establishment of Sri Ram Institute of Computer Science and Technology in 1985. Over time, various institutions of higher learning such as Arts and Science College, commerce and business management College of Engineering and Technology, College of Education, Research Institution, Polytechnic college are added feathers to the PRIST crown.

DEPARTMENT OF MANAGEMENT

The department of commerce and business management was established in the year 2008, with commerce Dept focused on research and education different courses like Undergraduate/Postgraduate/M.Phil and Ph.D programs offered. In this department there are 19 faculty members (Professor, Associate and Assistant Professor. The faculty offers B.Com, BBA, M.Com, MBA and research programmes in Accountancy, Finance, Business administration, Banking & Business Economics, Human Resource Management, Marketing Management, Retail Management, Family Business & Entrepreneurship etc

APPLICATION FORM

19. FULL NAME_____
20. PROGRAMME_____
21. DISCIPLINE_____
22. INSTITUTION NAME_____
23. DATE/MONTH_____
24. SEX(M/F)_____
25. E-MAIL_____
26. MOBILE NO_____
27. ADDRESS_____

Signature of the Applicant

SUBMISSION OF APPLICATION FORM

Submit your application form in person to the coordinators, dept of commerce and Business and Management, PRIST University Thanjavur, vallam, 613403.

APPLICATIONS MAY BE SEND TO COURSE CO-ORDINATOR:
Mrs.K.Sathya,
Dean(i/c) of Commerce and Management,
PRIST University,Thanjavur,Thanjavur

Department of Business Management
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ADD -ON COURSES

ODD SEMESTER

Certificate Course in Sales& Marketing

2022-2023



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INTRODUCTION

Marketing focuses on moving the product from the company to the market (through product launches and awareness campaigns), while sales focuses on moving the product from the market to the customer. Sales focuses on the needs of the company, while marketing focuses on the needs of the market.

IMPORTANCE OF SALES & MARKETING:

Marketing plays an important role in selling. It helps sales teams find and qualify leads and maintains contact with prospects throughout the sales cycle. Although sales and marketing reside in different departments in most organizations, integration between the two can help to improve overall performance in terms of revenue and profit

OBJECTIVES OF PROGRAM

The objective of the Sales and Marketing course is to gain an understanding to make good decisions to market goods and services in a manner to be able to sell as per targets and a corresponding demand for it is created in the marketplace..

DURATION OF PROGRAM:

45 Hours as a certificate course

PROGRAM OUTCOME

1. To communicate positively the purpose & objectives of the store to all store team members
2. To explain the importance of effective team communication
3. To understand the concept of team dynamics

ELIGIBILITY CRITERIA AND STRUCTURE

Any graduate shall be eligible for the admission to the course.

CERTIFICATION:

The candidates successfully qualification

The course shall be awarded a certificate to that effect in the appropriate form by School of Commerce and Business Management, Department of Commerce, PRIST University, Thanjavur Vallam.

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Academic year: 2022-2023
ODD SEMESTER

Course: Certificate Course in Investment Management
Subject Code: 22611M

AIMS: To emphasis Better performance in Sales and Marketing.

OBJECTIVES:

- provide an overview of historical trends and innovations in financial instruments and trading processes
- provide an overview of various financial instruments
- provide insight into the use of finance theory in investment management
- provide an overview of historical trends and innovations in financial instruments and trading processes
- provide an overview of various financial instruments
- provide insight into the use of finance theory in investment management

OUTCOMES:

- contrast key characteristics of given financial instruments • briefly recall important historical trends in the innovation of markets, trading and financial instruments
- name key facts related to the historical return and risk of bond and equity markets
- relate key facts of the managed fund industry
- define market microstructure and evaluate its importance to investors
- explain the fundamental drivers of diversification as an investment strategy for investors

UNIT I

Investment Management - Nature and scope - Objectives – Process – Investment Media Security and Non-security forms of Investment - gilt edged securities – Sources of Investment information.

UNIT II

New Issues Market – Methods of Issuing – Parties involved in the new issue market – Secondary market – Stock Exchanges – NSE and BSE – Trading mechanism – online trading – SEBI and Investors production.

UNIT III

Security Analysis – Approaches – Fundamental Analysis – Technical Analysis – Dow Theory – Random Walk Theory – Efficient Market Hypothesis.

UNIT IV

Portfolio Analysis – Traditional and Modern approach – Rationale of Diversification of Investments – Markovitz theory – Sharpe Index Model - Capital Asset Pricing Model.

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UNIT V

Investment companies in India – Types Mutual Fund Operations in India – UTI – SEBI and RBI Guidelines for Mutual Funds.

TEXT BOOKS RECOMMENDED:

1. Asthana, D. K., and Asthana, Meera, Environmental Problems and Solutions, S. Chand, New Delhi, 2012.
2. Bagati, Asha, Child Rights in India, Oxford University Press, New Delhi, 2010.
3. Bhatnagar Meenu and Bhatnagar Nitin, Effective Communication and Soft Skills, Pearson India, New Delhi, 2011.
4. G Subba Rao, Writing Skills for Civil Services Examination, Access Publishing, New Delhi, 2014 5. Kaushal, Rachna

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ADD -ON COURSES

ODD SEMESTER

Certificate Course in Investment Management

2022-2023

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APPLICATION FORM:

26. FULL NAME _____
29. PROGRAMME _____
30. DISCIPLINE _____
31. INSTITUTION NAME _____
32. DATE OF BIRTH _____
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35. MOBILE NO _____
36. ADDRESS _____

Signature of the Applicant

SUBMISSION OF APPLICATION FORM

Submit your application form in person to the coordinator, school of commerce and Business and Management, PRIST University Thanjavur, [illegible], 613403.

APPLICATION MAY BE SENT TO COURSE CO-ORDINATOR:
Mrs.K.Sathya.
Dept(i/c) of Commerce and Management,
PRIST University,Thoraiyur,Thanjavur

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ADD-ON COURSES

ODD SEMESTER

Certificate Course in Investment Management

2022-2023



INTRODUCTION

Investment management refers to the handling of financial assets and other investments—not only buying and selling them. Management includes devising a short- or long-term strategy for acquiring and disposing of portfolio holdings. It can also include banking, budgeting, and tax services and duties, as well

IMPORTANCE OF INVESTMENT MANAGEMENT

Investment management is an area that many people are aware of but may need help understanding, and yet it can have a major impact on your financial future. When talking about investment management, we typically mean the practice of managing funds or securities to meet certain financial goals -- usually long-term ones such as retirement savings and other forms of wealth building.

OBJECTIVES OF PROGRAM

- provide an overview of historical trends and innovations in financial instruments and trading processes
- provide an overview of various financial instruments
- provide insight into the use of finance theory in investment management
- provide an overview of historical trends and innovations in financial instruments and trading processes
- provide an overview of various financial instruments
- provide insight into the use of finance theory in investment management

DURATION OF PROGRAM

45 Hours and no certificate course

PROGRAM OUTCOME

- contrast key characteristics of given financial instruments - briefly recall important historical trends in the innovation of markets, trading and financial instruments
- name key facts related to the historical return and risk of bond and equity markets
- relate key facts of the managed fund industry
- define markets microstructure and evaluate its importance to investors
- explain the fundamental drivers of diversification as an investment strategy for investors

ELIGIBILITY CRITERIA AND STRUCTURE

Any graduate shall be eligible for the admission to the course

CERTIFICATES:

The candidates successfully qualification

The course shall be awarded a certificate to that effect in the appropriate form by School of Commerce and Business Management, Department of Commerce, PRIST University, Thanjavur-Vallam

Ponnaiyah Ramajayam Institute of Science & Technology (PRIST)

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COURSE: CERTIFICATES IN BUSINESS WRITTING

Subject Code: 2021CCBW

AIMS: To emphasis better performance thaq the overall Business writting

Objectives:

- After successfully completing this week's activities, you should be able to:
- Apply knowledge of sentence grammar to produce effective, correct, and rhetorically appropriate sentence constructions.
- Identify personal areas for improvement in common grammar, punctuation, and syntax errors.

OUTCOMES:

- The ability to compile the writing in a logical sequence. A guide to help recognize, and eliminate, common errors in business writing.
- The ability to focus on the main purpose of the communication. The skills to maintain clarity in preparing business communication.

UNIT-1

Business Writing Fundamentals

- What is "business English?"
- Sentence grammar and punctuation
  Sentence fluency

UNIT-2

Genres of Office Communication

- You-attitude and the rhetorical situation
- Basic document design

UNIT-3

Workplace Communication Case Study: Research Set-up

- Proposals in business writing
- Ethics in professional research

UNIT-4

Workplace Communication Case Study: Written Report

- Features, purposes, and design of short reports

UNIT-5

- Short Reports: Features, Purposes, and Design prerecorded mini lecture

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ADD -ON COURSES

CERTIFICATE COURSE IN BUSINESS WRITING

2022-2023

HOD

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DEPARTMENT OF MANAGEMENT

The department of commerce and business management was established in the year 2008 with a mission to inculcate research and [illegible]

APPLICATION FORM

1. FULL NAME _____
2. PROGRAMME _____
3. DISCIPLINE _____
4. INSTITUTION NAME _____
5. DATE OF BIRTH _____
6. SEX(M/F) _____
7. E-MAIL _____
8. MOBILE NO _____
9. ADDRESS _____

Signature of the Applicant

SUBMISSION OF APPLICATION FORM

Submit your application form in person in the coordination office of commerce and Business and Management. PRIST University Thanjavur, Tamil Nadu-613403

APPLICATION MAY BE SENT TO
COURSE CO-ORDINATOR
Dr. T. Jayachelan
Head of the Department
PRIST University, Thanjavur, Thanjavur.

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CERTIFICATE COURSE IN BUSINESS WRITING

2022-2023

IMPORTANCE OF BUSINESS WRITING:

Learning and honing business writing skills can have a positive impact on an individual's career advancement. Effective communication makes an organization run smoothly. Professional writing improves productivity and the ability of all functional areas to work together, particularly in an increasingly global workplace where collaboration is the norm. Understanding the importance of business writing will help you improve your skills in this very important management area.

writing skills training becoming essential for employability development initiatives. This training course will describe and apply structuring and business writing techniques designed to cater for the modern business environment.

DURATION OF PROGRAM

45 Hours add on certificate course

PROGRAM OUTCOME

- A clear understanding of how to plan and structure business writing in a professional manner
- Practice in building the introduction, the main body, and the conclusion of an effective business communication
- The ability to compile the writing in a logical sequence
- A guide to help recognize, and eliminate, common errors in business writing
- The ability to focus on the main purpose of the communication
- The skills to maintain clarity in preparing business communication

Any students shall be eligible for the admission to the course.

CERTIFICATION:

The candidates successfully qualifying the course shall be awarded a certificate to that effect in the appropriate form by school of commerce and Business Management, Department of Commerce, PRIST University, Thanjavur, Vallam.



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PRIST UNIVERSITY

Academic year: 2022-2023
Course: certificate course in Intelligence for Excellence

Subject Code: 2261IE

AIM: To emphasis Better performance in **Intelligences for Excellence**

OBJECTIVES:

- The objective is to provide students with a conceptual framework of Event Management, Event Services, Conducting Event and Managing Public Relations
- To make the students aware about the different events.

OUTCOMES:

- To learn the concepts related to various events.
- Awareness on the process of conducting events.
- Planning and Budgeting of the events.

Intelligence for Excellence

Unit I

Self Intelligence: Intelligence: Definition and Meaning – Intelligence cycle- Self Intelligence: Personality - Strategic thinking - Lateral Thinking- Emotional Intelligence: Self awareness - Motivation – Self regulation- Social awareness – Empathy - Decision making: meaning-methods-types and steps in making effective decision making

Unit II

Multiple Intelligence: Meaning and types of Multiple intelligence- Successful Intelligence Meaning and types of Successful Intelligence-Creative Intelligence- Practical Intelligence - Analytical Intelligence.

Unit III

Interpersonal intelligences: Definition- Meaning and development of interpersonal intelligence – Interpersonal intelligence and career advancement- Negotiation: Definition and meaning – Principles involved in negotiation – methods of negotiation- Conflict: Definition and meaning – sources of conflicts – types of conflicts - conflict management; Change: Definition and meaning– Types of change – Handling of change – Balancing work and Life

Unit IV

Social Intelligence: Meaning and Dimensions of Social Intelligence- Situation- Presence – Authenticity – Clarity-Empathy -Spiritual Intelligence: Meaning-Competencies and skills of spiritual intelligence

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Unit V

Environmental Intelligence: Understanding and caring of Natural Resources- Food- Land- Forest Mineral- Water and Energy- **Pollution: Types: Air Pollution, Water Pollution, Noise Pollution, Thermal and Radiation; Specific Absorption Rate (SAR) values; Issues affecting environment: Population growth – Deforestation- Globalization - Sustainable development: meaning, process, concrete action plans for sustainability.**

TEXT BOOK:

1. Karl Albrecht(2006)," *Social intelligence: The new science of Success*", John Wiley & Sons.
2. Robert J Sternberg(2000)," *Successful Intelligence*", Magna Publishing Co Ltd.

REFERENCE BOOK:

1. Daniel Goleman(1995)," *Emotional Intelligence*", Bantom Books.
2. Dorathy A Sisk and Dr Paul Torrence(2001)," Spiritual InteRligence", Creative Education Foundation.

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ADD –ON COURSES

CERTIFICATE COURSE IN

INTELLIGENCE FOR

EXCELLENCE

2022-2023

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DEPARTMENT OF MANAGEMENT

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Signature of the Applicant

SUBMISSION OF APPLICATION FORM

Submit your application form in person to the coordinators, school of commerce and Business and Management. PRIST University Thanjavur, vallam,-613403.

APPLICATION MAY BE SEND TO COURSE CO-ORDINATOR:
Prof.K.Sathya
Head of the department
PRIST University, Thoraiyur, Thanjavur

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PRIST UNIVERSITY

ADD -ON COURSES

CERTIFICATE COURSE IN

INTELLIGENCE FOR EXCELLENCE

2022-2023



INTRODUCTION

Process intelligence uses advanced analytics to assess business processes and workflows to identify bottlenecks, inefficiencies and areas for improvement. It roadmaps how processes are executed by collecting, analyzing and interpreting data from multiple applications across various functions.

IMPORTANCE OF INTELLIGENCE FOR EXCELLENCE

Excellence differentiates extraordinary people from ordinary people. Those who strive for excellence will have longevity in their endeavors. It is both the yardstick and the benchmark. When you benchmark against other achievers, you tend to improve and grow.

OBJECTIVES OF PROGRAM

Process Excellence (PEX) Process Excellence is concerned with making processes more efficient and effective through design and testing. The main goal is to deliver consistent, positive outcomes with minimal variation (which Six Sigma tackles) and waste (which Lean deals with).

DURATION OF PROGRAM

45 Hours add on certificate course

PROGRAM OUTCOME

PO 1 To learn the concepts related to various events.
PO2- Awareness on the process of conducting events.
PO3 -Planning and Budgeting of the events.
PO4 -Develop critical thinking skills in students

ELIGIBILITY CRITERIA AND FEE STRUCTURE

Any graduate shall be eligible for the admission to the course

CERTIFICATION :

The candidates successfully qualification

The course shall be awarded a certificate to that effect in the appropriate form by School of Commerce and Business Management, Department of Commerce, PRIST University, Thanjavur-Vallam.

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PRIST UNIVERSITY

Academic year: 2022-2023

Course- Certificate Course in Internet of Things

Subject Code: 2261IT

AIMS: To emphasis Better performance in Internet things

COURSE OBJECTIVES

- To help students understand the intricacies of Internet things
- To familiarize them with financial concepts and economic issues
- To train students in the techniques of business reporting.

OUTCOMES:

- Students will be able to develop an appropriate portfolio for a given investor and market conditions.
- Students will be able to use adjusted financial statements to produce a sound valuation of a company.

Unit I:

IOT Concepts

Introduction and meaning – definition – fundamentals – importance – objectives – need - How does it work? - Emergence of IOT - advantages and disadvantages of IOT, Technologies that led to evolution of IOT.

Unit II:

Security, Privacy and Challenges in Internet of Things

Design Challenges - Development Challenges - Security Challenges - Privacy challenges - Other challenges - Trust management.

Unit III: Emergence of IoT and New Applications

Emergence of IoT – Home - Healthcare - Agriculture - Military - Politics – Construction - other Areas . Relevance of IOT for the future: IOT in everyday life - Internet of Everything - IOT and Individual Privacy.

Unit IV:

Smart city using IoT Integration

Smart city - emergence - dimensions - adoption for automation - design strategies - factors - IoT for smart cities (case study Smart city Barcelona).

Unit V:

IOT in Indian scenario

Emergence of IOT in India - IOT and Aadhaar - IOT for health services - IOT for financial inclusion - IOT for rural empowerment.

Reference Books:

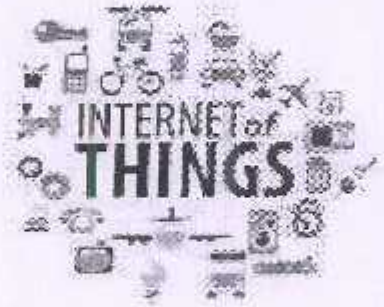
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(Institution deemed to be University-
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Thanjavur-613 403, Tamil Nadu, India

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ADD-ON COURSES

CERTIFICATE COURSE IN INTERNET THINGS

2022-2023



HOD
Department of Business Management
Pannaiyan Ramaiyam Institute of
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THANJAVUR-613 403

INTRODUCTION

The Internet of Things (IoT) describes the network of physical objects—"things"—that are embedded with sensors, software, and other technologies for the purpose of connecting and exchanging data with other devices and systems

IMPORTANCE OF INTERNET THINGS

In addition to offering smart devices to automate homes, IoT is essential to business. It provides organizations with a real-time look into how their systems really work, delivering insights into everything from the performance of machines to supply chain and logistics operations.

OBJECTIVES OF PROGRAM

Data Management plane handles all functions related to a virtual shared data ecosystem, in which data are acquired, delivered and processed to provide key data-related functions. These include data interoperability, provenance, fusion and aggregation, but also content-independent functions, such as resilience (e.g., redundancy). Security functions for access grants and trust management also belong to this plane. Moreover, this plane is empowered by semantics and might be supported by judiciously selected DLT.

DURATION OF PROGRAM

45 Hours add on certificate course

PROGRAM OUTCOME

PO-1 This course covers all essential topics that will enhance the knowledge of students in internet things.

PO-2 It covers topics related to the basics of information their role and structure, different types of Schemes and their features

PO-3 This course discuss the various services offered to prevent and prospective investors.

ELIGIBILITY CRITERIA AND SELECTION

Any graduate shall be eligible for the admission to the course.

CERTIFICATION:

The candidates successfully qualification

The course shall be awarded a certificate to that effect in the appropriate form by School of Commerce and Business Management, Department of Commerce, PRIST University, Thanjavur-Vallam.

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ACADEMIC YEAR
2022-2023

SCHOOL OF COMMERCE AND MANAGEMENT

DEPARTMENT OF COMMERCE

PRIST/C&M/22-23/3.2

This is to inform all commerce students that the value added course classes for the academic year 2022-2023 odd semester will be commenced from 18.07.2022.Hence requesting all registered students to attend the classes without fail.

COURSE OFFERED:

- Diploma in Event Management
- Certificate Intellectual Property Rights
- Certificate Mutual Fund Operation
- Certificate E-Filling Of Income tax (IRT&TDS)
- Certificate course in GST
- Certificate course in life skills for youth
- Certificate course in preparatory for NET/SET Examination

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Copy To:

Hon'ble Vice Chancellor (for your kind information)
Registrar
Registrar office
Dean
Department file

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[redacted]

OBJECTIVES:

- [redacted]
- [redacted]

OUTCOMES:

- [redacted]
- [redacted]
- [redacted]

UNIT1:

Introduction to events

Event- Meaning of event- Need for Event Management- Realms of Event- Scope of Event- Decision Makers-Event Manager- Technical Staff- Establishing of Policies and Procedures- Developing Record Keeping Systems

UNIT2:

Event management procedure

Principles for holding of event-General Details-Permissions-Policies-Government and Local Authorities- Photographs-Performance License-Utilities-

Fire brigade-Ambulance-Catering-Electricity-Water Taxes-Applicable

UNIT3:

Conduct of an event

Promotion & Planning-Schedule, Organizing-Tables, Assigning Responsibilities, Communication and Budget of Event- Checklist- Computer aided Event Management- Roles & Responsibilities of Event Managers for Different Events.

UNIT4:

Public relations Introductions to Public Relations-Concept- Nature- Importance- Limitations- Media-Types of Media-Media Management-Public Relation Strategy & Planning-Role of Morning boards-Press release-Writings for Public Relations

UNIT5:

Corporate events Planning of Corporate Event ,Job Responsibility of Corporate Event-Organizer, Arrangements-Budgeting-Safety of Guest and Participants-Creating Blue Print-Need for Entertainment for Corporate Event-and Reporting.

BOOKS FOR REFERENCE:

1. Event Entertainment and Production -Author: Mark Sonder on: CSEP Publisher: Wiley & Sons Inc.
2. [redacted]
3. [redacted]
4. K Venkataramana, Event Management, SHBP.

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ODD SEMESTER

DIPLOMA

IN

EVENTMANAGEEMINT

2022-2023

ABOUTUNIVERSITY:

PRIST University, Pennalyah Ramajayam Institutions, made a foray into the Academic Domain, with the establishment of Sri Ram Institute of Computer Science and Technology in 1985. Over time, various institutions of higher learning such as Arts and Science College, commerce and business management College of Engineering and Technology, College of Education, Research Institution, Polytechnic college geared add feathers to the PRIST crown.

DEPARTMENTOFCOMMERCE

The department of commerce and business managementwasestablishedintheyear2008,withcommerce eDepartment focused on research and education differentcourseslikeUndergraduate/Postgraduate/M.Phil andPh.D programs offered. In this department there are 19facultymembersProfessor,AssociateandAssistantProf essorsThefacultyoffersB.Com,BBA,M.Com,MBAandres earchprogrammesinAccountancy,Finance, Business administration, Banking & BusinessEconomics, Human Resource Management, Marketing&Management, Retail Management, Family Business &Entrepreneurshipetc

APPLICATIONFORM:

1. FULLNAME_____
2. PROGRAMME_____
3. DISCIPLINE_____
4. INSTITUTIONNAME_____
5. DATE-OFBIRTH_____
6. SEX(F/M)_____
7. E-MAIL_____
8. MOBILENO_____
9. ADDRESS_____

SUBMISSIONOFAPPLICATIONFORM

Submit your application form in person to thecoordinators,schoolofcommerceandBusinessand Management,PRISTUniversityThanjavur,vallam,-613403.

APPLICATION MAYBE SENDTOCOURSECO-ORDINATOR:

Mrs.K.Sathya,
Dean(i/c)of Commerce and Management,
PRIST University ,Thanjavur,

Head
Department of Commerce
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[illegible] SEMESTER

DIPLOMA

IN

EVENT MANAGEMENT

2022-2023



INTRODUCTION

Event Management is the process of analyzing, planning, marketing, producing and evaluating an event. It is a different way of promoting a product, service or idea. If an event is managed efficiently and effectively, it can be used as a very powerful promotional tool to launch or market a product or service.

IMPORTANCE OF EVENT MANAGEMENT

Effective event management can be time-saving as well as money-saving. It saves time in such a manner that event planners already have connections with hotels and venues where an event will take place.

OBJECTIVES OF PROGRAM

The event management process are as

Detect all changes of state that have significance for

the management of [illegible] service Determine the appr

[illegible]

[illegible] the event [illegible] the appropriate re

actions.

DURATION OF PROGRAM

90Hoursaddoncertificatecourse

PROGRAM OUTCOME

Po1toleamtheconceptsrelatedtovariouse vents.

PoAwarenessontheprocessofconductingevents.

Po3-Planningandbudgetingoftheevents.

Po4-Developcriticalthinking Skills in students

CERTIFICATION:

The candidates successfully qualification The course shall be awarded a certificate to that effect in the appropriate form by School of CommerceandBusinessManagement,Department ofCommerce,PRISTUniversity,Thanjavur-Vallam.

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PRIST UNIVERSITY

Academic year 2022-2023

Course Intellectual Property Rights

Subject Code:22613IPR

AIMS: To emphasis better performance in intellectual property rights

OBJECTIVES:

To provide comprehensive knowledge in the area of emerging principles of IPR. Concept and Theories of Intellectual Property Rights, International Regime Relating to IPR

OUTCOMES:

Comprehensive knowledge to the students regarding the effect of IPR especially of patents our emerging issues like public health, climate, Domain Name Disputes and Cyber squatting, Biopiracy etc. and the way to tackle these problems.

UNIT-I

Copyright and Neigh bouring Rights Concept and Principles Historical background and Development of Copyright Law Leading International Instruments, Berne Convention, Universal Copyright Convention, International copyright standard Copyright Act

WIPO Provisions and Performance strategy

UNIT-II

Terms of Copyright conditions for grant of copyright, extent of rights exception to copyright protection, for assignment, assignment and licensing Copyright Literary, Dramatic and Musical Works, Sound Recording, Cinematograph Films, Copyright in Computer Programme, Author Special Rights, Right of Broadcasting and performers,

UNIT-III

Copyright Registrar and Copyright Board-Power and Procedure Copyright Societies,
Ownership, Assignment, Licence, Translation of Copyright, Compulsory Licences, Infringement-
Criteria of Infringement, Infringement of Copyright-
Films, Literary and Dramatic works, Importation and Infringement

UNIT-IV

Historical development of the concept of trademark and trademark law-National and International Introduction to Trade marks Need for Protection, Kinds of trademarks
Concept of Well known trademark

UNIT-V

Implications on intellectual property Rights, International & National legal preparedness Application of copyright Act 1957, Scope of protection of computer program Applications of patents to computer technology

Text & References:

- W.R.Cornish, Intellectual Property, Sweet & Maxwell, London (2000)
- Avtar Singh, Competition Law, Eastern Book Company
- Dr.H.K.Saharay, Textbook on Competition Law, Universal Publications
- Brinkhoff (Edited), Patent Cases, Wolters Kluwer
- Hilarry Pearsons & Clifford Miller, Commercial Exploitation of Intellectual Property

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SEMESTER

AND -ON COURSES

CERTIFICATE COURSE
IN
INTELLECTUAL PROPERTY RIGHTS

2022-2023

RIGHTS
INTELLECTUAL
PROPERTY

INTRODUCTION

Introduction of intellectual property rights is a basic guide to the legal rights of individuals or organizations dealt with intellectual property (IP). Intellectual property refers to intangible property that results from creative mental work, such as an invention, design, idea, method, name, or symbol.

IMPORTANCE OF INTELLECTUAL PROPERTY RIGHTS

Our Intellectual Property is often what sets your business apart from the competition and creates a competitive edge that can propel your business forward. Customer loyalty – Creating a brand and/or product that customers grow to love and trust will ensure that customers keep coming back for more

OBJECTIVES OF PROGRAM

IPR provide certain exclusive rights to the inventors or creators of that property, in order to enable them to reap commercial benefits from their creative efforts or reputation. There are several types of intellectual property protection like patent, copyright, trademark, etc

DURATION OF PROGRAM

48 Hours add on certificate course

PROGRAM OUTCOME

PO-1 Learner should be able to demonstrate understanding of basic concepts of IPR.

PO-2Able to differentiate between Trademarks, Trade secrets and GI of goods

PO-3 Able to understand Copyrights, Patents and Industrial Designs..

PO-4 Will gain Knowledge on Cyber law

ELIGIBILITY CRITERIA AND STRUCTURE

Any graduate shall be eligible for the admission to the course.

CERTIFICATION:

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PRIST UNIVERSITY

Academic year: 2022-2023
III SEMESTER
Course: Certificate course in Mutual Fund Operation
Subject Code: 22CIMF

AIMS: To emphasis better performance in mutual fund operation

COURSE OBJECTIVES:

To provide basic knowledge about the Growth and Role of Mutual funds
To understand Investors Protection and Regulation of Mutual funds etc.
Students will be able to understand calculation of the asset value for various mutual funds

OUTCOMES:

- Students will be able to develop an appropriate portfolio for a given investor and market conditions.
- Students will be able to use and justify financial statements to perform basic analysis and valuation of a company

UNIT-I

Introduction: The origin, meaning and growth of Mutual funds - Fund Units Vs shares - Types of Mutual fund schemes - The role of Mutual Funds - Organization of the Fund - Operation of the Fund - Net Asset Value meaning and calculation

UNIT-II

Investors Protection and Mutual Fund Regulation: Investors Rights – Facilities available to Investors – Selection of a Fund - Advantages of Mutual Funds - Deregulation

UNIT-III

Market Imperfection and Investment Risks – The need for Regulation – Regulation and Investors Protection in India

UNIT-IV

Mutual Funds in India – UTI Schemes, SBI Mutual Fund, Other Mutual Funds – Selection of a Fund- Problems on mutual fund returns

UNIT-V

Mutual Funds Industry in India - Issues and Growth - Types and growth pattern of Mutual funds - Reasons for low Growth - Prospects of Mutual Fund Industry

BOOKS FOR REFERENCE:

1. K.G. Sahadevan and M.Thirupurasundari: Mutual funds, data interpretation and Analysis' Prentice Hall of India

2. V.K.Avasthani: Marketing of Financial Services (Himalaya) R.Gordon and Natarajan: Emerging scenario of Financial Services (Himalaya)

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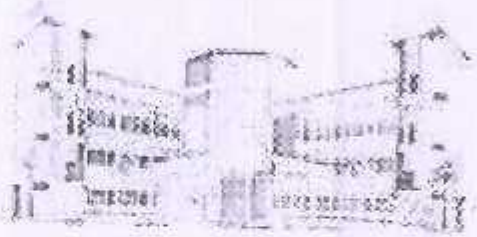
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ODD SEMESTER

CERTIFICATE COURSE IN

MUTUAL FUND OPERATION

2022-2023

ABOUT UNIVERSITY:

PRIST University, Ponnaiyah Ramajayam Institute, made its the Academic Domain with the establishment of No. 1 in Institute of Computer Science and Technology in 1985. Four time, various institutions of higher learning such as Arts and Science College, commerce and business management College of Engineering and Technology, College of Education, Research Institution, Polytechnic college joined together to the PRIST crown.

DEPARTMENT OF COMMERCE

The department of commerce and business management was established in the year 2008, with commerce. Then started to research and education different courses like Undergraduate, Postgraduate M.Phil and Ph.D programs offered in this department there are 19 faculty members (Professor, Associate and Assistant Professor) for faculty wings (B.Com, BBA, [illegible] Finance, [illegible] Corporation, Banking & Insurance, [illegible] Marketing, [illegible] Retail Management, Banking & [illegible]

APPLICATION FORM:

1. FULL NAME:_____
2. PROGRAMME:_____
3. DISCIPLINE:_____
4. INSTITUTION NAME:_____
5. DATE OF BIRTH:_____
6. SEX(F/M):_____
7. E-MAIL:_____
8. MOBILE NO:_____
9. ADDRESS:_____

Signature of the Applicant

SUBMISSION OF APPLICATION FORM

[illegible] application form in person to the office [illegible] Commerce & Management on or [illegible]

REGISTRATION MAY BE SUBJECT TO DISCIPLINARY

Mrs.K.Saliga,
Dept. of Commerce and Management,
PRIST University.

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CERTIFICATION COURSE

IN MUTUAL FUND OPERATION

2022-2023

Mutual Fund



Department of Commerce
Pennaiyah Ramajayam Institute of
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THANJAVUR-613 403.

INTRODUCTION:

A mutual fund is a company that pools money from many investors and invests the money in securities such as stocks, bonds, and short-term debt. The combined holdings of the mutual fund are known as its portfolio.

IMPORTANCE OF MUTUAL FUND OPERATIONS

The principal goal of a mutual fund is to offer diversification. Because a mutual fund invests in other securities and companies, the investor automatically diversifies their portfolio by investing in one

OBJECTIVES OF PROGRAM

Mutual funds offer investors the benefits of diversification, which is achieved by investing across different sectors and asset classes. This helps in reducing the overall risk of the investor and ensuring a well-diversified investment that can provide better returns than are also larger if risk is reduced.

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DURATION OF PROGRAM

45 Hours add on certificate course.

PROGRAM OUTCOME

PO-1 This course covers all essential topics that will enhance the knowledge of studen in Mutual Fund industry.

PO2 It covers topics related to the basics of M utal Funds, their role and structure, differe kinds of Mutual Fund Schemes and its features.

PO-3 This course discusses the vario services offered to present and prospect investors.

ELIGIBILITY CRITERIA AN SELECTION:

Any graduate shall be eligible for ad mission to the course.

CERTIFICATION:

The candidate successfully qualifies in

The course shall be awarded a certificate that effect in the appropriate form by Sch

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Academicyear:2022-2023
ODD SEMESTER

Course- Certificate in E-filling of Income Tax
(IRT&TBS)
Subject Code:2261ET

AIMS: To emphasis better performance in E-Filing of Income Tax.

OBJECTIVES

- To help the students to understood the relevance and significance of Tax.
- To facilitate the students in understanding the various Provisions I.T.Act.

OUTCOME:
The students will understand the procedure for computing taxable income from different heads, clubbing of income, Setoff and carry forward of losses and Deductions applicable to an individual

UNIT I: Income from Capital Gain Capital Gain Meaning-Short term and Long term Capital Gains -Certain Transaction not included as transfer -Cost of Acquisition -Cost of Improvement -Indexation -Capital Gain under different circumstances -Exempted Capital Gains -Computation of Capital Gains Computation of E-Filing methods.

UNIT II: Income from other sources Computation -Grossing up -Deductions in Computing Income under the head and other related provisions.

UNIT III: Clubbing of Incomes and Setoff Carry forward and Set -Off of losses Clubbing of Incomes under various situations – Deemed Incomes – Simple Problems -on clubbing of incomes -Setoff- Carry forward and setoff of losses.

UNIT IV: Deductions from Gross income Permissible Deductions from Gross Total Income Sec 80C 80CCC 80CCD 80D 80DD 80DDB 80E 80G 80GG 80GGA 80QQB 80RRB.
80U: Assessment of Individual -Computation of Tax.

UNIT V: Income Tax Authorities and Procedure of Assessment Income Tax Authorities – Powers of the Central Board of Direct Taxes (CBDT), Commissioners of Income Tax and Income Tax officers. Assessment Procedures -Self Assessment and (IRT&TBS)

TEXTBOOKS:
1.Naveen Mittal -Principles of Income Tax Law & Practice -Cengage New
Delhi2.T.Srinivasan -Income Tax & Practice-
Vijay Nicole Imprints Private Limited. Chennai UNIVERSITY OF MA

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CERTIFICATE COURSE

IN

E - FILING & INCOME TAX

(ITR & TDS)

2022-2023

Department of Commerce

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ODD SEMESTER

CERTIFICATE COURSE
IN
E - FILING OF INCOME
TAX (IRTA&TDS)

2022-2023



HOD
Department of Commerce
Pennaiyah Ramajayam Institute of
Science & Technology (PRIST)
THANJAVUR-613 403.

INTRODUCTION

E-income filing is the process of submitting tax returns via the internet. It's available from government tax portals, through online preparation software that has been recommended by the Internal Revenue Service (IRS) or their affiliate companies on the IRS site.

IMPORTANCE OF E-FILING OF INCOME TAX

Reduction in time required to file returns. Compared to typical paper filing techniques, filing is electronically streamlines the E-filing with computerized automatic the entered information, eliminating the need for paper-based manual processing.

OBJECTIVES OF PROGRAM

The main objectives of the Income Tax Act are promoting price stability, full employment [illegible] and [illegible].

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DURATION OF PROGRAM

45 Hours add on certificate course

PROGRAM OUTCOME

PO-1 This course covers all essential topics it will enhance the knowledge of students on E and e-filing.

PO-2 It covers topics related to the field of tax and income , their role and effects different kinds of tax procedure and scheme and their features.

PO-3 This course discusses the various services offered in present and prospective filing.

ELIGIBILITY CRITERIA AND STRUCTURE

Any graduate shall be eligible for the admission to the course.

CONCLUSION

The [illegible] successfully [illegible] The course shall be awarded a certificate [illegible]

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Course: CERTIFICATE IN GST
Subject Code: 20021GST

AIMS: To emphasis Better performance than the Over all GST

Objectives:

The Goods and Services Tax (GST) in India is to create a unified and simplified tax system by replacing multiple indirect taxes levied by the central and state governments with a single, comprehensive tax.

OUTCOMES:

From all over study, I concluded that GST has certain positive impacts like GST will also help to build a transparent and corruption free tax administration. GST also has an optional scheme of lower taxes for small businesses with turnover between INR 20 to 50 lakh. It is called the composition scheme.

Unit -I

CGST/SGST - Important terms and definitions under Central Goods and Services Tax Act, 2017 and State Goods and Service Tax Act, 2017, Scope of GST, Meaning and scope of supply, Levy and collection of tax.

Unit - II

CGST/SGST - Time and Value of Supply of goods and or services, Input Tax Credit, Input tax credit Provisions, Registration under CGST/SGST Act, Filing of Returns and Assessment, Deposit of Tax including Payment of tax on reverse charge basis, Refund under the Act

Unit - III

CGST/SGST - Maintenance of Accounts and Records, Composition scheme, Job work and its procedure, Various Exemptions under GST, Demand and recovery under GST, Miscellaneous provisions under GST.

Unit - IV

IGST - Scope of IGST, Important terms and definitions under Integrated Goods and Services Tax Act, 2017, Levy and collection of IGST, Principles for determining the place of supply and IGST in supply of goods and services, Zero rated Supply.

Unit - V

Customs - Role of Customs in International Trade, Important Terms & definitions under the Customs Act, 1962, Assessable Value, Baggage, Bill of entry, Dutiable Goods, Duty Exempted, Foreign going vessel, Aircraft, goods, Import, Import Manifest, Importer, Prohibited Goods, Shipping Bill, Store, Bill of Lading, Export Manifest, Letter of Credit, Land or Border, Basic, Auxiliary, additional or counter veiling, Import duty, Levy of each, Ad valorem, specific duties, Prohibition of Export of Import of Goods and Provisions regarding notified & specified goods, Import of Goods, Tax, Import and Restricted import, type of Import, Import of Cargo, Import of Personal Baggage, Import of Stores.

Suggested readings:

Customs Act 1962 and Rules

Commercial's GST, Commercial law publisher (India) Pvt Ltd, New Delhi

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CERTIFICATE COURSE IN

GST

2022 – 2023

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Pennaiyah Ramajayam Institute of
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THANJAVUR-613 403.

ABOUT UNIVERSITY:

PRIST University, Pennaiyah Ramajayam Institutions, made a foray into the Academic Domain, with the establishment of Sri Ram Institute of Computer Science and Technology in 1985. Over time, various institutions of higher learning such as Arts and Science College, commerce and business management College of Engineering and Technology, College of Education, Research Institution, Polytechnic college are added feathers to the PRIST crown.

DEPARTMENT OF MANAGEMENT

The department of commerce and business management was established in the year 2008, with commerce Dept focused on research and education different courses like Undergraduate/Postgraduate/M.Phil and Ph.D programs offered. In this department there are 19 faculty members (Professor, Associate and Assistant Professor The faculty offers B.Com, BBA, M.Com, MBA and research programmes in Accountancy, Finance, Business administration, Banking & Business Economics, Human Resource Management, Marketing Management, Retail Management, Family Business & Entrepreneurship etc.

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5. DATE-OF-BIRTH _____
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9. ADDRESS _____

Signature of the Applicant

SUBMISSION OF APPLICATION FORM

Submit your application form in person to the coordinators, school of commerce and Business and Management, PRIST University Thanjavur, vallam,-613403.

APPLICATION MAY BE SEND TO
COURSE CO-ORDINATOR:
Dr.T.Jayashalini
Head of the department
PRIST University, Thanjavur, Thanjavur.

DEAN
School of Commerce and Management
Pennaiyah Ramajayam Institute of
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INTRODUCTION

Goods and Services (GST) tax is a "value added tax" that is exacted upon certain domestically sold goods and services and is typically set by the highest levels of government.

Customers paying a Goods and Services Tax will do so at the point of sale and will find it included with in the total cost of the item itself. Sort of like an alternative form of a sales tax.

IMPORTANCE OF GST

The cascading effects of taxes are eliminated. As competitiveness improved across the markets, transaction costs were reduced. Due to easy tax compliance processes, conducting business improved. Due to the uniformity in tax rates and structures, companies can make better business decisions and investments.



OBJECTIVES OF PROGRAM

completion, students can apply economic analysis to evaluate everyday problems.

DURATION OF PROGRAM

45 Hours add on certificate course

PROGRAM OUTCOME

To help the students form a clear idea of Managerial Economics. To enable the students understand determination of price under different market forms. To enable the students understand the situation of consumer and producer equilibrium. To describe the concept of inflation and its consequences in an economy. To illustrate the calculation of national income.

ELIGIBILITY CRITERIA AND FEE STRUCTURE

Any graduate shall be eligible for the admission to the course

CERTIFICATION:

The candidates successfully qualifying the course shall be awarded a certificate to that effect in the appropriate seal by selected commerce and Bankers Management Department of Commerce, PRIST University, Thanjavur, Vallam

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PRIST UNIVERSITY

Academic year: 2022-2023

Course: Certificate Course in Life Skills for Youth

Subject Code: 2261LSY

AIM: To emphasis Better performance in life skills for youth

OBJECTIVES:

- The Life Skills Education aims to reinforce existing knowledge and positive attitudes and values along with the prevention of negative attitudes and risky behaviors.
- Life Skills Education contributes to the promotion of personal and social development and the prevention of health and social problems.

OUTCOMES:

- Gain Self Competency and Confidence.
- Practice Emotional Competency.
- Gain Intellectual Competency
- Gain an edge through Professional Competency.

Unit-I

Understanding Life Skills: Life Skills: Meaning; Need for life skills, Different approaches to life skills.

Unit- II

Key Issues Related with Adolescents Managing Emotions: Meaning, Handling conflicts, Building relationships.

Unit- III

Core Strengthening Life Skills-I Professionalism (grooming and self-respect), Positive attitude, Motivation, Ability to learn.

Unit -IV

Core Strengthening Life Skills-II Communication skills, Teamwork, Interpersonal skills, Critical thinking and problem solving.

Unit -V

Knowing Yourself Building self-esteem, removing the negatives, Setting Goals for the Life

BOOKS FOR REFERENCE:

- Dr. Rajeshkumar T. Bhatt – Life Skill Education – Neelam Press-2017
- Dr. Lalita K. Sharma – Life Skill Education in India – Kaya Publications-202

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PRIST UNIVERSITY

Academic year: 2022-2023
Certificate Course in Preparatory for NEET/JEE Examination
Subject Code: 23618SE

AIMS: To make concept of any topic, the main aim is for clearing doubts, testing and remediation

COURSE OBJECTIVES:

- To help the students to choose the area where they are interested
- To develop competitive skills through various types of objective tests
- To train them by conducting aptitude test based on verbal and quantitative skills
- To enhance their ability to speak in English and face an interview

OUTCOMES:

- Confidence level of the students will be improved while appearing for the exams and for various placement drives.
- Students will ready to face various competitive examinations positively
- Students will do time management while preparing for the competitive exams

Unit 1: Business Environment and International Business

- Concepts and elements of business environment; Economic environment- Economic systems, Economic policies-(Monetary and fiscal policies); Political environment- Role of government in business; Legal environment- Consumer Protection Act, FEMA; Socio-cultural factors and their influence on business; Corporate Social Responsibility (CSR)
- Scope and importance of international business; Globalization and its drivers; Modes of entry into international business
- Theories of international trade; Government intervention in international trade; Tariff and non-tariff barriers; India's foreign trade policy
- Foreign direct investment (FDI) and Foreign portfolio investment (FPI), Types of FDI, Costs and benefits of FDI to home and host countries; Trends in FDI, India's FDI policy
- Balance of payments (BOP); Importance and components of BOP

Unit 2: Business Economics

- Meaning and scope of business economics - Objectives of business firms
  Demand analysis; Law of demand; Elasticity of demand and its measurement; Relationship between AR and MR
- Consumer behavior: Utility analysis; Indifference curve analysis - Law of Variable Proportions; Law of Returns to Scale
- Theory of cost: Short-run and long-run cost curves
- Price determination under different market forms: Perfect competition; Monopolistic competition; Oligopoly- Price leadership model; Monopoly; Price discrimination
- Pricing strategies: Price skimming; Price penetration; Peak load pricing

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Unit 3: Business Finance

- Scope and sources of finance, Lease financing
- Cost of capital and time value of money
- Capital structure
- Capital budgeting decisions: Conventional and scientific techniques of capital budgeting analysis
- Working capital management; Dividend decisions: Theories and policies
- Risk and return analysis; Asset securitization

Unit 4: Business Statistics and Research Methods

- Research: Concept and types; Research designs
- Data: Collection and classification of data
- Sampling and estimation: Concepts; Methods of sampling - probability and nonprobability methods; Sampling distribution; Central limit theorem; Standard error; Statistical estimation
- Hypothesis testing: z-test; t-test; ANOVA; Chi-square test ; Mann-Whitney test (U-test); Kruskal-Wallis test (H-test); Rank correlation test
- Report writing

Unit 5: Marketing Management

- Marketing: Concept and approaches; Marketing channels; Marketing mix; Strategic marketing planning; Market segmentation, targeting and positioning
- Product decisions: Concept; Product lines; Product mix decisions; Product life cycle; New product development
- Pricing decisions: Factors affecting price determination; Pricing policies and strategies
- Promotion decisions: Role of promotion in marketing; Promotion methods - Advertising; Personal selling; Publicity; Sales promotion tools and techniques; Promotion mix
- Distribution decisions: Channels of distribution; Channel management.

Books for Reference:

- RPH Editorial Board, UGC NET/JRF Exam- Commerce – Paper II, Ramesh Publishing House,New Delhi.
- Dr. L.N. Kali and Madan Singh, UGC (NET / SET / JRF) Upkar Prakashan, 2018th edition 1 January 2018
- Prabhgeet Parpan, UGC NET/JRF Exam Solved Papers Commerce, Upkar Publishing House, 2018
- R. Gupta, UGC-NET: Commerce (Paper II), National Testing Agency 2018

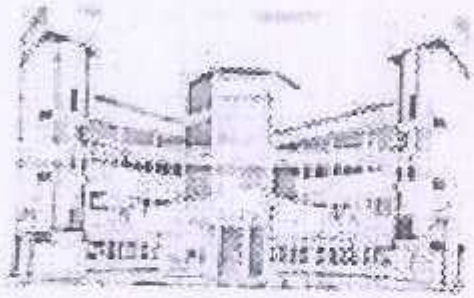
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PRIST UNIVERSITY



ADD -ON COURSES

Certificate Course In Life Skills for Youth

2022-2023

ABOUT UNIVERSITY:

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APPLICATION MAY BE SEND TO COURSE CO-ORDINATOR:
Mrs. K.SATHYA,
Deanf(c) of Commerce and Management
PRIST University, Thanjavur.

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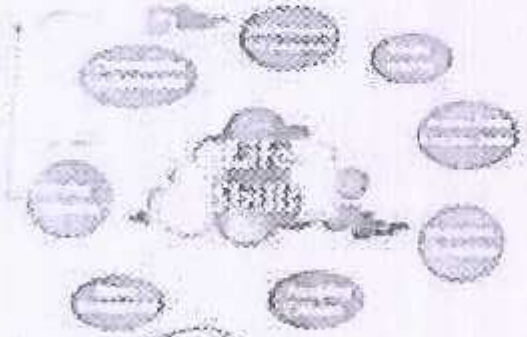
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PRIST UNIVERSITY

ADD-ON COURSES

Certificate Course In Life Skills for Youth

2022-2023



INTRODUCTION

These life skills include problem solving, critical thinking, communication skills, decision-making, creative thinking, interpersonal relationship skills, self awareness building skills, empathy and coping with stress skills.

IMPORTANCE OF LIFE SKILLS FOR YOUTH

Life skill education teaches students how to make informed and reasonable decisions about their lives. It improves a person's ability to meet social goals and demands, as well as helps them deal with a variety of situations.

OBJECTIVES OF PROGRAM

- The Life Skills Education aims to reinforce existing knowledge and positive attitudes and values along with the prevention of negative attitudes and risky behaviours.
- Life Skills Education contributes to the promotion of personal and social development and the prevention of health and social problems.

DURATION OF PROGRAM

45 Hours add on certificate course

PROGRAM OUTCOME

PO-1 Gain Self Competency and Confidence

PO-2 Practice Emotional Competency.

PO-3 Gain Intellectual Competency.

PO-3Gain an edge through Professional Competency.

ELIGIBILITY CRITERIA AND FEE STRUCTURE

Any graduate shall be eligible for the admission to the course.

CERTIFICATION:

The candidates successfully qualification

The course shall be awarded a certificate to that effect in the appropriate form by School of Commerce and Business Management, Department of Commerce, PRIST University, Thanjavur- Vallam.

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ADD-ON COURSES

Certificate Course in Preparatory for NET/SET Examination

2022-2023

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PRIST UNIVERSITY

ADD-ON COURSES

Certificate Course in Preparatory for NET/SET Examination

2022-2023

Department of Commerce
Competitive Exams

HOD
Department of Commerce
Ponnaiyah Ramajayam Institute of
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THANJAVUR-613 403

INTRODUCTION

NET and SET exams are annual assessments to establish eligibility for aspiring Assistant Professors or lecturers. The National Eligibility Test (NET) operates nationally, determining candidates' qualifications for Assistant Professor roles or Junior Research Fellowships (JRF) across Indian universities.

IMPORTANCE OF NET/SET

It is crucial to assess the eligibility of candidates for research fellowships, specifically the Junior Research Fellowship (JRF) and Senior Research Fellowship (SRF), enabling them to pursue doctoral programmes and contribute to research endeavors within public research institutions across the country.

OBJECTIVES OF PROGRAM

- UGC NET/SET stands for University Grants Commission National Eligibility Test.
- It is one of the biggest exams in the country, held biannually.
- The exam is conducted to ascertain candidates' eligibility for Lectureships and Junior Research Fellowships.

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DURATION OF PROGRAM

45 Hours add on certificate course

PROGRAM OUTCOME

PO-1 Programme learning outcomes will include subject-specific skills and generic skills, including transferable global skills and competencies.

PO-2 the achievement of which the students of a specific programme of study should be able to demonstrate for the award of the certificate Diploma Degree qualification.

ELIGIBILITY CRITERIA AND STRUCTURE

Any graduate shall be eligible for the admission to the course.

CERTIFICATION:

The candidates successfully qualification

The course shall be awarded a certificate to that effect in the appropriate form by School of Commerce and Business Management, Department of Commerce, PRIST University, Thanjavur-Vallam.

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SCHOOL OF ARTS AND SCIENCE

DEPARTMENT OF BIOTECHNOLOGY

PRIST/A&S/BT/22-23/3.1 **14.07.2022**

This is to inform all Biotechnology students that the value added courses classes for academi year 2022-23 odd semester will be commenced from 18.07.2022. Hence requesting all registered students to attend the classes without fail.

1. Certificate course on Medical Laboratory Technician
2. Certificate course on Spirulina Cultivation
3. Diploma course on Fermentation Technology
4. Certificate course on Aquaculture Technology
5. Certificate course on Renewable energy
6. Certificate course on Bioinformatics
7. Certificate course on Molecular Docking
8. Certificate course on Patent law
9. Certificate course on Enzyme Production

HOD

Head of the Department
Department of Biotechnology
School of Arts & Science
PRIST Deemed to be University, Thanjavur.

DEAN
Dean
School of Arts & Science
Ponnaiyah Ramajayam Institute of
Science & Technology (PRIST),
Deemed to be University
Vallam, Thanjavur - 613 403.

Copy to:

1.Hon'ble Vice Chancellor (for your kind information)

2.Registrar

3.Registrar office

4.Dean

5.Department file

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DEPARTMENT OF BIOTECHNOLOGY

Certificate course on

MEDICAL LABORATORY TECHNICIAN

SYLLABUS

SUBJECT CODE: 22517MT **Total: 45 hours**

Course objectives:

- To provide students with comprehensive knowledge of various laboratory techniques, including microbiology, biochemistry, clinical pathology, serology, and he[illegible]ogy.
- Students learn how to conduct diagnostic tests, interpret test results, and maintain laboratory equipment and supplies.

Course Outcomes:

- Perform routine clinical laboratory procedures within acceptable quality control parameters in Hematology, Chemistry, Immunohemostology, and Microbiology under the general supervision of a Clinical Laboratory Scientist or Pathologist.
- Demonstrate technical skills, social behavior, and professional awareness incumbent upon a laboratory technician
- Operate and maintain laboratory equipment, utilizing appropriate quality control and safety procedures.

UNIT 1 **(9 hours)**

Anatomical terms & Anatomical Positions, Different parts of the human body, Tissue with Function & Classification, Genito- Urinary System - Male & Female Reproductive Organs System, Urinary Bladder, Kidney and Ureter, Penis & Urethra

UNIT 2 **(9 hours)**

Morphology and Staining of Bacteria, Bacteriological Examination of Pus, Abscess and wounds, Isolation and Inoculation recording Techniques, Biochemical Test

UNIT 3 **(9 hours)**

Introduction of Haematology, Collection of Blood, Estimation of Haemoglobin, Anticoagulation, MCV,MCH & MCHC & its Importance, Total Platelet Count, Urine Analysis, Semen Analysis

UNIT 4 **(9 hours)**

ABO & Rh Blood Group System, Blood Transfusion and its Reactions, Administration of Blood Bank

UNIT 5 **(9 hours)**

Microscope-Principal, Operation, care and use, Sterilization: General Principal and Classification, First Aid and Safety Measures, Collection preservation and Storage of different body fluids

REFFERENCE

1. Godkar P.B, Textbook of MLT, 2nd edition, Bhalani Publications
2. Mukherjee K. L., Medical Laboratory Technology, Vol 1-3, 3rd edition, Tata McGraw Hill
3. Wintrobe's Clinical Hematology, 14th edition, Lippincott Williams & Wilkins
4. Dacie Ghoshy's Clinical Haematology in Medical Practice, Sixth edition, Wiley Publications
5. Dacie J.V & Lewis S.M. Practical Haematology. The English Language Book Society, 8th ed., Elbs
6. Mark K. Hung, Brenda J. Grossman, Christopher D. Hillyer, Connie M Westhoff, Technical Manual, 18th ed. AABB.

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DEPARTMENT OF BIOTECHNOLOGY

Certificate course on

SPIRULINA CULTIVATION

SYLLABUS

SUBJECT CODE: 22517SC **Total: 45 hrs**

Course objectives:

- To introduce fundamental concepts and methods of spirulina cultivation
- To train the students in comprehensive spirulina production and post production
- To make the students become an entrepreneur

Course Outcomes:

- Will prepare students to understand the spirulina cultivation techniques
- It will also help students to learn the application of spirulina
- Will prepare students to understand the problems of farmers and learn to tackle them with recent Biotechnological advances.

UNIT 1 **(9 hours)**

Introduction to SCP production – historical use and rediscovery of Spirulina, importance, morphology, taxonomy and habitat of Spirulina

UNIT 2 **(9 hours)**

Biochemical composition – amino acids, unsaturated fatty acids and lipids, minerals, vitamins, pigments, carotenoids and phycobiliproteins. Chelating of toxic minerals.

UNIT 3 **(9 hours)**

Cultivation and production of spirulina -Natural production –Nutritional media ,small scale commercial production – commercial and mass cultivation (pond construction, culture medium, strain selection, scaling up of the process)

UNIT 4 **(9 hours)**

Importance of light and pH in Spirulina cultivation –Harvesting and processing drying and packing

UNIT 5 **(9 hours)**

Products, uses and benefits -Spirulina and its use by humans-immune system enhancement,nutritional supplements, Food source, Food safety aspects related to human consumption of spirulina, Spirulina and agriculture - nutritional supplement, a colourant

REFERENCES:

1. Avigad Vonshak, Spirulina platensis (Arthrospira) Physiology, cell-biology and biotechnology, Taylor & Francis Ltd, 2, Setvendran D. 2015.
2. Large Scale Algal Biomass (Spirulina) Production in India. In: D. Das (Ed.) Algal Biorefinery: An Integrated Approach, Springer.
3. Habib M.A.B., Parvin M., Huntington T.C., and Hasan M.R. 2008. A review on culture, production and use of Spirulina as food for humans and feeds for domestic animals and fish. FAO Fishers and Aquaculture Circular No. 1034, FAO, Rome, Italy

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DEPARTMENT OF BIOTECHNOLOGY

Diploma course on

FERMENTATION TECHNOLOGY

SYLLABUS

SUBJECT CODE: 22517FT **Total: 90 hours**

Course objectives:

- To study the design and construction of fermentor and parameters to be monitored and controlled in fermentation process
- To study the principle of sterilization necessary for fermentation
- To study the cell growth and product formation
- To evaluate the kinetics and mechanism of microbial growth

Course outcomes:

- This subject puts emphasis on the basic engineering principles of Fermentation Technology.
- It also highlights the application of fermentation in biotechnological industry.

UNIT I: Introduction to fermentation **(18 hours)**
Introduction to fermentation; History and development of fermentation industry; General requirements of fermentation processes; Isolation, preservation and improvement of industrially important micro-organisms.

UNIT II: Preparation of microorganisms (microbial cells) for fermentation. **(18 hours)**
Development of inoculum for industrial fermentations; Kinetics of microbial growth and death; Air and media sterilization

UNIT III: Basic design of fermentor **(18 hours)**
Fermentor; Basic design and construction of fermentor and ancillaries; Different types of fermentations

UNIT IV: Types of fermentation process **(18 hours)**
An overview of aerobic and anaerobic fermentation processes and their application in the biotechnology industry solid-substrate fermentation and its applications.

UNIT V: Measurement of Parameters **(18 hours)**
Measurement and control of bioprocess parameters Analysis of batch, fed-batch and continuous bioreactions; Bioreactor configuration - batch, continuous stirred-tank, tubular, plug flow, packed bed, air lift, fluidized bed

REFERENCES:

1. Murray Moo -Young , Comprehensive Biotechnology, Vol. I & III-latest ed.
2. Microbes & Fermentation, A. Lel and Kothers Richard J. Mickey, Griffin Publication
3. Industrial Fermentations- Leland, N. Y. Chemical Publishers.
4. Prescott and Dunn's- Industrial Microbiology, 4 th, ed.

Head of the Department
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DEPARTMENT OF BIOTECHNOLOGY

Certificate course on

AQUACULTURE TECHNOLOGY

SYLLABUS

SUBJECT CODE: 22SI7AT **Total: 45 hours**

Course objectives:

- To meet the academic to provide knowledge for sustainable aquaculture
- To expose learners to frontier and thrust areas of Aquaculture
- To provide the learners an experience in research for Aquaculture production

Course outcomes:

- Identify and understand different types of fishes and fin fish anatomy
- Understand the Aquatic environment and Aquatic ecosystem
- Understand the Classification of Fishes and Distribution
- Understand the Food and Feeding Habits.

UNIT 1 **(9 hours)**

Definition of ecology, organism and environment; features of organism - environment relations; living and non-living environments; the ecosystem or habitat

UNIT 2 **(9 hours)**

Basic structure of the skin in fishes; epidermal derivatives – mucocordges and integumentary glands; dermal derivatives – cosmoid scales, ganoid scales, placoid scales, elasmoid, cycloid and ctenoid scales; fish age and scales; integumentary pigments; mouth and jaws; gill slits; fins – median fins and paired fins; origin of paired fins; coloration

UNIT 3 **(9 hours)**

Types of food – basic food, secondary food, incidental food, obligatory food; feeding habits; – detritivores, scavengers, herbivores, omnivores, carnivores; surface feeders, column feeders, bottom feeders; monophagic, stenophagic and euryphagic fishes; seasonal changes in food availability and food preferences

UNIT 4 **(9 hours)**

Reproduction – ovary and testes, structure, development of primary and secondary sexual & Sexual dimorphism in fishes. Endocrine organs in fishes - Pituitary gland, thyroid gland, adrenal gland, Urohypophysis, pancreatic islets and pineal organs.

UNIT 5 **(9 hours)**

Microbial infections of Bacteria, Viruses, fungi and algae- pathogenicity and virulence-source of infection-morphological, physiological and sociological diagnosis-microbiological water quality management- application of drugs, chemicals and antibiotics.

Microbial infections of Bacteria, Viruses, fungi and algae- pathogenicity and virulence-source of infection-morphological, physiological and sociological diagnosis-microbiological water quality management- application of drugs, chemicals and antibiotics.

REFERENCES:

1. Jingaran, V.G. 1991. Fish and Fisheries of India. Hindustan Publ.Corporation (India).
2. Lagler, K. F., J. E. Bardach and R. R. Miller. 1977. Ichthyology. John Wiley
3. Misra, P. S. 1995. Fishes: An introduction to Ichthyology. 3/E.S. Nagabha Publishing House. New Delhi.
4. Talwar, P. K. and V. G. Jhingran. 1991. Inland Fishes of India and Adjacent Countries. Vol. I & II. Oxford and IBH Publishing Co.
5. Halver, J. E. 1972. Fish Nutrition. Academic Press, New York. J. Sent, S. De Silva and Trevor A. Anderson, Fish Nutrition in Aquaculture. Chapman & Hall London. 1998, p.319. New Delhi.

Head of the Department
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Vallam, Thanjavur-613 403.

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DEPARTMENT OF BIOTECHNOLOGY

CERTIFICATE COURSE SYLLABUS

ACADEMIC YEAR 2022-2023

RENEWABLE ENERGY

Subject code: 22517REV

Course Outcome

1. To Understand the Need, importance and scope of non-conventional and alternate energy resources.
2. To understand role significance of solar energy, Wind Energy.
3. To get the utilization of Biogas plants and geothermal energy
4. To understand the concept of energy Conservation and applications.

Unit I: ENERGY SYSTEM

Solar Radiation Flat Plate and Concentrating Collectors, Solar Direct Thermal Applications, Solar Thermal Power Generation, Fundamentals of Solar Photo Voltaic Conversion, Solar Cells, Solar PV Power Generation, Solar PV Applications. Wind Energy Estimation, Types of Wind Energy Systems, Performance, Site Selection, Details of Wind Turbine Generator, Ocean Thermal Energy Conversion (OTEC), Principle of operation, development of OTEC plants, Tidal and wave energy, Potential and conversion techniques, mini-hydel power plants.

Geothermal Energy: Resources, types of wells, methods of harnessing the energy, scope in India.

Unit II: Fuel Technology

Principles of combustion, Solid, Liquid and Gaseous fuels, Coal as source of energy and chemicals, Coal preparation, Carbonization, Gasification and Liquefaction of coal and lignite, Petroleum and its derived products, Inter conversion of fuels, Natural gases and derivatives, Sources and Potential, combustion equipment for solid, Liquid and gaseous fuels, Nuclear fuel and technology.

Unit III: Thermo-chemical conversions: Direct Combustion, Technology of Biomass gasification, Pyrolysis and Liquefaction, Bio-Chemical Conversion: anaerobic digestion, alcohol production from biomass, Chemical conversion process: hydrolysis and hydrogenation.

Unit IV: Biomass Gasifiers: History, Principle, Design of Biomass Gasifiers, updraft gasifier, down draft gasifier, zero carbon biomass gasification plants, Gasification of plastic-rich waste, applications for cooking, electricity generation, Gasifier Engines, Operation of spark ignition and compression ignition engine with wood gas, methanol, ethanol and biogas, Biomass integrated gasification/combined cycles systems.

Unit V: Bio-Energy Systems with Efficient Applications: Traditional Stoves, Energy Efficient Cooking and Space heating Stoves, Metal Stoves Improved Gasifier Stoves, Pollution due to smoke emissions, Biogas Systems: Technology of Bio-gas production, Biogas Plants , Digester

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types. Digester design. Dung, Vegetable Waste, Night Soil and Municipal Waste based Bio-gas plants. Application of Bio gas slurry in agriculture.

Text Books:

1. Renewable energy resources. Tiwari and ghosal, Narosa publication.
2. Non conventional Energy Sources,Khanna Publication

Reference Books:

1. Renewable Energy Sources:Twidell& Weir, CRC Press.
2. Solar Energy/ S.P. Sukhatme, Tata McGraw-Hill.
3. Non Conventional Energy Systems: K. M. Mittal, A H WheelerPublishing Co Ltd.
4. Renewable Energy Technologies: Ramesh & Kumar, Narosa publication.
5. Biomass Energy, Oxford &IBH Publications Co.

HOD

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School of Art. & Science
Ponnaiyah Ramajayam Institute of Science & Technology

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DEPARTMENT OF BIOTECHNOLOGY

CERTIFCATE COURSE SYLLABUS

ACADEMIC YEAR 2022-2023

BIOINFORMATICS

Subject code: 21517BIF

Course outcome

1. Students know the creation and advancement of databses, softwares, computational and statistical techniques and theory to solve problems generated from the manageness and analysis of biological data.
2. Student to understant the computational biology - hypothesis based investigation of a specific biological problem using computers, carried out with experimental or simulated data, with the primary goal of discovery and the advancement of biological knowledge.
3. Bioinformatics solves the following problems and put more emphasis on understanding the disease related problems at molecular level.
4. Protein sequencing, Nucleic acid sequencing and their analysis. Find proteins their interaction, activity, modification and function.
5. Elucidation of function of a molecule based on its structure. Gene expression, analysis, prediction and establish genomic library. Find homology for studying evolutionary relationship among different species. Molecular modeling and molecular dynamics methods to study structure from sequence.

UNIT I:

Nucleotide Sequence Databases And Analysis, Goals of the Human Genome Project, cloning vectors, concept of maps, physical maps, shotgun libraries, DNA polymorphism, nucleotides, DNA sequences, Sequence databases: GeneBank, EMBL Nucleotide sequence databank.

Unit-II

Database formats - Recombinant DNA technology, restriction enzymes, resource for restriction enzyme (REBASE), similarity search, Polymerase chain reaction, primer selection for PCR, BLASTn, applications of BioEdit.

Unit-III

Proteomics classification, Tools and techniques in proteomics: 2-D gel electrophoresis, gel filtration, PAGE, isoelectrick focusing, affinity chromatography, HPLC, ICAT, fixing and spot visualization, Mass spectroscopy for protein analysis, MALDI-TOF, Electrospray ionization (EST), Tandem mass spectroscopy (MS/MS) analysis, tryptic digestion and peptide fingerprinting (PMF).

UNIT-IV

Biodiversity Informatics- Definition, genetic diversity, species diversity, ecosystem

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diversity. Biodiversity over geographic scales, α-diversity, β-diversity, γ-diversity. Distribution of biodiversity, hotspots of biodiversity, ecological and economic role of biodiversity, scientificrole and environmental economics.

UNIT-V

Applications Of Bioinformatics In Various Fields: Environment, biotechnology, molecular biology, neurobiology, agriculture, drug designing, biomedical genome medicines, medicalmicrobiology.

References:

1. Introduction to Bioinformatics. (Atwood, T. K. and Parry-Smith, D. J).
2. An introduction to Computational Biochemistry. (C. Stain Tsai, A. John Wiley and Sons, Inc., publications).
3. Bioinformatics: Methods and applications: Genomics, Proteomics and Drug Discovery; (Rastogi, S. C. and Mendiratta and Rastogi, P.
4. Bioinformatics: A practical guide to the analysis of genes and proteins.; Edited by, Andreas D. Baxevanis and Francis Oulelette.

HOD

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Dr. L. GRIGORIOUS

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DEPARTMENT OF BIOTECHNOLOGY

CERTIFICATE COURSE SYLLABUS

ACADEMIC YEAR 2022-2023

MOLECULAR DOCKING

Subject code: 20517MDG

COURSE OBJECTIVE

- To learn various software and tools for computer-aided drug designing.
- To make students understand the essential features of the interdisciplinary field of science

UNIT I: Drug Discovery

Historic development of drug discovery. Modern drug discovery. Molecular modelling-drug targets discovery-target identification, Hit and lead identification, lead optimization, principles of drug ability, Role of Bioinformatics in drug design

UNIT II: Molecular Mechanics

Basic Chemistry Review & Drug Discovery - Biomolecular Structure & their Molecular Interactions and Recognition – Introduction to Methods in 3-D Structure Determination and Molecular modeling - Molecular Conformation & Efficacy Sampling Methods for Computer Simulations

UNIT III: Drug – Receptor Interaction

Molecular basis of drug action: Drug Receptor Interactions: Basic ligand concept, agonist, antagonist, partial agonist, inverse agonist, Drug receptor concepts. Enzyme inhibition - enzyme inhibitors - reversible, irreversible, enzyme inhibitors as drugs

UNIT IV: Drug design

Prediction of binding site and virtual screening. Drug design-Structure-based drug design. Ligand based drug design. De novo ligand design. Molecular docking search algorithm, scoring functions. ADMET properties

UNIT V: Molecular Docking

Methods and Tools in Computer-aided molecular design. Molecular Docking- searching Methods - Scoring functions-Protein ligand Interactions- Docking using AUTODOCK- Pitfalls in docking

COURSE OUTCOME

- Apply many bioinformatics tools for various needs in biotechnology
- Identify the drug targets and understand the mode of action
- To know, anticancer and tools for computer-aided drug designing

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1. D. Hamsans and Fenkette - Bioinformatics: A Practical Guide to the Analysis of Genes and Proteins, Wiely Indian Edition, 2001.
2. I.K. Attwood, D.J.gony Smith, Introduction to Bioinformatics, Pearson Education, 1st Edition, 18th Reprint 2005.
3. A. R.Leach - Molecular Modeling Principles and Applications, 2nd edition, Longman Publications, 1996.
4. [illegible] Rajagopalan and Ajay Parasuram and Gangan, Oxford Press, ISBN 978-[illegible]

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Post Graduate Studies

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DEPARTMENT OF BIOTECHNOLOGY

CERTIFICATE COURSE SYLLABUS

ACADEMIC YEAR 2022-2023

ENZYME PRODUCTION

Subject code: 21517EPN

COURSE OUTCOME

- Acquired knowledge about the nomenclature and properties of enzymes.
- Learn about enzyme production and its applications.

UNIT I

Enzyme – Introduction, properties, nomenclature and classification, Applications of enzymes in Industrial, Medical, Analytical, Chemical, Pharmaceutical and Food Sectors.

UNIT II

Industrial applications of enzymes, perspective of use of enzyme in Industry source. Significance and applications of cellulase (cellulose hydrolysis), Proteases (protein hydrolysate), Amylase (maltodextrin preparation), Lipases (oil industry), pectinases (clarification of fruit juices), Laccases (delignification), Aspergillinase

UNIT III

Extremozymes- Microbial source, characteristics and biotechnological significance of extremozymes from thermophiles, psychrophiles, acidophiles, alkalophiles, halophiles. Solvent resistant enzymes: Biosurfactants

UNIT IV

Methods of enzyme production – Isolation of microorganisms, strain development and preservation of microbes, medium formulations, sterilization and inoculation of culture, maintenance of culture and fluid filtration, purification of enzymes, immobilization of enzymes, production and applications of proteases, pectinases, cellulase, amylase.

UNIT V

Microbial enzymes-Commercial microbial enzyme production, detergent enzymes, starch processing enzymes, enzymes in cheese production enzymes in plant juice production, enzymes in textile manufacture, enzymes in leather manufacture, enzymes used in the treatment of wood pulps.

REFERENCE

1. Palmer, T. (2004) Enzymes: Biochemistry, Biotechnology and Clinical Chemistry, Affiliated East West Press Pvt. Ltd., New Delhi
2. Principles of Fermentation Technology by P.F. Stanbury, A. Whitaker and S.J. Hall, Butterworth Heinemann, Aditya Books (P) Ltd.

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3. Industrial Microbiology by A.H. Patel
4. Wiseman, A: Handbook of Enzyme Biotechnology, 3rd Edition, Ellis Horwood Publication

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Dr. L.CHINNAPPA

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CERTIFICATE COURSE SYLLABUS

ACADEMIC YEAR 2022-2023

PATENT LAW

Subject Code: 20517PL

COURSE OUTCOME

1. Students learnt the fundamental aspects of IPR
2. They also gained knowledge on patent, copyright and trademark

UNIT I

Intellectual Property Rights: Introduction and Protection of Intellectual Property, Copyrights, Trademarks, Patents, Designs, Utility Models, Trade Secrets and Geographical Indications. The Paris Convention, Patent Co-operation Treaty, TRIPS, The World Intellectual Property Organization (WIPO) and the UNESCO

UNIT II

Patents - Concept of Patent, Product / Process Patents & Terminology, Duration of Patents- Law and Policy Considerations Elements of Patentability, Novelty and Non Obviousness, Industrial Applications, Non- Patentable Subject Matter.

UNIT III

Patent Law and practice in India: Novelty and Inventive step, Procedure for Filing of Patent Application and types of Applications Procedure for Opposition, Revocation of Patents, Ownership and Maintenance of Patents, Assignment and licensing of Patents, Working of Patents- Compulsory Licensing, Patent Agent- Qualification and Registration Procedure. Patent Drafting, Infringement and Defenses, PCT and Patent Search.

UNIT IV

International Patent Law: American patent law-Patentability Requirements, Eligible subject matter, Application process, Infringement and defenses, America Invents Act, Hatch Waxman Act & FDA, Bayh-Dole Act, Re-examination.

UNIT V:

Standard setting and Technology transfer of Patent Law: Standard setting and patent Law- patent pools, standard essential patents and FRAND. Technology transfer and Patent Law- Technology transfer, IP Licensing and patent trolls.

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REFERENCES

- Aswani Kumar Bansal : Law of Trademarks in India
- B L Wadehra : Law Relating to Patents, Trademarks, Copyright, Designs and Geographical Indications.
- G.V.G Krishnamurthy : The Law of Trademarks, Copyright, Patents and Design.
- Satyawrat Ponkse : The Management of Intellectual Property.
- Feroz Ali, The Law of Patents, LexisNexis

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INSTITUTION NAME:.....

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DATE OF BIRTH:.....

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EMAIL:.....

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PERMANENT ADDRESS:.....

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SIGNATURE OF THE APPLICANT

Submission of the form

Submit your application form in person to the course co-ordinator, School of Arts and Science, PRIST Deemed to be University, Vallam, Thanjavur - 613 403

COURSE CO-ORDINATOR

Dr. T. Veeramani

Head & Assistant professor

Department of Biotechnology

PRIST Deemed to be University, Thanjavur

Email: [illegible]@prist.ac.in



PRIST UNIVERSITY

ABOUT THE PROGRAM

Course objectives:

- To provide students with comprehensive knowledge of various laboratory techniques including microbiology, biochemistry, clinical pathology, serology, and hematology.
- Students learn how to conduct diagnostic tests, interpret test results, and maintain laboratory equipment and supplies.

Course Outcomes:

- Perform routine clinical laboratory procedures within acceptable quality control parameters in Hematology, Chemistry, Immunochemistry, and Microbiology under the general supervision of a Clinical Laboratory Scientist or Pathologist.
- Demonstrate technical skills, work behaviors, and professional awareness incumbent upon a laboratory technician.
- Operate and maintain laboratory equipment, utilizing appropriate quality control and safety procedures.

J. Ilamaal

Head of the Department
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COURSE CO-ORDINATOR

Dr. T. Vasudevan
Head & Assistant professor
Department of Biotechnology
PRIST Deemed to be University, Thanjavur
Email: hodbt@prist.ac.in

ABOUT THE UNIVERSITY

Pennaiyah Ramajayam Institute of Science and Technology as a private and deemed university in Vallam Thanjavur, India. The institute offers undergraduate and postgraduate courses in Engineering, Science, Education, Management, Arts, and Law, as well as research programmes.

FACILITIES AVAILABLE

Student Services Center, Health Center, Yoga Center, ATM, GYM, Cafeteria, Hostel, Play Ground, Transport, Museum, Art Gallery

ABOUT THE DEPARTMENT

The Department of Biotechnology was established in the year 2005 with an objective of imparting quality education and understanding the dynamic nature of Biotechnology. The department offers Undergraduate, Postgraduate, and Doctoral programs. Since 2006, the Department of Biotechnology has come forth as a full-fledged University Department of PRIST Deemed to be University. Excellent infrastructure facilities are available in the Department for the benefit of students. Many International and national conferences, seminars, workshops are conducted periodically. The department has a dedicated team of staff members and distinguished faculty, trained at renowned Institution from India and abroad. Apart from teaching, the faculty members are equally committed to research. The faculty members attract financial support for their research activities from both governmental and private agencies.

PRIST UNIVERSITY

CERTIFICATE COURSE ON

ABOUT THE PROGRAM

Course objectives:

- To introduce fundamental concepts of methods of spirulina cultivation
- To train the students in comprehensive spirulina production and post-production
- To make the students become a entrepreneur

Course Outcomes:

- Will prepare students to understand the spirulina cultivation techniques
- It will also help students to learn the application of spirulina
- Will prepare students to understand the problems of farmers and them to tackle the with recent Biotechnological advances



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Submit your application form to person in the course co-ordinator, School of Arts and Science PRIST Deemed to be University, Vallam, Thanjavur - 613 403.

COURSE CO-ORDINATOR

Dr. T. Veeramani
Head & Associate professor
Department of Biotechnology
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Email: [illegible]

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PRIST UNIVERSITY

CERTIFICATE COURSE ON FERMENTATION TECHNOLOGY

ABOUT THE PROGRAM

Course objectives:

- To study the design and construction of fermentor and parameters to be monitored and controlled in fermentation process
- To study the principle of sterilization necessary for fermentation
- To study the cell growth and product formation
- To evaluate the kinetics and stoichiometry of microbial growth

Course outcomes:

- This subject gives emphasis on the basic engineering principles of fermentation Technology.
- It also highlights the application of fermentation to biotechnological industry.



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CERTIFICATE COURSE ON

- To meet the academia to provide knowledge for sustainable aquaculture
- To expose learners to frontier and thrust areas of Aquaculture
- To provide the institute an experience to research for Aquaculture production

- Identify and understand different types of fishes and fin fish anatomy
- Understand the Aquatic environment and Aquatic ecosystem
- Understand the Classification of Fishes and Distribution
- Understand the Food and Feeding Habits



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DEPARTMENT OF BIOTECHNOLOGY

PRIST/A&S/BT/22-23/13 01.02.2023

This is to inform all Biotechnology students that the value added courses classes for academi year 2022-23 odd semester will be commenced from 03.02.2023. Hence requesting all registered students to attend the classes without fail.

1. Certificate course on 3D Bioprinting

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To The Vice Chancellor (for your kind information)
2. Registrar
3. Registrar office
4. Dean
5. Department file

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DEPARTMENT OF BIOTECHNOLOGY

Certificate course on

3D BIOPRINTING

SYLLABUS

Total: 45 hours

SUBJECT CODE: 22517 3BP

Course objectives:

This course is of interest for students with a bio medical, material chemistry or engineering background interested in the application of 3D printing and other 3D fabrication techniques in the field of medicine.

- It will provide insight in the opportunities of additive manufacturing technologies, micro/nano devices and 3D printing in biomedical applications.
- It will provide the basics of 3D printing and additive manufacturing and devices used for biofabrication, and the introduction to 3D design
- It will also provide insight in the specific challenges encountered when translating 3D printing to biofabrication, such as the development of specific bioinks and the required control over processing conditions

Course outcomes:

On completion of the course the student will be able to:

1. Use software tools for 3D printing
2. Prepare 3D printed modules
3. Construct products using LOM and FDM technologies

UNIT 1 **(9 hours)**

Opportunities & Challenges of 3D bioprinting & biofabrication in medical applications; Core Principles and Physical Foundations underlying 3D Bioprinting; Basic process of 3D bioprinting (problem, design, material selection, and object fabrication)

UNIT 2 **(9 hours)**

Biofabrication and 3D-Bioprinting Technologies and Tools; Medical imaging and imaging processing, Biomodeling, Blueprints (Digital models of tissues and organs), Technology platforms and emerging trends in bioprinting; Validating assays applied to printed products

UNIT 3 **(9 hours)**

Introduction to Bioinks; Important material requirement for Bioink development, Crosslinking of Hydrogels for Bioprinting, Single-Material and Multi-material Bioink Systems

UNIT 4 **(9 hours)**

Design approaches in Bioprinting, Design of Cornea Tissue Specific Bioink and 3D Bioprinting of Cornea, Bioprinting of Heart, Bioprinting of Kidney

UNIT 5 **(9 hours)**

Medical Modeling for Organ Printing; Ethical Issues related to Organ Printing

REFERENCES

1. Chua C. K., Leong K. F. and Lim C. S. Rapid prototyping: Principles and Applications, World Scientific publications, India, 2010
2. [illegible] "Rapid Manufacturing", Springer, 2005
3. Terry Wohlers "Wohlers Report 2000" Wohlers Associates, 2000
4. Paul F. Jacobs "Rapid Prototyping and Manufacturing", ASME Press, 1996 5. Ian Gibson, David Rosen, Brent Stucker "Additive Manufacturing Technologies" Springer, 2014

Head of the Department
Department of Biotechnology
School of Arts & Science
Post Deemed to be University, Thanjavur.

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APPLICATION FORM

NAME: .....

PROGRAMME: .....

DISCIPLINE: .....

INSTITUTION NAME: .....

.....

DATE OF BIRTH: .....

SEX: .....

EMAIL: .....

MOBILE: .....

PERMANENT ADDRESS: .....

.....

SIGNATURE OF THE APPLICANT

Submission of the form

Submit your application form in person to the course coordinator, School of Arts and Science, PRIST Deemed to be University, Vallam, Thanjavur - 613 403

COURSE CO-ORDINATOR

Dr. T. Veeramani
Head & Assistant professor
Department of Biotechnology
PRIST Deemed to be University,
Thanjavur
Email: hodbt@prist.ac.in

ABOUT THE UNIVERSITY

Ponnaiyah Ramajayam Institute of Science and Technology is a private and deemed university in Vallam Thanjavur, India. The institute offers undergraduate and postgraduate courses in Engineering, Science, Education, Management, Arts, and Law, as well as research programmes.

FACILITIES AVAILABLE

Student Services Center, Health Center, Yoga Center, ATM, GYM, Cafeteria, Hostel, Play Ground, Transport, Museum, Art Gallery

ABOUT THE DEPARTMENT

The Department of Biotechnology was established in the year 2002 with an objective of imparting quality education and understanding the dynamic scope of Biotechnology. The department offers Undergraduate, Postgraduate, and Doctoral programs. Since 2008, the Department of Biotechnology has come forth as a full fledged functioning Department of PRIST Deemed to be University. Excellent infrastructure facilities are available in the Department for the benefit of students. Many International and national conferences/seminars, workshops are conducted periodically. The department has a dedicated team of staff members and distinguished faculty, trained at renowned institutes from India and abroad. Apart from teaching, the faculty members are equally committed to research. The faculty members extend financial support for their research activities from both governmental and private agencies.

SCHOOL OF ARTS & SCIENCE

CERTIFICATE COURSE ON 3D BIOPRINTING

The course is of interest for students and a biomedical engineer or engineering background interested in the application of 3D printing and other 3D fabrication techniques in the field of medicine.

- It will provide insight in the opportunities of additive manufacturing technologies, microfluidic devices and 3D printing in biomedical applications.
- It will provide the basics of 3D printing and additive manufacturing and devices used for biofabrication and the introduction to 3D design.
- It will also provide insights in the specific challenges encountered when executing 3D printing of biofabrication, such as the development of specific bioinks and the required control over processing conditions

On completion of the course the student will be able to:

- Use software tools for 3D printing
- Prepare 3D printed modules
- Construct prosthesis using DLM and FDM technologies



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SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

VALUE ADDED COURSE
2022-2023

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SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Ref: PRIST/E&T/ EEE/2022-2023/3 13.09.2022

CIRCULAR

SUB: Add on Course-Reg

It is informed that Add on Course-Certificate Course-2022 for students will be started on 15.09.2022 the academic year 2022-2023 (Add Semester. The detailed schedule will be given by the departments.

Head of the departments are requested to inform their students about the Add on Course- 2022 on "Solar energy and Its applications" and the course coordinator is Mr. S. Govindaswamy and motivates them to attend the course.

HOD's are requested to nominate one faculty member to co-ordinate the Add on Course.

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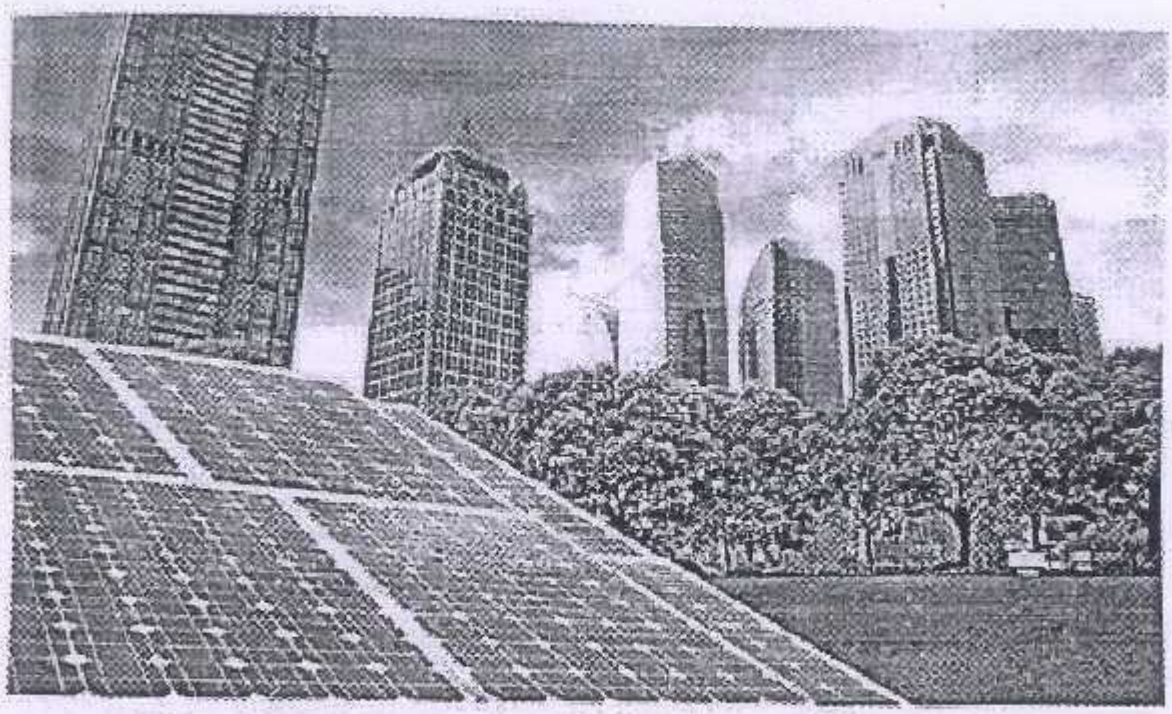
VALUE ADDED COURSE–SOLAR ENERGY AND IT's APPLICATIONS

Head of the Department
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SOLAR ENERGY AND APPLICATIONS



COURSE OBJECTIVE:

Solar energy is radiant light and heat from the Sun that is harnessed using a range of ever-evolving technologies such as solar heating, photovoltaic's, solar thermal energy, solar architecture, molten salt power plants and artificial photosynthesis.Learning Objectives After this lesson, students should be able to: Describe solar energy and why it changes with time and location. Calculate the amount of solar energy on Earth at a given time and location. Explain how solar energy is used in sustainable engineering applications. Explain why solar energy is becoming more prevalent. More Curriculum Like This Solar Angles and Tracking Systems. To familiarize the students with the concepts of generation of electrical energy from Solar Energy with emphasis on Solar thermal energy and Solar Photovoltaic and its application.

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SYLLABUS:

UNIT I:

General: Need for sustainable source of energy, solar energy: direct and indirect, main features of terrestrial solar radiation, solar radiation spectrum, insolation, solar data, resource estimation and measurement. Overview of thermal and PV applications, solar heat collectors. **UNIT II:**

Solar Thermal Systems: Heat transfer concepts, performance and analysis of liquid flat plate collectors, effect of various parameters on its performance, rooftop solar water heaters, solar passive space heating and cooling, solar industrial heating, solar air conditioning and refrigeration, solar thermo-mechanical system

UNIT III:

Solar PV Modules: Generation of electron-hole pair by photon absorption, solar cell I-V characteristics, equivalent circuit, effect of variation of insolation and temperature, energy losses and efficiency, various types of junction structures, construction of cell, module, panel, array; module specifications, mismatch in module, effect of shadowing, balance of system: battery, charge controller, MPPT etc.

UNIT IV:

Solar PV systems: Various types of standalone PV system configurations, grid connected PV system with and without battery storage, system sizing and design methodologies, hybrid PV system, life cycle costing of solar system.

UNIT V:

Solar Cell Technologies: Production of silicon, silicon wafer based technology, thin film technology, single, multi-crystalline and amorphous cells, concentrator PV cell, emerging solar cell technologies and concepts.

COURSE DURATION: 45Hours

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SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Ref: PRIST/E&T/ EEE/2022-2023/6 03.02.2023

CIRCULAR

SUB: Add on Course--Reg

It is informed that Add on Course-Certificate Course-2022 for students will be started on 06.02.2023 the academic year 2022-2023 even Semester. The detailed schedule will be given by the departments.

Head of the departments are requested to inform their students about the Add on Course- 2023 on "LABVIEW for Industrial Applications" and the course coordinator is Ms. R. Prasannadevi and motivates them to attend the course.

HOD's are requested to nominate one faculty member to co-ordinate the Add on Course.

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PRINCIPAL

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING



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VALUE ADDED COURSE – LAB VIEW

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ABOUT THE INSTITUTION:

PonnaiyahRamajayam Institute of Science and Technology (PRIST), a Deemed University (U/s 3 of the UGC Act 1956), is one of the renowned units of PonnaiyahRamajayam Institutions, which are serving for more than 25 years in promoting quality education and research for our Indian community, since its inception. The institution is now brimming with many social responsibilities, particularly in promoting quality education through research.

About the Department:

The department of Electrical and Electronics of PRIST DEEMED UNIVERSITY was established in 2008. Since then its excellence in each and every aspects has played an important role in the institute.

The EEE Department is dedicated to delivering competent electrical engineers to the arena of the real world. They are outfitted with core technical knowledge as well as professional skills necessary to face the challenges of the future. The committed faculty and staff are fully geared up towards this end.

The department has spacious laboratories such as Machines lab, Electric Circuits Lab, Measurement and Instrumentation Lab, Control System Lab, Power Electronics Lab and Power systems Simulation Lab. All the laboratories are fully equipped with latest, modern and sophisticated equipments.

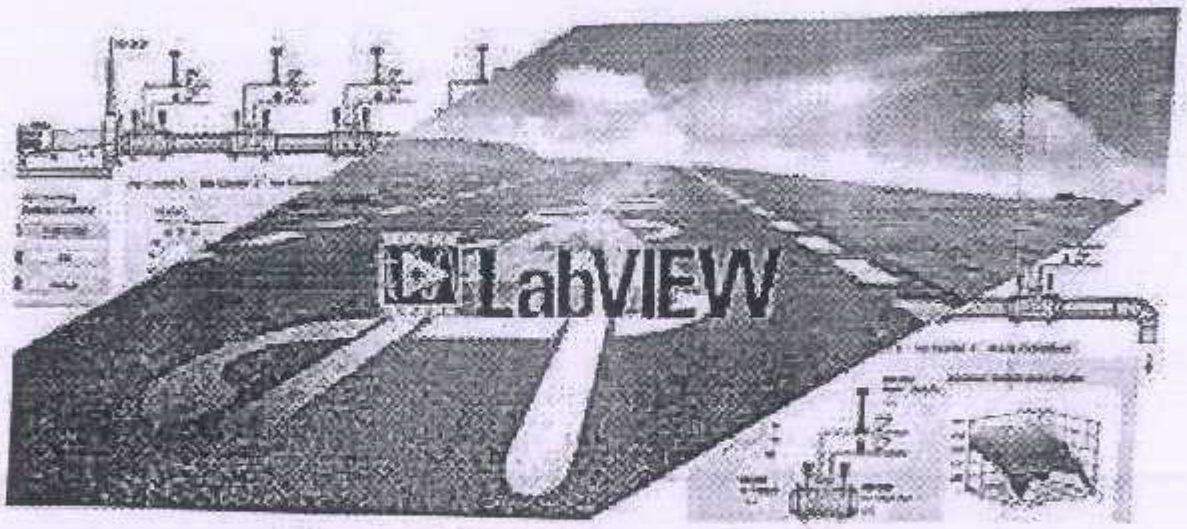
The Department has young as well as experienced and dynamic personalities as faculty, is involved in providing quality education at both Undergraduate (UG) and Postgraduate (PG) levels. The staffs are from various disciplines in masters like Power electronics and drives, Power system, advanced communication system. Many of the staff members are encouraged to pursue their higher studies and research works.

Head of the Department
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LAB VIEW



Course objective

- Interactively acquire and analyze single-channel and multi-channel data from NI DAQ devices and non-NI instruments
- Create user interfaces with charts, graphs, and buttons
- Use programming structures, data types, and the analysis and signal processing algorithms in LabVIEW
- Debug and troubleshoot applications
- Log data to file
- Use best programming practices for code reuse and readability
- Implement a sequencer using a state machine design pattern

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COURSE OUTCOME

- LabVIEW programming principles
- Data types, software constructs, and Graphical User Interface (GUI) elements.
- Variables and functions
- Simple design patterns
- SubVI design
- VI design and documentation
- Error handling
- Debugging tools and technique

Head of the Department
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LABVIEW

INTRODUCTION LABVIEW

What Exactly is LabVIEW-What can LabVIEW do for you- How does LabVIEW work-Evolution of LabVIEW- What is DAQ- Communication using Serial Port- LabVIEW addon toolkits- LabVIEW Real Time, FPGA, PDA, and Embedded.

LABVIEW ENVIRONMENT

Front panel, control and indicator- Block Diagram, Nodes , Wires, Data Flow Programming- LabVIEW Project Explorer window, project Explorer ToolbarsBuilding Application- Installers- Floating Pallets

LABVIEW FOUNDATION

Creating VI- Basic Controls- Indicators- Booleans- String- Paths- DecorationsCustom Controls and Indicators- Automatic wire routing-Automatic Wiring – Wiring Complicated Objects- Bad Wires – Wiring Tips- adding Constants- Controls and indicators – Keyboard Shortcuts- Cloning and object.

PROGRAMMING EXECUTION WITH STRUCTURES

For Loop - The While Loop - Placing Objects inside Objects - Counting the Loops - Shift Registers – Case registers –Dialogs – The Sequence Structures – Timing – Timed Structures – Formula Node – Expression N

EMBEDDED COMBINING WITH LABVIEW

VISA concept - Baud rate Calculation - Measurement and Automation Explorer - Serial Communication with Microcontrollers.

COURSE DURATION : 45 HRS

Head of the Department
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SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Ref: PRIST/E&T/ EEE/2022-2023/7 06.03.2023

CIRCULAR

SUB: Add on Course–Reg

It is informed that Add on Course-Certificate Course-2022 for students will be started on 13.03.2023 the academic year 2022-2023 even Semester. The detailed schedule will be given by the departments.

Head of the departments are requested to inform their students about the Add on Course– 2023 on "Real time operating systems" and the course coordinator is Ms. R. Nagalakshmi and motivates them to attend the course.

HOD's are requested to nominate one faculty member to co-ordinate the Add on Course.

Head of the Department
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Value Added Course – REAL TIME OPERATING SYSTEMS
(Certificate Course)

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REAL TIME OPERATING SYSTEMS



Course objective

- To know the present status of Indian and global energy scenario.
- To learn the various solar energy technologies and its applications.
- To educate the various wind energy technologies.
- To explore the various bio-energy technologies.
- To study the ocean and geothermal technologies.

Head of the Department
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COURSE OUTCOMES:

1. Analyze basic concepts of operating system and their structures.
2. Analyze various issues related to inter process communication like process scheduling, resource management and deadlocks.
3. Interpret the issues and challenges of memory management.
4. Synthesize the concepts of I/O management, file system implementation and problems related to security and protection

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SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ELECTRICAL AND ELECTRONICSENGINEERING



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VALUE ADDED COURSE – DESIGN OF PROJECT USING IOT

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The EEE Department is dedicated to delivering competent electrical engineers to the arena of the real world. They are outfitted with core technical knowledge as well as professional skills necessary to face the challenges of the future. The committed faculty and staff are fully geared up towards this end.

The department has spacious laboratories such as Machines lab, Electric Circuits Lab,Measurement and Instrumentation Lab, Control System Lab, Power Electronics Lab and Power systems Simulation Lab. All the laboratories are fully equipped with latest, modern and sophisticated equipments.

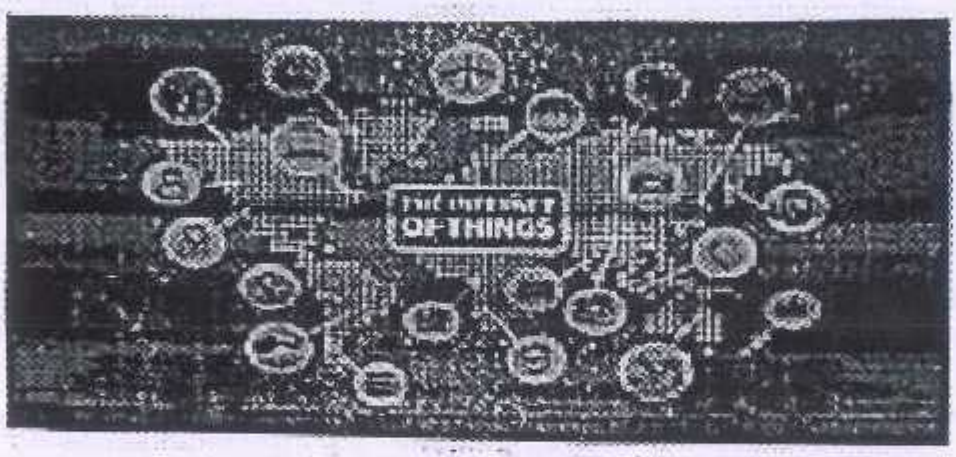
The Department has young as well as experienced and dynamic personalities as faculty, is involved in providing quality education at both Undergraduate (UG) and Postgraduate (PG) levels. The staffs are from various disciplines in masters like Power electronics and drives, Power system, advanced communication system. Many of the staff members are encouraged to pursue their higher studies and research works.

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DESIGN OF PROJECT USING IOT



Course objective

- This Course focuses on hands-on IoT concepts such as sensing, actuation and communication.
- It covers the development of Internet of Things (IoT) prototypes—including devices for sensing, actuation, processing, and communication—to help you develop skills and experiences.
- The Internet of Things (IOT) is the next wave, world is going to witness. Today we live in an era of connected devices the future is of connected things.

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DESIGN OF PROJECT USING IOT

Introduction to IOT

Understanding IoT fundamentals
IOT Architecture and protocols
Various Platforms for IoT
Real time Examples of IoT
Overview of IoT components and IoT Communication Technologies
Challenges in IOT

Arduino Simulation Environment

Arduino Uno Architecture
Setup the IDE, Writing Arduino Software
Arduino Libraries
Basics of Embedded C programming for Arduino
Interfacing LED, push button and buzzer with Arduino
Interfacing Arduino with LCD

Sensor & Actuators with Arduino

Overview of Sensors working
Analog and Digital Sensors
Interfacing of Temperature, Humidity, Motion, Light and Gas Sensor with Arduino
Interfacing of Actuators with Arduino.
Interfacing of Relay Switch and Servo Motor with Arduino.

Basic Networking with ESP8266 WIFI module

Introduction to ESP8266 Wi-Fi Module
Various Wi-Fi library
Basics of WirelessNetworking
Web server- introduction, installation, configuration
Posting sensor(s) data to web server

Cloud Platforms for IOT.

Virtualization concepts and Cloud Architecture
Cloud computing, benefits
Cloud services – SaaS, PaaS, IaaS
Cloud providers & offerings
Study of IOT Cloud platforms
ThingSpeak API and MQTT
Interfacing ESP8266 with Web services

COURSE DURATION : 45 HRS

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SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Ref: PRIST/E&T/ EEE/2022-2023/4 05.10.2022

CIRCULAR

SUB: Add on Course–Reg

It is informed that Add on Course-Certificate Course-2022 for students will be started on 12.10.2022 the academic year 2022-2023 Odd Semester. The detailed schedule will be given by the departments.

Head of the departments are requested to inform their students about the Add on Courses– 2022 on **"Introduction to IOT application"** and the course coordinator is Mr. B. Kamalakannan and motivates them to attend the course.

HOD's are requested to nominate one faculty member to co-ordinate the Add on Course.

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SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Ref: PRIST/E&T/ EEE/2022-2023/5 03.01.2023

CIRCULAR

SUB: Add on Course–Reg

It is informed that Add on Course-Certificate Course-2022 for students will be started on 06.01.2023 the academic year 2022-2023 even Semester. The detailed schedule will be given by the departments.

Head of the departments are requested to inform their students about the Add on Course– 2023 on "Artificial intelligence" and the course coordinator is Ms. T. Esther Thanisha and motivates them to attend the course.

HOD's are requested to nominate one faculty member to co-ordinate the Add on Course.

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SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING



VALUE ADDED COURSE – ARTIFICIAL INTELLIGENCE

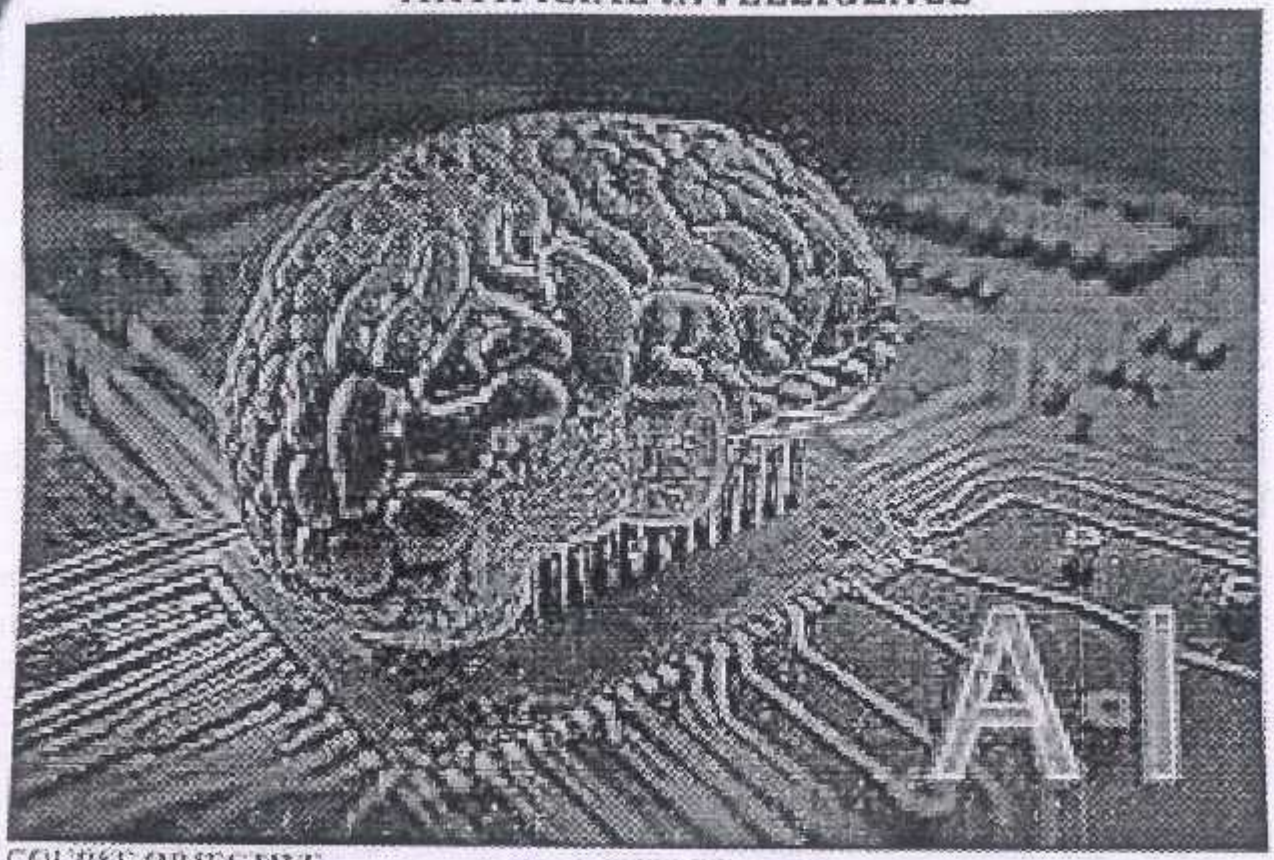
(Certificate Course)

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ARTIFICIAL INTELLIGENCE



COURSE OBJECTIVE

- To impart knowledge about Artificial Intelligence.
- To give understanding of the main abstractions and reasoning for intelligent systems.
- To enable the students to understand the basic principles of Artificial Intelligence in various applications.
- To understanding of the basic concepts of Artificial Intelligence including Search, Game Playing, KBS (including Uncertainty), Planning and Machine Learning.
- Intellectual skills You should be able to use this knowledge and understanding of appropriate principles and guidelines to synthesise solutions to tasks in AI and to critically evaluate alternatives.
- Practical skills You should be able to use a well known declarative language (Prolog) and to construct simple AI systems.
- Transferable Skills You should be able to solve problems and evaluate outcomes and alternatives

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MODULE 1

INTRODUCTION:

Overview of AI problems. AI problems as NP, NP-Complete and NP Hard problems. Strong and weak, neat and scruffy, symbolic and sub-symbolic, knowledge-based and data-driven AI.

MODULE 2

SEARCH STRATEGIES:

Problem spaces (states, goals and operators), problem solving by search. Heuristics and informed search. Minimax Search, Alpha-beta pruning. Constraint satisfaction (backtracking and local search methods).

MODULE 3

KNOWLEDGE REPRESENTATION AND REASONING:

Propositional and predicate logic, Resolution and theorem proving. Temporal and spatial reasoning. Probabilistic reasoning, Bayes theorem. Totally-ordered and partially-ordered Planning. Goal stack planning, Nonlinear planning, Hierarchical planning.

MODULE 4

LEARNING:

Learning from example, Learning by advice, Explanation based learning, Learning in problem solving, Classification, Inductive learning, Naive Bayesian Classifier, decision trees. Natural Language Processing: Language models, n-grams, Vector space models, Bag of words, Text classification, Information retrieval.

MODULE 5

AGENTS:

Definition of agents, Agent architectures (e.g., reactive, layered, cognitive), Multi-agent systems-Collaborating agents, Competitive agents, Swarm systems and biologically inspired models.

MODULE 6

INTELLIGENT SYSTEMS:

Representing and Using Domain Knowledge, Expert System Shells, Explanation, Knowledge Acquisition. Key Application Areas: Expert system, decision support systems, Speech and vision, Natural language processing, Information Retrieval, Semantic Web.

COURSE DURATION: 45 Hours

COURSE OUTCOMES

Upon successful completion of the course, the students will be able to

- Solve basic AI based problems.
- Define the concept of Artificial Intelligence.
- Apply AI techniques to real-world problems to develop intelligent systems.
- Select appropriately from a range of techniques when implementing intelligent systems.

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SCHOOL OF ARTS AND SCIENCE

DEPARTMENT OF CHEMISTRY

CIRCULAR

This is to inform all III BSc Chemistry students that, the classes for the value program f the academic year 2022-2023 semester-VI will commence 18.07.22. The registered students requested to attend the classes without fail

Branch name	Year	Course offered
Health	III BSc	Water Resource Management Pollution &Health

HOD

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SCHOOL OF ARTS AND SCIENCE
DEPARTMENT OF CHEMISTRY
PERIOD: 18.07.22 TO 03.09.22


APPLICATION FORM

1. Full Name .....
2. Programme .....
3. Discipline .....
4. Institution Name .....
5. Date of Birth .....
6. Ins. Of(if) .....
7. E-mail .....
8. Mobile No .....
9. Permanent Address .....

Signature of the Applicant

About the University

Ponnaiyah Ramajayam Institute of Science and Technology (PRIST) is a deemed university in Tamil Nadu, India. The institute offers undergraduate and postgraduate courses in Engineering, Science, Education, Management, Arts, and Law, as well as research programmes.

Facilities Available

The University is located in an independent, multi-storey building with state of art equipment, excellent Laboratories and infrastructure to help complete the course. Masters of science have been acting as supervising the research program. Computer Library with internet facilities for students, transit facilities, sports centre, sports complex, etc.,

Department of Chemistry

The Department has young as well as experienced and dynamic personalities in faculty, is involved in providing quality education at Undergraduate (UG) and Postgraduate (PG) levels. The staff of the school involve themselves in Doctorate like Ph.D degree, Research Guide, Teaching, Academic Research Publication Group, Blog Writing and sometimes are encouraged to pursue their higher studies and research works.

Submission of Application Form

Submit your Application form in person to the Co-ordinator, School of Arts and Science, PRIST University, Thanjavur, Vallam, 613 403.

Application may be send to

Course Co-Ordinator
DR.D.CHITHAMBA
Assistant Professor
Department of Chemistry
PRIST University
Email: chemistry@gmail.com



VALUE ADDED COURSE
Academic year: 2022-2023
Diploma Course on Water Resources, Management, and Water Pollution & Health

Aim; To provide an idea on Water Resources, Management, and Water

Pollution & Health

Course learning outcomes:

- The participants will learns about the importance of water resources.
- The participants will get insight into the water cycle.
- They will learn and understand the water pollution problem and its gravity.

UNIT -1

- Water cycle and water chemistry
- The water cycle, Properties of water.
- Tetrahedral chemistry of water.
- Physical Physico chemical characteristics water bodies.

UNIT -2

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- Water resources and treatment
- Types of ware resources
- National drinking water policy.
- Drinking water treatment plants and various disinfection processes.
- Household treatment, Drinking water standards,

UNIT -3

- Water pollution
- Causes effect and control measures of water pollution.
- Pollution control standards, WHO standards of drinking water.
- Waterborne diseases. Microbial contamination of water types, sources, threats.
- Microbial standards of drinking water, MPN.

UNIT -4

- Water conservation and water pollution acts in India.
- Water conservation: Ice stupa artificial glacier by Sonam Wangchuk.

UNIT -5

- Rainwater harvesting.
- Watershed Management; Classification, Objective ,Advantages and Disadvantages.

References

1) Water Q&A: Why is water the "universal solvent"?". Water Science School. United States Geological Survey, U.S. Department of the Interior. 20 June 2019. Archived from the original on 6 February 2021. Retrieved 15 January 2021.

2) 10.2: Hybrid Orbitals in Water". Chemistry LibreTexts. 18 March 2020. Archived from the original on 30 July 2022. Retrieved 11 April 2021.

3) Environmental Health Education Program. Cambridge, MA: Harvard T.H. Chan School of Public Health. July 23, 2013. Archived from the original on September 18, 2021. Retrieved September 18, 2021.

Time Table

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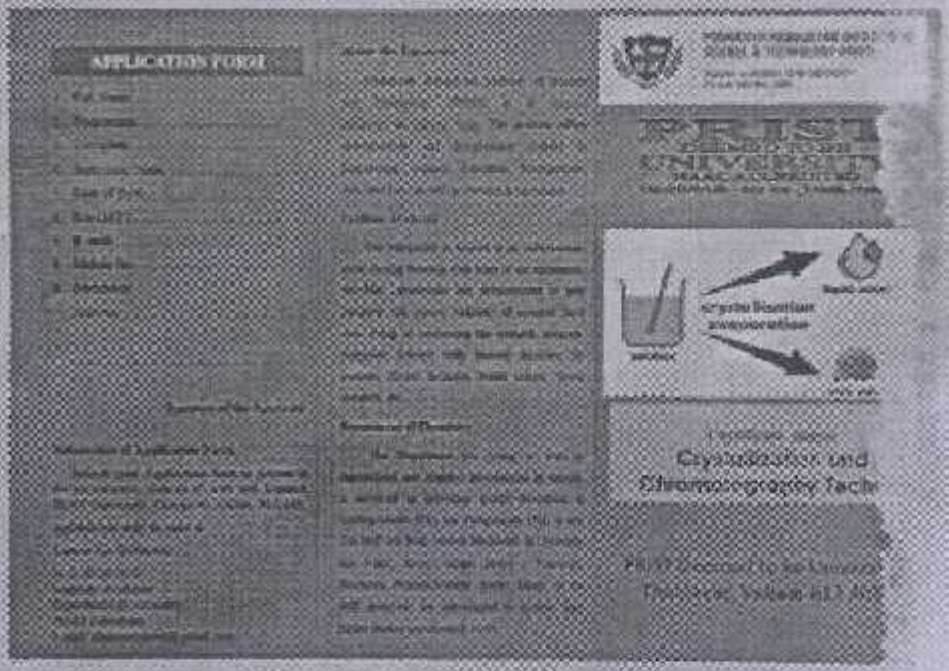
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SCHOOL OF SCIENCE AND HUMANITIES
DEPARTMENT OF CHEMISTRY

This is to inform all III BSc Chemistry students that, the classes for the value-added program for the academic year 2022-2023 semester-VI will be value-added on [illegible] The registered students are requested to attend the classes without fail.

Branch name	Year	Course offered
Chemistry	III BSc	Crystallization and Chromatography Techniques



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SCHOOL OF ARTS AND SCIENCE
DEPARTMENT OF CHEMISTRY
PERIOD: 03.02.23 TO 18.04.23

VALUE ADDED COURSE

Academic year: 2022-2023

Diploma Course on Crystallization and chromatography techniques

Aim:

To introduce students to Crystallization and chromatography techniques.

Objectives:

To inculcate concepts of thin layer and column identification and validation.

To understand techniques in Phenotypic screening and target deconvolution.

To increase the employability of the students.

To educate about then-layer column Chromatographic techniques of novel biologically active compounds.

Course Outcomes

At the end of the course, students will be able to turn
to understand methods of crystallization

Explain the principles and techniques of column and thin-layer chromatography techniques.

Purify the compounds by crystallization technique.

Analyse and detect the sample thin-lawyer chromatography

Separate the isomers of a compound by column chromatography technique

Unit – Crystallization

Principle, Methods of recrystallization Melt crystallization, Suspension crystallization; solvents for recrystallization, Precipitation, Nucleation, Supersaturation, Common challenges in crystallization. Processes involved in crystallization, and applications.

Unit-II

Chromatography Techniques

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Chromatography – Adsorption, Partition chromatography. Column Chromatography - Principle, Adsorbents, developers, solvents, columns, packing of the columns, elution, eluting solvent selection-polar and non-polar. Applications.

Thin Layer chromatography – Principle, RF, preparation of chromatophores application of sample on the chromatophores choice of adsorbents, selection of solvent, locating reagents, developing chamber, development of chromatogram and Applications.

Unit-III Practical

Crystallization of simple compounds

Zinc oxide, Copper sulfate, Sodium acetate, Sodium Chloride, Potash alum, Phthalic acid, Benzoic acid, Acetyl salicylic acid, Urea ,and Sugar.

Unit – IV Practical

Thin Layer Chromatography

Separation of Mixture of benzophenone and naphthalene

Separation of Mixture of 2-nitrophenol and 4-nitrophenol

Separation of Mixture of Diphenylamine, Benzophenone and Naphthalene. Separation of Mixture of Azobenzene, Hydroxyazobenzene and p-aminoazobenzene

Unit – V Practical

Column Chromatography

Separation of $KMnO_4$ and $K_2Cr_2O_7$ Isolation of 2-nitrophenol and 4-nitrophenol

Text Books:

S. No	Author Name	Book Name	Edition	Publisher detail	Year
1.	P.S. Subramanian R.Gopalan, K Rengarajan	Elements of Analytical Chemistry	-	S. Chand & Company Ltd, New Delhi.	2003
2	V.R. Srivastava and R. Kumar	Introduction to chromatography-Theory and practice	3rd edition	S. Chand & Company Ltd, New Delhi.	1991
3	Brian S. Furniss, Antony J.Hannaford, Peter W. G. Smith and Austin R. Tatchell	Vogel's Text Book of Practical Organic Chemistry	5th Edition	LongmanGroup	1989

Time Table

Period: [illegible]

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SCHOOL OF ARTS AND SCIENCE
DEPARTMENT OF CHEMISTRY
PERIOD: 03.02.23 TO 06.04.23

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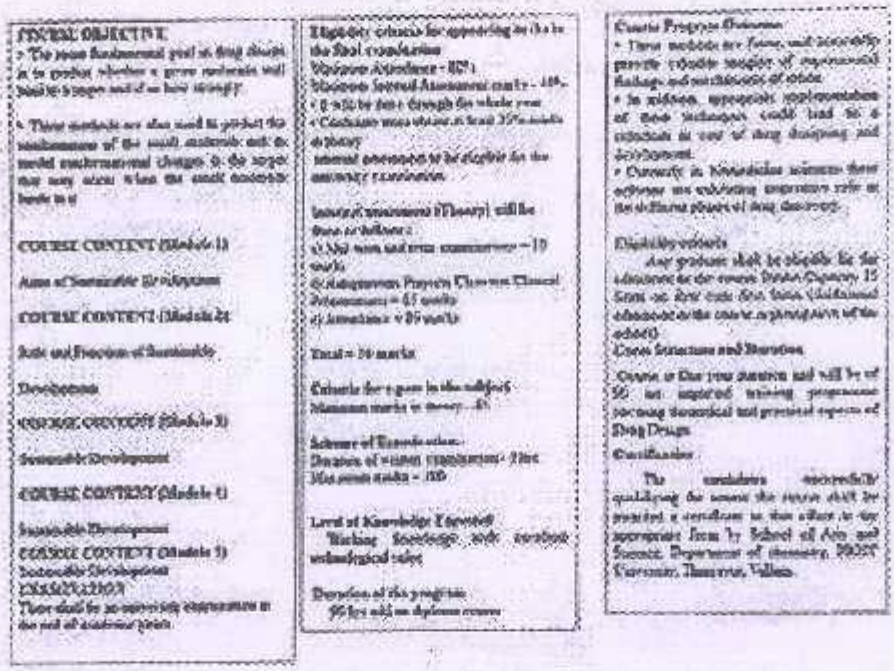
Branch name	Year	Course offered
Bsc-Chemistry	III BSc	Molecular Structure Drawing Tool



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VALUE ADDED COURSE

Academic year: 2022-2023 PERIOD: 03.02.23 TO 18.04.23

Diploma Course on Molecular Structure Drawing Tool

Aim:

- To introduce students to molecular structure and biological evaluation of novel biologically active compounds.

Objectives:

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DEPARTMENT OF CHEMISTRY
PERIOD: 03.02.23 TO 18.04.23

To inculcate concepts of molecular structure target identification and validation.

To understand techniques in Phenotypic screening and target convolution.

To increase employability of the students.

To educate about role of molecular structure of novel biologically active compounds

Course Outcomes:

At the end of this unit, you will be able to:

- Understand the software used in chemistry
- Perform the Manipulations of Selected Objects
- Apply the chemdraw software to draw the different systems
- Generate the IUPAC and physical properties of organic compounds

Predict resonance spectral data of chemical structures.

UNIT-I: Molecular Structure Drawing Tool

ChemDraw - Introduction, Installation, Drawing molecular structures - structuretypes,drawing the framework of a structure, Drawing Bonds of Different Types ChangingBond Types, Introducing Atom Labels.

UNIT-II: Manipulations with Selected Objects

Manipulations with Selected Objects- Select Objects, Move Objects, Copy Objects, Rotateand Mirror Objects, Stretch/Shrink/Scale Objects, Structure Perspective, Join Objects.

UNIT-III: ChemDraw-Practical I

Drawi g of molecules - acyclic, cyclic, heterocyclic and bicyclic systems

- Analysis of molecules - formula, exact mass and elemental analysis
- Graphical representation of reaction scheme

UNIT-IV: ChemDraw-Practical II

- Chemical structures to IUPAC names
- IUPAC naming to chemical structures
- 2D structures into 3D structures
- Prediction of boiling point, melting point, critical temperature, critical pressure

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DEPARTMENT OF EDUCATION

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Value Added Course

2022 - 2023

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DEPARTMENT OF EDUCATION
Value Added Course
Circular

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S.No	Course Code	Course Offered	Branch Name	Year	Course
1	22130VAC1	Education and Socialization	Education	2022 -23	B.Ed&M.Ed
2	22130VAC2	NCC	Education	2022 -23	B.Ed&M.Ed
3	22130VAC3	Health and Well-Being	Education	2022 -23	B.Ed&M.Ed
4	22130VAC4	Museum Pedagogical Techniques	Education	2022 -23	B.Ed&M.Ed
5	22130VAC5	Technical Writing	Education	2022-23	B.Ed&M.Ed

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2. Registrar
3. Dean
4. Department file

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SCHOOL OF EDUCATION
VALUE ADDED COURSE IN
Education and Socialization

ABOUT PRIST DEEMED TO BE UNIVERSITY

- Established in the year 1990.
- Accredited as A+ in the year 2008.
- Provides modern learning infrastructure.
- Offering quality higher Education in Engineering & Technology.
- Reaching out Centres apart from Thanjavur, Madurai, Trichy, Pondicherry, Kumbakonam & Chennai.

Our beloved patron Prof. P. Muruganantham makes his humble contribution to society by providing quality education. He owes everything to his beloved father shri. Ponnaiah and his lovingmother Shri. Ramajayam who inspired him, motivated him and groomed him.

Our Ponnaiyah Ramajayam Institute of Science and Technology (PRIST) institution, a Deemed to be University, Thanjavur, Tamil Nadu is recognized by UGC Under Section 3 of Act 1956, is one of the renowned institutions and it quality education serves more than 30 years in promoting.

PROFILE OF THE SCHOOL OF EDUCATION

The School of education under Ponnaiyah Ramajayam Institute of Science and Technology (PRIST) was established at Vallam, Thanjavur in the year 2008. The School has been functioning full time B.Ed., M.Ed., M.Phil programmes and Part time / Part time Ph.D Programme to uplift the poor and marginal students. School of Education is contributing its best to provide research and to impart educational skills to the rural students and to bring out their latent talents to the mind of the rural students.

CERTIFICATE PROGRAMME IN GUIDANCE:

The Certificate Programme in Guidance (CIG) caters the needs of teachers, parents, social workers and others interested in guiding children in the age group of 5-11 years for their better learning and social-emotional development. This is an awareness programme, which will help you in dealing with the problems faced by the children. The programme is developed in collaboration with the National Council of Educational Research and Training (NCERT), Delhi, the apex body concerned with school education in the country.

HOW WILL THIS PROGRAMME HELP YOU?

The programme has been specially designed to help you develop understanding of child development. You will know how individuals differ and can play a vital role in the context of child education. You will know concepts and processes of guidance in guiding elementary school children for learning and socio-emotional development. You will be able to identify children with special needs and problems. This programme will suggest strategies to facilitate all round development of children.

TARGET GROUP

This programme is meant for a target group comprising teachers, parents, social workers, personnel from voluntary agencies and any other who is interested in who is interested in understanding and guiding children.

ELIGIBILITY

Teachers working presently in primary schools.
Anyone who is 10+2 or equivalent and minimum 18 years of age.

PROGRAMME STRUCTURE

National Health Programmes in India.

INSTRUCTIONAL SYSTEM

Unit - I : Introduction : Conceptual clarity, Relationship between society, education and Development.
Unit - II : Socialization and Education : Relations between socialization and Education, Agencies of socialization and Education: Family, Peer Groups, School and Media.
Unit - III : Education, Inequalities and Social Justice: Concept of Equality of Educational Opportunity, Education and Disparities: Caste, Class, tribe, gender, rural-urban, Education and social mobility
Unit - IV : Emerging Trends in Education in India: School education: Existing scenario, Higher Education in India, Governance of Higher Education: Institutional programmes, National Educational policy 1986.

Instruction is imparted through bi-media package comprising the following:

- Printed materials, sent by mail, provided to you personally or read and understand by your group.
- Video and Audio programmes provided to the Study Centres.
- Programmes telecast through national hook up of Doordarshan.
- Facility for further help/tele-tutoring from the academic counsellor at the Study Centres.
- Small book provided on written activity-cum-home assignments done by you.
- Live interaction between centre and the Head quarters and other regional Centres through teleconferencing and radio counselling at select places.

EVALUATION

When you successfully complete all the courses mentioned above, you will be eligible for the award of Certificate in Guidance. There are three types of evaluation methods used under this programme.

a) There are two tests in the period of learning. (Note: If you are required to do a life study in 9th class in grade (taking weight age).
b) There will be continuous examination in the form of assignments.
c) There will be term-end (final) examination.
d) The weight age given in the final and continuous assessment will be 70% and 30% respectively.

DURATION

Minimum: 45 Hours
Maximum: 3 Months PROGRAMME FEE: Rs. 100
MEDIUM OF INSTRUCTION: English
For more details of the programme please contact:

The Dean
Or
The Programme Coordinator
Ponnaiyah Ramajayam Institute of Science & Technology (PRIST),
Deemed To Be University
Thanjavur, -613403.
Phone: 9443806804 Fax: +91 4362 259371
Web: www.prist.ac.in
Outlook Mail id: deanedu@prist.ac.in
E-Mail id: pristsoe@gmail.com

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PRIST Deemed to be University
THANJAVUR - 613 403.

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PRIST Deemed to be University
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SCHOOL OF EDUCATION
VALUE ADDED COURSE IN NCC

ABOUT PRIST DEEMED TO BE UNIVERSITY

- Established in the year 2000.
- Attained university status in the year 2008.
- Provides world class learning infrastructure.
- Offering quality higher Education in Engineering & Technology.
- Residing on Campus apart from Thanjavur, Madurai, Trichy, Pondicherry, Kumbakonam & Chennai.

Our beloved patron Prof.P.Munuswamy makes his humble contribution to society by providing quality education. He owes everything to his beloved father late Ponnaiah and his loving mother Shri.Ramajayam Ammal who inspired him, nurtured him and groomed him.

Our Ponnaiyah Ramajayam Institute of Science and Technology (PRIST) Institution, a Deemed to be University, Thanjavur, Tamil Nadu is recognized by UGC Under Section 3 of Act 1956, is one of the renowned institutions and it quality education serves more than 30 year in promoting.

PROFILE OF THE SCHOOL OF EDUCATION

The School of education under Ponnaiyah Ramajayam Institute of Science and Technology (PRIST) was established at Vallam, Thanjavur in the year 2008. The School of Education runs the full time B.Ed., M.Ed., M.Phil programmes and Full time / Part time Ph.D Programme to uplift the poor and marginal students. School of Education is contributing its best to promote research and to impart educational skills to the rural students and to bring out their latent talents in the midst of the rural students

CERTIFICATE PROGRAMME IN GUIDANCE

The Certificate Programme in Child Guidance (CIG) caters to the needs of teachers, parents, social workers and others interested in guiding children in the age group of 5-11 years for their better learning and social-emotional development. This is an awareness programme, which will help you in dealing with the problems faced by the children. The programme is developed in collaboration with the National Council of Educational Research and Training (NCERT), Delhi, the apex body concerned with school education in the country.

HOW WILL THIS PROGRAMME HELP YOU?

The programme has been specially designed to help you develop understanding of child development. You will know how this should function play a vital role in the process of child's education. You will know concepts and processes involved in guiding elementary school children for learning and socio-emotional development. You will be able to identify children with special needs and problems. This programme will suggest strategies to facilitate all round development of children.

TARGET GROUP

This programme is meant for a target group comprising teachers, parents, social workers, personnel from voluntary agencies, secretary of village who is interested in understanding and guiding children.

ELIGIBILITY

Teachers at pre-primary and primary schools.
Any one with 10+2 (matriculation pass and intermediate) years of age

PROGRAMME STRUCTURE

National Health Programmes India.

INSTRUCTIONAL SYSTEM

Instruction is imparted through multi-media package comprising the following:

UNIT-I: The NCC

Aims and Objectives of NCC – Organization and Training and NCC Song Incentives – National integration and Awareness- National Integration: Importance and Necessity. Freedom Struggle and Nationalist Movement in India

UNIT- II: Drill, Weapon Training

Characteristics of a rifle and its ammunition- Stripping, assembling, care and cleaning of .22 Rifle
Loading, cocking and unloading- Different positions for holding and aiming

UNIT- III: Personality Development and Leadership

Introduction to Personality development-Communication skills - Leadership traits-Time management- Disaster Management and Civil Affairs-types of Emergencies and Nature Disasters- Assistance during natural and other calamities Floods, Cyclones, Earth quakes, Accidents.

UNIT- IV: Social Awareness Community Development-Basics of Social Service and its needs Contribution of youth towards social welfare-Civic responsibilities- Health and Hygiene-Hygiene and sanitation-Infectious and contagious diseases and it prevention.

UNIT- V: Adventure and Obstacle Training-Obstacle training- Environment Awareness and Conservation-Natural resources-conservation and management- Water conservation and rain water Harvesting.

- Printed materials sent to your address which you can easily read and understand, you can revise.
- Video and Audio programmes provided at the Study Centres.
- Programmes telecast through national hookup of Doordarshan.
- Facility for further help for learning from the academicians at the Study Centres.
- Feedback provided on your assignments- oriented to help you assignments on a yearly basis.
- Live interaction between teacher and the
- Headquarters and student at Regional
- Centres through television, radio counselling at select places.

EVALUATION

When you successfully complete all the courses mentioned above, you will be eligible for the award of Certificate in Guidance. There are three types of evaluation methods used under this programme.

a) There are exercises in the printed learning material which you are required to do while study. In gth class in group will be weight age)
b) There will be a written examination in the form of assignments.
c) There will be term-end (final) examination.
d) The weight age given to the final and continuous assessment will be 70% and 30% respectively

DURATION

Minimum: 45 Hours
Maximum: 3 Months **PROGRAMME FEE** Rs. 100
MEDIUM OF INSTRUCTION: English

For more details of the programme please contact:

The Dean
Or
The Programme Coordinator
Ponnaiyah Ramajayam Institute of Science & Technology (PRIST),
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SCHOOL OF EDUCATION
VALUE ADDED COURSE IN
HEALTH AND WELL-BEING

ABOUT PRIST DEEMED TO BE UNIVERSITY

- Established in the year 2008
- Accredited with 'A' grade by NAAC in the year 2008
- Four decades of excellence in educational services
- Offering quality higher Education in Engineering & Technology
- Reaching out Campuses at Kovilpatti, Thanjavur, Madurai, Krishnagiri, Namakkal and Chennai

Our beloved patron Dr.S.Ramalingam makes his humble contribution to society by providing quality education. He owes everything to his beloved alma mater Annamalai University and his loving mother Shri Rukmani Ammal who inspired him, nurtured him and groomed him.

Our Poompuhar Ramalingam Institute of Science and Technology (PRIST) Institution, a Deemed to be University, Thanjavur, Tamil Nadu is recognized by UGC under Section 3 of Act 1956, is one of the renowned institutions and a quality education service more than 10 years in providing.

PROFILE OF THE SCHOOL OF EDUCATION

The School of education under Poompuhar Ramalingam Institute of Science and Technology (PRIST) was established at Vallam, Thanjavur in the year 2008. The School of Education currently offers full time M.Ed ,M.Ed ,M.Phil programmes and Full time / Part time Ph.D Programme to uplift the poor and marginal students. School of Education is contributing its best to promote research and to acquire professional skills to the rural students and to bring out their latent talents in the mind of the rural students.

CERTIFICATE PROGRAMME IN GUIDANCE

The Certificate Programme in Guidance (CIG) caters the needs of teachers, parents, psychologists, counsellors, interested general public and children upto 18 years of their basic learning, emotional and social development. This is an awareness programme which will help you in dealing with the problems faced by the children. The programme is developed in collaboration with the National Council of Educational Research and Training (NCERT), Delhi. Various study centres are functioning in different districts.

PROGRAMME OBJECTIVES

The programme has been specially designed to help you acquire knowledge and skills for children's

[illegible] to enable them to become [illegible] citizens. You will know concepts, principles and skills for children's [illegible] education. You will know concepts, principles and skills for children's [illegible] education. You will know concepts, principles and skills for children's [illegible] education

SCHOOL OF EDUCATION
VALUE ADDED COURSE IN
Modern Pedagogical Techniques

ABOUT THE DEPARTMENT

Established in the year 2008.

Affiliated to Bharathidasan University in 2008.

Recognized by National Council for Teacher Education, Southern Regional Committee, Bhopal, Madhya Pradesh, India.

Approved by Higher Education Department, Government of Tamil Nadu, Chennai.

Member of Association of Indian Universities, New Delhi.

Member of Association of Commonwealth Universities, London.

Member of Indian Council of Engineering & Technology, New Delhi.

Member of Association of Indian Universities, Madurai.

Member of Association of Universities in Tamil Nadu, Trichy, Pondicherry, Kumbakonam & Chennai.

Our beloved Founder Late Dr.P.Manickam makes his humble contribution to society by providing quality education. He was an ardent follower of his beloved Guru Sri.Ponnaiah and his inspiration Shri. Rooshpa Ramanujam who inspired him, nurtured him and guided him.

Our Ponnaiyah Ramajayam Institute of Science and Technology (PRIST) Institution, a Deemed to be University, Thanjavur, Tamil Nadu is recognized by UGC Under Section 3 of Act 1956, is one of its renowned institutions and is quality education served more than 30 years in promoting.

PROFILE OF THE SCHOOL OF EDUCATION

The School of education under Ponnaiyah Ramajayam Institute of Science and Technology (PRIST) was established at Vallam, Thanjavur in the year 2008. The School of Education runs the full time B.Ed, M.Ed, M.Phil programmes and Full time / Part time Ph.D Programmes to uplift the poor and marginal students. School of Education is contributing its best to promote research and to impart educational skills to the rural students and to bring out their latent talents in the mind of the rural students.

CERTIFICATE PROGRAMME IN GUIDANCE

The Certificate Programme in Guidance (CIG) caters to the needs of teachers, parents, social workers and others interesting guiding children and teenage group of 3-18 years for their better learning, social-emotional development. This is an awareness programme, which will help you in dealing with the problems faced by the children. The programme is developed in collaboration with the National Council of Educational Research and Training (NCERT), Delhi, the apex body concerned with school education in the country.

HOW WILL THIS PROGRAMME HELP YOU?

The programme has been specially designed to help you develop an understanding of child development. You will know how an individual learns, adjusts and interacts in the environment. You will know concepts and processes involved in guiding elementary school children for integrated socio-emotional development. You will be able to identify children with special needs and problems. This programme will suggest strategies to facilitate all round development of children.

TARGET GROUP

This programme is meant for a target group consisting teachers, parents, social workers, personnel from voluntary agencies, any individual who is interested in understanding and guiding children.

ELIGIBILITY

Teachers working in primary schools

Age group: 21 & above, educational qualification: 12 years pass

PROGRAMME STRUCTURE

National Open Programme Module

INSTRUCTIONAL SYSTEM

UNIT – 1 – Innovative Techniques

Group analysis: Meaning - Methods - Brain Storming: Meaning - Methods - Micro Teaching Technique: Meaning - Characteristics - Procedure - Phases -Principles - Teaching Skills -Set induction - Reinforcement - Posing Questions - Stimulus Variation - Closure - Black Board Skills - Advantages - Disadvantages.

UNIT – 2 – Individualized Instructions

Programmed Learning - Concept - Characteristics - Principles - Styles of Program

Inquiry-Based Learning - Concept - Characteristics - Misconceptions - Criticism - Mind Map - Concept - Characteristics - Examples.

UNIT – 3 – Educational Approaches

Cooperative Learning - Meaning -Techniques - Benefits - Dramatization - Meaning - Importance - Types - Advantages - Limitations -Gamification - Meaning - Techniques - Design - Applications

UNIT – 4 – Audio-Visual Aids

Need for Audio Visual Aids - Role of Audio Visual Aids - Purpose - Print Resources - Newspaper - Magazines - Journal - Encyclopaedia - Audio Resources – DVDs - CD - Visual Resources - Pictures - Flash card - Charts- Posters – Photographs- Models - ICT Resources -Television – Internet- Multimedia.

UNIT – 5 – Interactive Electronic Whiteboard

Highlights - Features - General operation and use - Classroom

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PRIST Deemed to be University
THANJAVUR - 613 403.

ELIGIBILITY

Teachers working in primary schools

Age group: 21 & above, educational qualification: 12 years pass

PROGRAMME STRUCTURE

National Open Programme Module

INSTRUCTIONAL SYSTEM

UNIT – 1 – Innovative Techniques

Group analysis: Meaning - Methods - Brain Storming: Meaning - Methods - Micro Teaching Technique: Meaning - Characteristics - Procedure - Phases -Principles - Teaching Skills -Set induction - Reinforcement - Posing Questions - Stimulus Variation - Closure - Black Board Skills - Advantages - Disadvantages.

UNIT – 2 – Individualized Instructions

Programmed Learning - Concept - Characteristics - Principles - Styles of Program

Inquiry-Based Learning - Concept - Characteristics - Misconceptions - Criticism - Mind Map - Concept - Characteristics - Examples.

UNIT – 3 – Educational Approaches

Cooperative Learning - Meaning -Techniques - Benefits - Dramatization - Meaning - Importance - Types - Advantages - Limitations -Gamification - Meaning - Techniques - Design - Applications

UNIT – 4 – Audio-Visual Aids

Need for Audio Visual Aids - Role of Audio Visual Aids - Purpose - Print Resources - Newspaper - Magazines - Journal - Encyclopaedia - Audio Resources – DVDs - CD - Visual Resources - Pictures - Flash card - Charts- Posters – Photographs- Models - ICT Resources -Television – Internet- Multimedia.

UNIT – 5 – Interactive Electronic Whiteboard

Highlights - Features - General operation and use - Classroom

DURATION

Minimum: 45 Hours

Maximum: 3 Months **PROGRAMME FEE: Rs. 100**

MEDIUM OF INSTRUCTION: English

For more details of the programme please contact:

The Dean

Or

The Programme Coordinator

Ponnaiyah Ramajayam Institute of Science & Technology (PRIST),

Deemed To Be University

Thanjavur. -613 403.

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SCHOOL OF EDUCATION
VALUE ADDED COURSE IN
TECHNICAL WRITING

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PRIST DEEMED TO BE UNIVERSITY
SCHOOL OF EDUCATION
VALUE ADDED COURSE
Course code: 22130VAC1 - Education and Socialization

Objectives:

- To enable the teacher trainees undertake action research to solve their professional problems.
- To reduce the gap between theory and practice, teacher and education curriculum and school realities.
- The course (B.Ed..) will provide adequate theoretical orientation regarding the objectives of education in the Indian Background.

Unit - I : Introduction : Conceptual clarity, Relationship between society, Education and Development.

Unit - II : Socialization and Education : Relations between socialization and Education, Agencies of socialization and Education: Family, Peer Groups, School and Media

Unit - III : Education, Inequalities and Social Justice: Concept of Equality of Educational Opportunity, Education and Disparities: Caste, Class, tribe, gender, rural-urban, Education and social mobility

Unit - IV : Emerging Trends in Education in India: School education: Existing scenario, Higher Education in India, Governance of Higher Education: Institutional programmes, National Educational policy 1986.

Outcomes:

- Applying teaching skills and dealing with classroom problems
- Evolving a system of education which enhances the potential of every learner to acquire, retain and transform knowledge leading to wisdom society through creative, experiential and joyful modes of learning.
- Transform the educational landscape by providing open access to quality, value based and socially relevant education to all by harnessing the disruptive potential of AI.
- Analysis of Curriculum, construction of blue print, selecting appropriate teaching strategies according to needs of students and conducting action research to solve classroom problems.

Reference book:

- Roberta Berns: Wadsworth Publishing Co Inc; 8th ed. edition (28 January 2009); CBS Publishers & Distributors Pvt. Ltd. -PH: 011-49344934 ISBN-13 : 978-0495603252
- Grusec, J.E., Lytton, H. (1988). Socialization and the Family. In: SocialDevelopment. Springer, New York, NY. https://doi.org/10.1007/978-1-4612-3768-6_5
- Psychology Press Ltd; 1st edition (28 November 2012) ISBN-13 : 978-0415651769

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PRIST DEEMED TO BE UNIVERSITY
SCHOOL OF EDUCATION
VALUE ADDED COURSE
Course code: 32130VAC2 - NCC

Objectives:

- To enable the teacher trainees undertake action research to solve their professional problems.
- To reduce the gap between theory and practice, teacher and education curriculum and school realities.
- The course (B.Ed.,) will provide adequate theoretical orientation regarding the objectives of education in the Indian Background.
- National Integration: Importance and Necessity

UNIT-I: The NCC
Aim and Objectives of NCC – Organization and Trainings and NCC Song
Incentives – National integration and Awareness- National Integration: Importance and Necessity.
Freedom Struggle and Nationalist Movement in India

UNIT- II: Drill, Weapon Training
Characteristics of a rifle and its ammunition- Stripping,assembling,careandcleaningof22Rifle
Loading ,cocking and unloading-Different positions for holding and aiming

UNIT- III: Personality Development and Leadership
Introduction to Personality development-Communication skills - Leadership traits-Time management- Disaster Management and Civil Affairs-types of Emergencies and Nature Disasters-Assistanceduring natural and other calamities:Floods,Cyclones, Earth quakes, Accidents.

UNIT- IV: Social Awareness Community Development-Basics of Social Service and its need. Contribution of youth towards social welfare-Civic responsibilities- Health and Hygiene
Hygiene and sanitation-Infectious and contagious diseases and it spravention.

UNIT- V: Adventure and Obstacle Training-Obstacle training- Environment Awareness and Conservation-Naturalresources-conservation and management-Water conservation and rain water Harvesting

Outcomes:

- Transform the educational landscape by providing open access to quality, value based and socially relevant education to all by harnessing the disruptive potential of AI.
- Analysis of Curriculum, construction of blue print, selecting appropriate teaching strategies according to needs of students and conducting action research to solveclassroom problems.

Reference books: Mindset (Carol S. Dweck, 2017): A liberating way to approach life, as per which everything great is work in progress. A must-read and the book I have gifted most often. Read here for more: Winning (Jack Welch, 2005): Probably the best book on leadership out there. Great advice which I keep on referring to regularly. Often while facing a difficult situation at work I am reminded of some of the learnings: "Don't run for office. You are already elected.", or how Candor is the biggest dirty little secret in education.
Good to Great (Jim Collins, 2001): One of the most popular business books. Concepts introduced in this book like Level 5 leadership, Stockdale's paradox, Flywheel & Hedgehog concept have become almost legendary.
Shoe Dog (Phil Knight, 2016): An adrenalin-pumping story of how Nike was built. If you are not into non-fiction and would like to start somewhere, this could be the perfect start!
Hit Refresh (Satya Nadella, 2017): A great read on leadership, empathy, and how to drive change. Learn how to transform an organization and a bit about partnerships and technology.

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PRIST DEEMED TO BE UNIVERSITY
SCHOOL OF EDUCATION
VALUE ADDED COURSE
Course code: 22130VAC3 – Health and Well-Being

Objectives:
To introduce the learners to the concept of health and wellness and it society
To introduce the learners to the concept to health and wellness and its relevance in daily life.
To introduce the learners to the relation between mind-body and its relevance.
To introduce learners to health behavior and promotion of human strengths for well-being evince daily life.
To introduce the learners to the relation between mind-body and its relevance.

UNIT-I: INTRODUCTION TO HEALTH & WELLNESS
Definition of health- WHO definition-Importance of health in everyday life-Components of health-physical, social, mental, spiritual and its relevance Concept of wellness-Mental Health & wellness-Determinants of health behaviors-Using the mass media for health promotion
UNIT-II: Mind-Body connection in health-concept and relation-Implications of mind-role connections. Well being-Digital wellbeing-Understanding health beliefs, and perspectives of indigenous people pertaining to Assam and North Estonia Promoting Human strengths and life enhancement Classification of human strengths and virtues; cultivating inner strengths: Hope and optimism
UNIT-III: Science of Wellbeing is an evolving science with contributions from multiple disciplines including, Psychology , Sociology , Health & Physical Education , Nutrition , Environmental Science and Finance. With the distinct knowledge base of social and behavioral science at its core , it began as a branch of social science and has since evolved. The term Wellbeing encompasses Holistic Health and Happiness, in addition to positive functioning of physical , emotional and social domains.
UNIT-IV: In modern world, " Wellbeing " is referred as stress free living and happiness in terms of positive psychological interventions, good physical functioning in terms of health, nutrition and physical education as well as financial security in terms of commercial studies.
UNIT-V: The subject being offered at the Higher Secondary level under the West Bengal Council of Higher Secondary Education provides the scope for the students to choose higher education and vocational degree course involving Psychology , Physical Education , Sociology and Nutrition for career opportunities as Psychologist , Motivational speaker , Wellbeing Counselor , Physical educator and Yoga Therapist , Nutritionist and Diet Therapist etc.

LEARNER OUTCOMES:
After completion of this course the learner will be able to:
Explain the concept and nature of health, wellness and it various implications
Demonstrate update knowledge on well-being and promotion of healthy behavior.

REFERENCE BOOK

1. Carr, A. (2004). *Positive Psychology: The science of happiness and human strength*. UK: Routledge.
2. Fordham, M. (2003). *Advanced psychology: Health psychology*. London: Hodder and Stoughton.
3. Hall, J.W. (1965). *Fifty signs of Mental Health: A Guide to understanding mental health*. Yale University Press.
4. Snyder, C.R., & Lopez, S.J. (2001). *Positive psychology: The scientific and practical explorations of human strengths*. Thousand Oaks, CA: Sage.

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PRIST DEEMED TO BE UNIVERSITY
SCHOOL OF EDUCATION
VALUE ADDED COURSE
Course code: 22EDVAC01 – Modern Pedagogical Techniques

Objectives:

- Explain the concept of group analysis, Brain storming, Micro teaching ,different types of techniques, programmed, inquired, co-operative learning and mind mapping with illustration
- Describe the innovative medias involved in teaching and learning process such as M- Learning and I- Learning in the classrooms
- Familiar with online Learning Tools which are used to connect the learners to teachers

UNIT – 1 – Innovative Techniques
Group analysis: Meaning – Methods – Brain Storming: Meaning – Methods – Micro Teaching Technique: Meaning – Characteristics – Procedure – Phases –Principles – Teaching Skills: Set induction – Reinforcement – Probing Questions – Stimulus Variation – Closure – Black Board Skills – Advantages – Disadvantages.
UNIT – 2 – Individualized Instructions
Programmed Learning – Concept – Characteristics – Principles – Styles of Program –Inquiry based learning – Concept – Characteristics – Misconception – Criticism – Mind Map – Concept – Characteristics – Examples.
UNIT – 3 – Educational Approaches
Cooperative Learning – Meaning – Techniques – Benefits – Domestication – Meaning – Importance – Types – Advantages – Limitations –Gamification – Meaning – Techniques – Designs – Applications
UNIT – 4 – Audio-Visual Aids
Need for Audio Visual Aids – Role of Audio Visual Aids – Purpose – Print Resources – Newspaper – Magazines – Journal – Encyclopaedia – Audio Resources – AVIDS – CD – Visual Resources – Pictures – Flash card – Charts– Posters – Photographs– Models – ICT Resources – Television – Internet – Multimedia
UNIT – 5 – Interactive Electronic Whiteboard
Highlights – Features – General operation and use – Classroom uses – Benefits – Criticisms

Outcomes:
practice the group analysis, Brain storming and Micro teaching and understanding the application of mind mapping and obtaining knowledge in programmed, cooperative and inquiry based learning
Apply of the innovative medias involved in teaching and learning process such as M- Learning and I- Learning can be practiced in the class room

Reference book:

- **Berning,P.J and Tedrey,M. (2010)** Computational Thinking. The MIT Press.
- **Flattey, Joseph J. (2011)** Augmented reality at the Allard Pierson Museum in Netherlands
- **Higgins,S.,Xiao,Z. (2012)** The Impact of Digital Technology on learning: A summary for the Education Endowment Foundation. London.
- **Rajasekar,S. and Raja Goosain,D.(2013)** Methods of Teaching of Computer Science,Hyderabad: Brilliant Publishers PVT Ltd.

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PRIST DEEMED TO BE UNIVERSITY
SCHOOL OF EDUCATION
VALUE ADDED COURSE
Course code: 22130VAC45- Technical Writing

Objectives:

- This course aims to provide conceptual understanding of developing strong foundation in general writing, including research proposal and reports.
- It covers the technological developing skills for writing Article, Blog, E-Book, Commercial web Page design, Business Listing Press Release, E-Listing and Product Description.
- This course aims to provide conceptual understanding of innovation and entrepreneurship development

UNIT-I Introduction to Technical Communication: What Is Technical Communication? The Challenges of Producing Technical Communication, Characteristics of a Technical Document, Measures of Excellence in Technical Documents, Skills and Qualities Shared by Successful Workplace Communicators, How Communication Skills and Qualities Affect Your Career? Understanding Ethical and Legal Considerations: A Brief Introduction to Ethics, Your Ethical Obligations, Your Legal Obligations, The Role of Corporate Culture in Ethical and Legal Conduct, Understanding Ethical and Legal Issues Related to Social Media, Communicating Ethically Across Cultures, Principles for Ethical Communication Writing Technical Documents: Planning, Drafting, Revising, Editing, Proofreading Writing Collaboratively: Advantages and Disadvantages of Collaboration, Managing Projects, Conducting Meetings, Using Social Media and Other Electronic Tools in Collaboration, Importance of Word Press Website, Gender and Collaboration, Culture and Collaboration.

UNIT-II: Introduction to Content Writing: Types of Content (Article, Blog, E-Books, Press Release, Newsletters Etc), Exploring Content Publication Channels. Distribution of your content across various channels, Blog Creation: Understand the psychology behind your web traffic, Creating killing landing pages which attract users, Using Landing Page Creators, Setting up Accelerated Mobile Pages, Identifying UI UX Experience of your website or blog. Organizing Your Information: Understanding Three Principles for Organizing Technical Information, Understanding Conventional Organizational Patterns, Emphasizing Important Information: Writing Clear, Informative Titles, Writing Clear, Informative Headings, Writing Clear Informative Lists, Writing Clear Informative Paragraphs.

UNIT-III: Creating Graphics: The Functions of Graphics, The Characteristics of an Effective Graphic, Understanding the Process of Creating Graphics, Using Color Effectively, Choosing the Appropriate Kind of Graphic, Creating Effective Graphics for Multicultural Readers. Researching Your Subject: Understanding the Differences Between Academic and Work place Research, Understanding the Research Process, Conducting Secondary Research, Conducting Primary Research, Research and Documentation: Literature Reviews, Interviewing for Information, Documenting Sources, Copy right, Paraphrasing, Questionnaires. Report Components: Abstracts, Introductions, Tables of Contents, Executive Summaries, Feasibility Reports, Investigative Reports, Laboratory Reports, Test Reports, Trip Reports, Trouble Reports

UNIT- IV Writing Proposals: Understanding the Process of Writing Proposals, The Logistics of Proposals, The Deliverables of Proposals, Persuasion and Proposals, Writing a Proposal, The Structure of the Proposal. Writing Informational Reports: Understanding the Process of Writing Informational Reports, Writing Directives, Writing Field Reports, Writing Progress and Status Reports, Writing Incident Reports, Writing Meeting Minutes, Writing Recommendation Reports:

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Understanding the Role of Recommendation Reports, Using a Problem-Solving Model for Preparing Recommendation Reports, Writing Recommendation Reports, Reviewing, Evaluating, and Testing Documents and Websites: Understanding Reviewing, Evaluating, and Testing, Reviewing Documents and Websites, Conducting Usability Evaluations, Conducting Usability Tests, Using Internet tools to check writing Quality, Duplicate Content Detector, What is Plagiarism?, How to avoid writing plagiarism content? Innovation management; an introduction: The importance of innovation, Models of innovation, Innovation as a management process, Market adoption and technology diffusion: Time lag between innovation and useable product, Innovation and the market.

UNIT- V Managing innovation within firms: Organisations and innovation, The dilemma of innovation management, Innovation dilemma in low technology sectors, Dynamic capabilities, Managing uncertainty, Managing innovation projects. Operations and process innovation: Operations management, The nature of design and innovation in the context of operations, Process design, Process design and innovation Managing intellectual property: Intellectual property, Trade secrets, An introduction to patents, Trademarks, Brand names, Copyright Management of research and development: What is research and development?, R&D management and the industrial context, R&D investment and company success, Classifying R&D, R&D management and its link with business strategy, Strategic pressures on R&D, Which business to support and how?, Allocation of funds to R&D, Level of R&D expenditure Managing R&D projects: Successful technology management, The changing nature of R&D management, The acquisition of external technology, Effective R&D management, The link with the product innovation process, Evaluating R&D projects.

Reference book:

Mike Markel 2014Technical Communication Bedford/St.Martin's
Paul Tratt 2017 Innovation Management and New Product Development
Gerald J.
Alred . Charles T. Brusaw . Walter E. Oliu 2008 . Handbook of Technical Writing

Outcomes

CO1: Develop technical documents that meet the requirements with standard guidelines. Understanding the essentials and hands-on learning about effective Website Development.
CO2: Write Better Quality Content Which Ranks faster in Search Engines. Build effective Social Media Pages.
CO3: Evaluate the essentials parameters of effective Social Media Pages.
CO4: Understand importance of innovation and entrepreneurship.
CO5: Analyze research and development projects

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1.3.2
2022-23

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SCHOOL OF ARTS AND SCIENCE

DEPARTMENT OF MATHEMATICS

ADD-ON COURSE

CIRCULAR

Department of Mathematics / ODD /2022-2023

It is hereby informed that the department is organizing add on courses (Certificate & Diploma courses) for the academic year 2022-2023. Students those who are interested register your name to the Department of Mathematics..

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SCHOOL OF ARTS AND SCIENCE
DEPARTMENT OF MATHEMATICS

This is to inform all the UG students of Mathematics Department that the value added programme classes for Odd Semester academic Year 2022-2023 will be commenced from 18-07-2022. Hence requesting all the registered students to attend the class without fail.

Branch name	Year	Course offered
MATHEMATICS	I UG, II UG & IIIUG	Diploma in mathematics for recruitment exam Certificate Course in R- Programming Certificate Course in MATHEMATICA

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Course Code	22512MRE	TITLE OF THE COURSE	L	T	P	C
Value Added		MATHEMATICS FOR RECRUITMENT EXAM	4	1	-	4
Pre-requisite		Knowledge in Competitive oriented Skill	Syllabus Version		2022-23	

Course Objectives

The main objectives of this course are to:

1. Understand the operations and functions of R Programming
2. Perform statistical analysis using built-in functions
3. Learn and write customized program for mathematical and statistical problems

Expected Course Outcomes

On the successful completion of the course, student will be able to:

1	Understand the basics Maths Skill	K2
2	Apply the logical skills for performing statistical analysis	K4
3	Use appropriate plots, charts and diagrams for all kinds of data	K3
4	Perform parametric methods	K3
5	Write and execute the coding theory	K6

K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create

Unit:1	Numbers and Basic operations, Fractions and Decimal Numbers, Percentage, Profit and Loss, Simple and Compound Interest, Ratio and Proportion
Unit:2	Time and Distance, Time and Work, Speed, Average,

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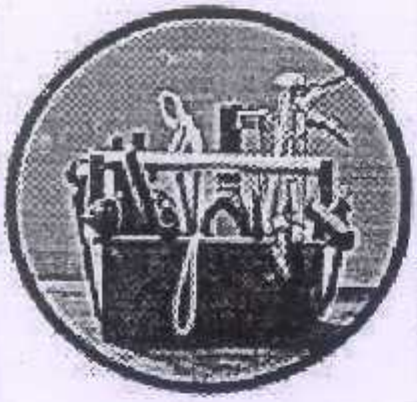
Unit:3	Laws of Exponents, Mensuration.
Unit:4	Progression, Series, Problems of Mathematical Signs, Finding Position, Analogy, Odd one out
Unit:5	Coding and Decoding, Family Relations, Direction Problems, Time and Angles, Time in a clock and it's Reflection's, Date and Calendar
Books for Study	
1	Handbook of Mathematics by Arihant Experts
2	For Competitive Exams Vedic Mathematics by Ramnandan Shastri
3	Objective Arithmetic (SSC & Railway Exam Special) by R.S Aggarwal
Reference Books	
1	Quantitstive Aptitude for Competitive Examinations Abhijit Guha

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ABOUT THE UNIVERSITY

PRIST University, Ponnaiyah Ramajayam Institutions, made a foray into the Academic Domain, with the establishment of Sri Ram Institute of Computer Science and Technology in 1985. Over time, various institutions of higher learning such as Arts and Science College, College of Engineering and Technology, College of Education, Research Institution, Polytechnic college are added feathers to the PRIST crown. Today, PRIST commands a massive student base, spread across a whole array of campuses such as Puducherry, Trichy, Kumbakonam, Chennai and Madurai. The Academic research extends right form school education upto the level of the Ph.D Doctoral programmes in a rich array of disciplines such as Medicine, Engineering, Arts & Science, education , Pharmacy, Management, Technology etc.

ABOUT FACULTY OF MATHEMATICS

High quality teaching across a broad range of disciplines Promoting world class research in mathematics. Dedicate the communication expansion and integration of knowledge through excellence and to make the institution campus as a centre of academic excellence in mathematics.

REGISTRATION FORM

Name of the student: _____

Department : _____

Gender : _____

Register Number : _____

Address for communication: _____

Mobile number: _____

Email Address: _____

Name and Signature of the Candidate

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ADD-ON COURSES

Diploma in

MATHEMATICS FOR RECRUITMENT EXAM

22512MRE

2022-2023

School of Arts and Science
Department of Mathematics

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Course Code	22512VARP	TITLE OF THE COURSE	L	T	P	C
Value Added		R- Programming	4	1	-	4
Pre-requisite		Knowledge in object oriented language	Syllabus Version		2022-23	

Course Objectives

The main objectives of this course are to:

1. Understand the operations and functions of R Programming
2. Perform statistical analysis using built-in functions
3. Learn and write customized program for mathematical and statistical problems

Expected Course Outcomes

On the successful completion of the course, student will be able to:

1	Understand the basics of R Language	K2
2	Apply the logical skills for performing statistical analysis	K4
3	Use appropriate plots, charts and diagrams for all kinds of data	K3
4	Perform parametric methods	K3
5	Write and execute the code for multivariate analysis	K6

K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create

Unit:1	Essentials of R Language
	Expressions and objects, Assignments, creating vectors, Vectors, vector arithmetic, logical vectors, Index vectors, objects, their modes and attributes, ordered and unordered factors

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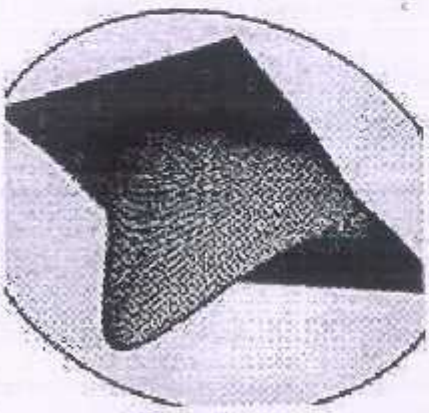
School of [illegible]
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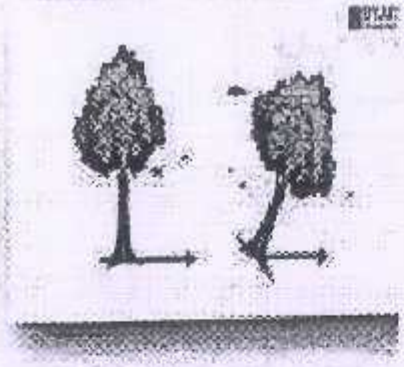
Unit:2	**Basic Operations and functions**
	Arrows and matrices, List and data frames, List and data frames, conditional statements - functions – built-in and user defined; Data entry – reading from text file, data editor; examples.
Unit:3	**Basic Statistics and Graphical methods**
	Descriptive Statistics and Graphics: Obtaining summary statistics; generating tables; Bar plots, Pie charts, Box plots, Histogram; exercises.
Unit:4	**Probability distributions and Statistical Inference**
	Probability and Distributions: obtaining density, cumulative density and quantile values for discrete and continuous distributions; generating samples from discrete and continuous distributions; Plotting density and cumulative density curves, parametric and non-parametric methods
Unit:5	**Model building and Multivariate Analysis**
	Correlation: Pearson, Spearman and Kendall's correlation; Regression – fitting, obtaining residuals and fitted values; one and two sample tests for mean and variance – one way and two way ANOVA, Multivariate analysis
Books for Study	
1	Purohit, S. G., Gore, S. D., and Deshmukh, S. R. (2009). Statistics Using R, Narosa Publishing House, New Delhi.
2	Dalgaard, P. (2008). Introductory Statistics with R, Second Edition, Springer
3	Crawley, M. J. (2007). The R Book, John Wiley and Sons Private Ltd., NY
Reference Books	
1	De Vries, A., and Meys, J. (2016). R For Dummies, Second Edition, John Wiley & Sons Private Ltd, NY

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ABOUT THE UNIVERSITY

PRIST University, Ponnaiyah Ramajayam Institutions, made a foray into the Academic Domain, with the establishment of Sri Ram Institute of Computer Science and Technology in 1985. Over time, various institutions of higher learning such as Arts and Science College, College of Engineering and Technology, College of Education, Research Institution, Polytechnic college are added feathers to the PRIST crown. Today, PRIST commands a massive student base, spread across a whole array of campuses such as Puducherry, Trichy, Kumbakonam, Chennai and Madurai. The Academic research extends right form school education upto the level of the Ph.D Doctoral programmes in a rich array of disciplines such as Medicine, Engineering, Arts & Science, education, Pharmacy, Management, Technology etc.

ABOUT FACULTY OF MATHEMATICS

High quality teaching across a broad range of disciplines. Promoting world class research in mathematics. Dedicate the communication expansion and integration of knowledge through excellence and to make the institution campus as a centre of academic excellence in mathematics.

REGISTRATION FORM

Name of the student: .....

Department : .....

Gender : .....

Register Number : .....

Address for correspondence: .....

Mobile number: .....

Email Address: .....

Name and Signature of the Candidate

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ADD-ON COURSES
Certificate in

R-PROGRAMMING
22512VARP

2022-2023

School of Arts and Science
Department of Mathematics

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Course Code	22S12VAM	TITLE OF THE COURSE	L	T	P	C
Value Added		MATHEMATICA	4	1	-	4
Pre-requisite		Knowledge in object oriented language	Syllabus Version		2022-23	

Course Objectives

The main objectives of this course are to:

- Learn the applications of mathematics in real life problems.
- Understand the suitable methods to adopt the problem using several mathematical concepts.

Expected Course Outcomes

On the successful completion of the course, student will be able to:

1	Understand the basics of R Language	K2
2	Apply the logical skills for performing statistical analysis	K4
3	Use appropriate plots, charts and diagrams for all kinds of data	K3
4	Perform parametric methods	K3
5	Write and execute the code for multivariate analysis	K6

K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create

Unit:1	Solving higher degree equations. Solving system of equations by matrix method and find the eigen values and eigen vectors of a matrix of order 4 by 4 or higher order
Unit:2	Solving system of non-linear equations. Finding the differentiation of different functions

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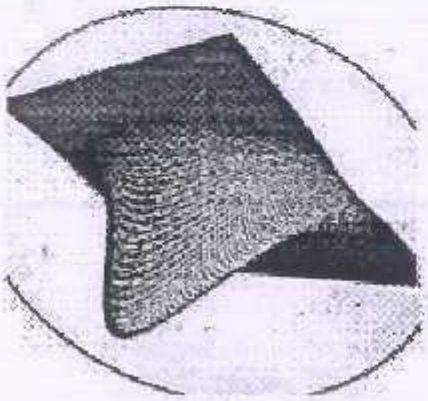
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	of second and third derivatives.
Unit:3	Finding the integration of different functions with limits. Evaluation of double integrals and triple integrals#.
Unit:4	Solving ordinary differential equations with initial condition. Solving system of ordinary differential equations.
Unit:5	Creating and plotting 2-D and 3-D graphs. Solving Linear programming problems. Self-study portion.
Books for Study	
1	Eugene Don, Mathematica, Schaum's Outline Series, Mc Graw Hill Publisher, New York. (2009)
2	Pragathi Gautam and Swapnil Verma, Practical Mathematica, Ane Books Publisher (2019).
Reference Books	
1	Ananta Kumar Bora, Mathematica: A Research Book of Mathematics, Scholarink Publishers (2017)

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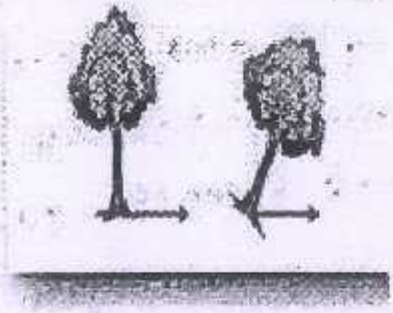
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ABOUT FACULTY OF MATHEMATICS

High quality teaching across a broad range of disciplines Promoting world class research in mathematics. Dedicate for communication expansion and integration of knowledge through excellence and to make the institution campus as a centre of academic excellence in mathematics.

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ADD-ON COURSES
Certificate in

MATHEMATICA
22512VAM

2022-2023

REGISTRATION FORM

Name of the student: .....
Department : .....
Gender : .....
Register Number : .....
Address for communication: .....

Mobile number: .....
Email Address: .....

Name and Signature of the Candidate

School of Arts and Science
Department of Mathematics

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SCHOOL OF ARTS AND SCIENCE

DEPARTMENT OF MATHEMATICS

ADD-ON COURSE

CIRCULAR

Department of Mathematics / Even /2022-2023

It is hereby informed that the department is organizing add on courses (Certificate & Diploma courses) for the academic year 2022-2023. Students those who are interested register your name to the Department of Mathematics.

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SCHOOL OF ARTS AND SCIENCE

DEPARTMENT OF MATHEMATICS

This is to inform III UG students of English Department that the value added programme classes for Even Semester academic Year 2022 – 2023 will be commenced from 03 – 02 – 2023. Hence requesting all the registered students to attend the class without fail.

Branch name	Year	Course offered
ENGLISH	III UG	Certificate Course in Statistics Certificate Course in Quantitative Aptitude

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Course Code	22S12VAS	TITLE OF THE COURSE	L	T	P	C
Value Added		STATISTICA	4	1	-	4
Pre-requisite		Knowledge in Mathematics Optimistic technique oriented Skill	Syllabus Version		2023-24	

Course Objectives

The main objectives of this course are to:

1. Understand the operations and functions of Statistics
2. Perform statistical analysis using computer language
3. Learn and write customized program for mathematical and statistical problems

Expected Course Outcomes

On the successful completion of the course, student will be able to:

1	Understand the basics Statistics Skill	K2
2	Apply the logical skills for performing statistical analysis	K4
3	Use appropriate plots, charts and diagrams for all kinds of data	K3
4	Perform parametric methods	K3
5	Write and execute the coding theory	K6

K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create

Unit:1	**Data Interpretation**
	Bar graph,Pie chart,Line graph,Histogram,Frequency Distribution,Graphical

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	Representation of Data,Tabular DI,Missing Case DI,Caselet DI
Unit:2	**Numerical Problems**
	Number Series,Simplification & Approximation,Sequences and Series,Missing term/Wrong term
Unit:3	**Data Sufficiency**
	Problems on Age,Mixture and Alligations,Direction & Distance,Pipe and Cistern Problems,Partnership,Statistics,Probability
Unit:4	**Geometry**
	Three Dimensional Geometry,Geometric Progression,Geometric Shapes
Unit:5	**Other Miscellaneous Problems**
	Percentage,Simple Interest,Compound Interest,Profit and Loss,Decimal Fractions,HCF and LCM,Ratio to Percentage,Ratio and Proportion,Time and Distance,Time and Work
Books for Study	
1	Rapid Quantitative Aptitude - Book of Shortcuts & Tricks for Competitive Exams 1st Edition, Kindle Editionby Disha Experts
2	Aptitude work book by Ian bundae

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Course Code	22512QA	TITLE OF THE COURSE	L	T	P	C
Value Added		QUANTITATIVE APTITUDE	4	1	-	4
Pre-requisite		Knowledge in Mathematics sanguine method leaning skill	Syllabus Version		2023-24	

Course Objectives

The main objectives of this course are to:

1. Understand the operations and functions of Statistics
2. Perform statistical analysis using computer language
3. Learn and write customized program for mathematical and statistical problems

Expected Course Outcomes

On the successful completion of the course, student will be able to:

1	Understand the basics Statistics Skill	K2
2	Apply the logical skills for performing statistical analysis	K4
3	Use appropriate plots, charts and diagrams for all kinds of data	K5
4	Perform parametric methods	K3
5	Write and execute the coding theory	K6

K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create

Unit:1	PERMUTATIONS AND COMBINATIONS
	Problems on linear arrangement, Problems on circular arrangement, Problems when repetitions are allowed, Problems on selections.
Unit:2	PROBABILITY
	Problems on coins, dice, leap year and non-leap year, Problems on deck of cards, balls,

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	Problems on addition and multiplication theorems.
Unit:3	PROFIT & LOSS
	Problems on cost price and selling price. Problems on marked price and discount, Problems on cost price, selling price, marked price.
Unit:4	PROGRESSIONS & CRYPT-ARITHMATIC
	Problems on AP, GP & HP Problems on crypt-arithmetic
Unit:5	GEOMETRY
	Problems on lines, angles, triangles, Problems on quadrilaterals, Problems on polygons, circles.
Books for Study	
1	Quantitative Aptitude for Competitive Examinations Book by Dinesh Khattar
2	Quantitative Aptitude: Complete Study Material for Different Entrance and Competitive Examinations by V. K. Sachan.

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ADD-ON COURSE

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SCHOOL OF ARTS AND SCIENCE
DEPARTMENT OF MATHEMATICS

This is to inform all the PG students of Mathematics Department that the value added programme classes for Odd Semester academic Year 2022-2023 will be commenced from 18-07-2022. Hence requesting all the registered students to attend the class without fail.

Branch name	Year	Course offered
MATHEMATICS	II PG	Certificate Course in LIE GROUPS & LIE ALGEBRAS

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Course Code	22512LGLA	TITLE OF THE COURSE	L	T	P	C
Value Added		LIE GROUPS & LIE ALGEBRAS	4	1	-	4
Pre-requisite		Knowledge in basic algebra	Syllabus Version		2021-22	

Course Objectives

The main objectives of this course are to:

1. In physics, Lie groups appear as symmetry groups of physical systems, and their Lie algebras (tangent vectors near the identity) may be thought of as infinitesimal symmetry motions.
2. Lie algebras and their representations are used extensively in physics, notably in quantum mechanics and particle physics.

Expected Course Outcomes

On the successful completion of the course, student will be able to:

1	Understand the basics of R Language	K2
2	Apply the logical skills for performing statistical analysis	K4
3	Use appropriate plots, charts and diagrams for all kinds of data	K3
4	Perform parametric methods	K3
5	Write and execute the code for multivariate analysis	K6

K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create

Unit:1	
	Matrix-Lie Groups
Unit:2	
	The Matrix Exponential
Unit:3	
	Lie Algebras
Unit:4	
	Basic Representation Theory
Unit:5	
	Semi-simple Lie Algebras

Books for Study

1	Brain Hall, Lie Groups, Lie Algebras and Representations: An Elementary Introduction (Second Edition), Springer, USA, 2015.

Reference Books

1	V. S. Varadarajan, Lie groups, Lie algebras and their representations, Springer 1984.
2	A. W. Knapp, Representation theory of semi-simple Lie groups. An overview based on examples, Princeton university press 2002.
3	S. Kumaresan S, A course in differential geometry and Lie groups, Texts and Readings in Mathematics, 22. Hindustan Book Agency, New Delhi, 2002.

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

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PRIST University, Ponnaiya Ramajayam Institutions, finds a foray into it Academic Domain, with the establishment o Sri Ram Institute of Computer Science an Technology in 1989. Over time, variou institutions of higher learning such as Arts an Science College, College of Engineering an Technology, College of Education, Researc Institution, Polytechnic college are addi feathers to the PRIST crown. Today, PRIS commands a massive student base, spreo across a whole array of campuses such a Puducherry, Trichy, Kumbakonam, Chennai an Madurai. The Academic research extends rig from school education upto the level of the Ph.I Doctoral programmes in a rich array o disciplines such as Medicine, Engineering, Ar & Science, education, Pharmacy, Managemen Technology etc.

ABOUT FACULTY OF MATHEMATICS

High quality teaching across a broa range of disciplines Promoting world clas research in mathematics, Dedicate - th communication expansion and integration o knowledge through excellence and to make th institution campus as a centre of academi excellence in mathematics.

REGISTRATION FORM

Name of the student: _____

Department : _____

Gender : _____

Register Number : _____

Address for communication: _____

Mobile number: _____

Email Address: _____

Name and Signature of the Candidate

ADD-ON COURSES

Certificate in

LIE GROUPS & LIE ALGEBRAS

22512LGLA

2022-2023

School of Arts and Science
Department of Mathematics

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26	21.9.22	Dr. S. Subramanian	
27	23.9.22	D.R.Kirubaharan	
28	26.9.22	Dr. S. Subramanian	
29	28.9.22	D.R.Kirubaharan	
30	3.9.22	Dr. S. Subramanian	



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ACADEMIC YEAR 2022 – 2023

Certificate of Appreciation

This is to certify that Ms/Mr S. Yugesh Kumar (21UMA20101)

has completed the Value Added Course on

LIE GROUPS & LIE ALGEBRA-22512LGLA

From 18.7.22 to 3.10.23 during the Academic year of 2022-2023

Course Co-ordinator

HOD

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ADD-ON COURSE

CIRCULAR

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SCHOOL OF ARTS AND SCIENCE

DEPARTMENT OF MATHEMATICS

This is to inform PG students of English Department that the value added programme classes for Even Semester academic Year 2021 – 2022 will be commenced from 03 – 02 – 2022. Hence requesting all the registered students to attend the class without fail.

Branch name	Year	Course offered
Mathematics	PG	Certificate Course in MACHINE LEARNING

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Course Code	20512ML	TITLE OF THE COURSE	L	T	P	C
Value Added		MACHINE LEARNING	4	1	-	4
Pre-requisite		Knowledge in basic algebra	Syllabus Version		2021-22	

Course Objectives

The main objectives of this course are to:

- To Learn about Machine Intelligence and Machine Learning applications To implement and apply machine learning algorithms to real-world applications.
- To identify and apply the appropriate machine learning technique to classification, pattern recognition, optimization and decision problems.
- To understand how to perform evaluation of learning algorithms and model selection.
- To understand about the basic theory of problem solving paradigms and search strategies in artificial intelligence
- To make the students familiar with knowledge representation, planning, learning, natural language processing and robotics

Expected Course Outcomes

On completion of the course students will be expected to:

1	Have a good understanding of the fundamental issues and challenges of machine learning: data, model selection, model complexity, etc	K2
2	Have an understanding of the strengths and weaknesses of many popular machine learning approaches	K4
3	Appreciate the underlying mathematical relationships within and across Machine Learning algorithms and the paradigms of supervised and unsupervised learning	K3
4	Be able to design and implement various machine learning algorithms in a range of real-world applications	K3
5	Understand the computation intelligence	K6

K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create

Unit:1	
	Introduction to ML
Unit:2	
	Fundamentals of ML
Unit:3	
	Selected Algorithms
Unit:4	
	Neural Network Learning
Unit:5	
	Key Concepts from ML

Books for Study

1	Marc Peter Deisenroth, A. Aldo Faisal, Cheng Soon Ong, Mathematics for Machine Learning, Cambridge University Press (23 April 2020
2	Tom M. Mitchell- Machine Learning - McGraw Hill Education, International Edition

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PRIST University, formerly Deemed University, started functioning from the Academic Session 2006-07 with the establishment of Sri Ram Institute of Computer Science and Technology in 1988. Over time, various institutions of higher learning such as Arts and Science College, College of Engineering and Technology, College of Education, Research Institutes, Polytechnic colleges are added further to the PRIST network. Today, PRIST encompasses a creative student base, spread across a wide array of campuses such as Polytechnic, Under Graduate, Post Graduate, Courses and Medicine. The Academic research which right from school education upto the level of the Ph.D Degree programmes in a rich array of disciplines such as Medicine, Engineering, Arts & Science education, Pharmacy, Management, Technology etc.



ABOUT FACULTY OF MATHEMATICS

High quality teaching across a broad range of disciplines. Promoting world class research in mathematics. Dedicate the dissemination expansion and integration of knowledge through excellence and to make the institution campus as a centre of academic excellence in mathematics.

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Name and Signature of the Candidate

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ADD-ON COURSES
Certificate in

MACHINE LEARNING
20512ML

2021-2022

School of Arts and Science
Department of Mathematics

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ADD-ON COURSE

CIRCULAR

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Branch name	Year	Course offered
Mathematics	PG	Certificate Course in MACHINE LEARNING AND ARTIFICAL INTELLIGENCE

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Course Code	22512MLAI	TITLE OF THE COURSE	L	T	P	C
Value Added		MACHINE LEARNING AND ARTIFICAL INTELLIGENCE	4	1	-	4
Pre-requisite		Knowledge in basic algebra	Syllabus Version		2022-23	

Course Objectives

The main objectives of this course are to:

- To learn about Machine Intelligence and Machine Learning applications To implement and apply machine learning algorithms to real-world applications.
- To identify and apply the appropriate machine learning technique to classification, pattern recognition, optimization and decision problems.
- To understand how to perform evaluation of learning algorithms and model selection.
- To understand about the basic theory of problem solving paradigms and search strategies in artificial intelligence
- To make the students familiar with knowledge representation, planning, learning, natural language processing and robotics

Expected Course Outcomes

On completion of the course students will be expected to:

1	Have a good understanding of the fundamental issues and challenges of machine learning: data, model selection, model complexity, etc	K2
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5	Understand the computation intelligence	K6

K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create

Unit:1	INTRODUCTION
	Learning Problems – Perspectives and Issues – Concept Learning – Version Spaces and

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	Candidate Eliminations – Inductive bias – Decision Tree learning
Unit:2	NEURAL NETWORKS AND GENETIC ALGORITHMS
	Neural Network Representation – Problems – Perceptrons – Multilayer Networks and Back Propagation Algorithms – Advanced Topics – Genetic Algorithms – Hypothesis Space Search –
Unit:3	BAYESIAN AND COMPUTATIONAL LEARNING
	Bayes Theorem – Concept Learning – Maximum Likelihood – Minimum Description Length Principle – Bayes Optimal Classifier
Unit:4	INTRODUCTION
	Introduction - Intelligent Agents- Problem Solving - by Searching – Informed Search Strategies - Optimization Problems - Adversarial Search- Knowledge and Reasoning - Logical Agents - First-Order Logic - Inference in First-Order Logic - Knowledge Representation
Unit:5	PLANNING
	Planning – Planning and Acting in the Real World - Uncertain knowledge and reasoning - Uncertainty - Probabilistic Reasoning - Probabilistic Reasoning over Time - Making Simple Decisions - Making Complex Decisions
Books for Study	
1	Tom M. Mitchell, ―Machine Learning, McGraw-Hill Education (India) Private Limited, 2013.
2	Stuart Russell, Peter Norvig, "Artificial Intelligence: A Modern Approach," Third Edition, Prentice Hall of India, New Delhi, 2010
Reference Books	
1	Ethem Alpaydin, ―Introduction to Machine Learning (Adaptive Computation and Machine Learning), The MIT Press 2004.
2	Stephen Marsland, ―Machine Learning: An Algorithmic Perspective, CRC Press,2009.
3	Michael Affenzeller, Stephan Winkler, Stefan Wagner, Andreas Beham, ―Genetic Algorithms and Genetic Programming ‖, CRC Press Taylor and Francis Group
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
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ABOUT FACULTY OF MATHEMATICS

High quality teaching across a broad range of disciplines. Pioneering world class research in mathematics. Dedicate the communication, exploration and integration of knowledge through excellence and to make the institution emerge as a centre of academic excellence in mathematics.

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Department: _____

Grade: _____

Register Number: _____

Address for communication: _____

Mobile number: _____

Email Address: _____

Name and Signature of the Candidate

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ADD-ON COURSES

Certificate in

MACHINE LEARNING AND ARTIFICAL INTELLIGENCE

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2022-2023

School of Arts and Science

Department of Mathematics

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28	12.4.23	Dr. R. Abirami	
29	14.4.23	Dr.S. Subramanian	
30	18.4.23	Dr. R. Abirami	

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SCHOOL OF ARTS AND SCIENCE

ACADEMIC YEAR 2021 – 2022

Certificate of Appreciation

This is to certify that

Ms/Mr S.Subramani(2101MA20208)

has completed the Value Added Course on

MACHINE LEARNING AND ARTIFICAL INTELLIGENCE- 23512MLAI

from 03.02.23-18.04.23 during the Academic year of 2022 - 2023

Course coordinator

HOD

DEAN

H.O.D.
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(Deemed to be University)
Thanjavur - 613 403, TAMIL NADU

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SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ARTIFICIAL INTELLEGENCE AND DATA SCIENCE

PRIST/AIDS/CIRCULAR/ADD ON/2

16.08.2022

CIRCULAR

SUB: ADD ON COURSE-Reg..

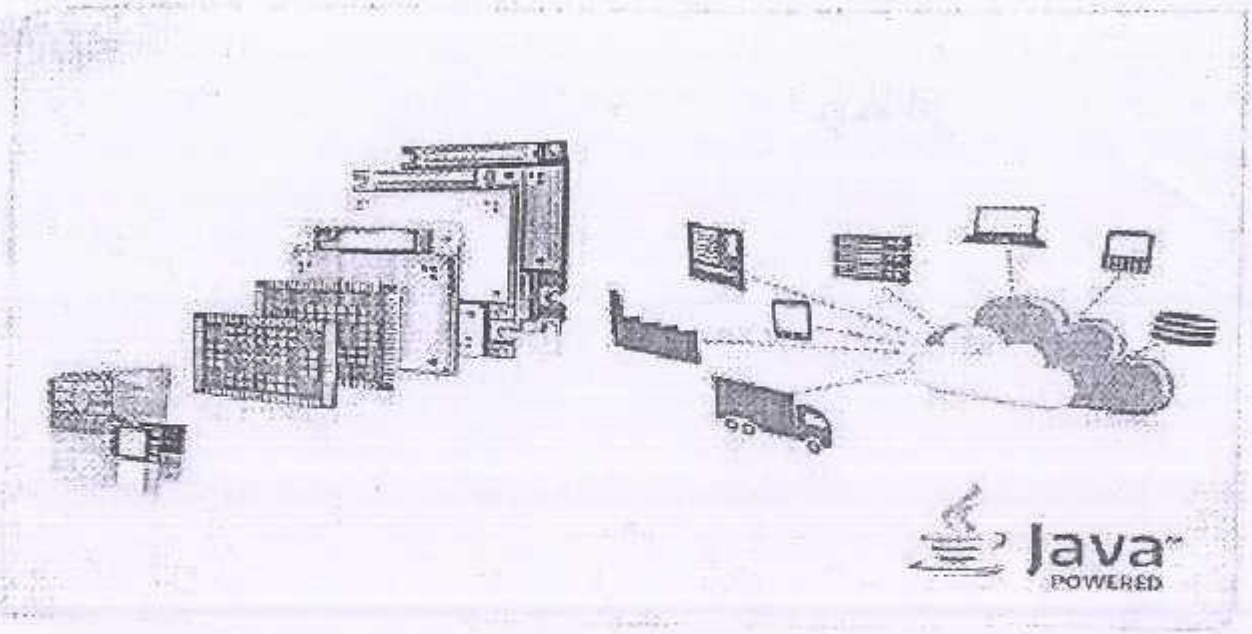
It is informed that the department of AIDS is planning to organized a certified course on Introduction to JAVA on 25.08.2022 for the academic year 2022-2023.

Students from Artificial Intelligence and Data Science those who are interested can enroll their names and courses to the HOD on or before 19.08.22

Head of the Department
Department of Artificial Intelligence and Data Science
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Java is a class-based, object-oriented programming language that is designed to have as few implementation dependencies as possible. It is intended to let application developers write once, and run anywhere (WORA), meaning that compiled Java code can run on all platforms that support Java without the need for recompilation. Java was first released in 1995 and is widely used for developing applications for desktop, web, and mobile devices. Java is known for its simplicity, robustness, and security features, making it a popular choice for enterprise-level applications.

Java was developed by James Gosling at Sun Microsystems Inc in May 1995 and later acquired by Oracle Corporation. It is a simple programming language. Java makes writing, compiling, and debugging programming easy. It helps to create reusable code and modular programs. Java is a class-based, object-oriented programming language and is designed to have as few implementation dependencies as possible. A general-purpose programming language made for developers to write once run anywhere that is compiled Java code can run on all platforms that support Java.

Head of the Department of Computer Science and Engineering
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It is used for:

- Mobile applications (especially Android apps)
- Desktop applications
- Web applications
- Web servers and application servers
- Games
- Database connection
- And much, much more!

The Terminologies in Java

JVM (Java Virtual Machine): JVM is the specification that facilitates the runtime environment in which the execution of the Java bytecode takes place. Whenever one uses the command *java*, an instances of the JVM is created. JVM facilitates the definition of the memory area, register set, class file format, and fatal error reporting. Note that the JVM is platform dependent.

Byte Code: It has already been discussed in the introductory part that the Java compiler compiles the Java code to generate the .class file or the byte code. One has to use the *javac* command to invoke the Java compiler.

Java Development Kit (JDK): It is the complete Java Development Kit that encompasses everything, including JRE (Java Runtime Environment), compiler, javadocs, debuggers, etc. JDK must be installed on the computer for the creation, compilation, and execution of a Java program.

Java Runtime Environment (JRE): JRE is part of the JDK. If a system has only JRE installed, then the user can only run the program, in other words, only the *java* command works. The compilation of a Java program will not be possible (the *javac* command will not work).

Garbage Collector: Programmers are not able to delete objects in Java. In order to do so, JVM has a program known as Garbage Collector. Garbage Collectors recollect or delete unreferenced objects. Garbage Collector makes the life of a developer/ programmer easy as they do not have to worry about memory management.

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THIS BLOG INCLUDES

1. What is Core Java?
2. Java Editions
3. Types of Java Courses
4. Concepts Covered in Core Java
5. Core Java Syllabus
    - Basic of Java
    - Class, Objects, and Types of Classes
    - Packages in Java
    - Data Types in Java
    - Variables, Constraints, and Literals
    - Methods in Java
    - Constructor in Java
    - Modifiers in Java
    - Static Keyword
    - Final Keyword
    - Inner Class in Java
    - Super and this keyword
    - Encapsulation
    - Inheritance
    - Polymorphism
    - Abstraction
6. Complete Industrial Core Java Syllabus and Sub Topics
7. Core Java Vs. Advance Java
8. Different Types of Core Java Frameworks
    - Spring
    - Hibernate

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SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

PRIST/AIDS/CIRCULAR/ADD ON/1

25.10.2022

CIRCULAR

SUB: ADD ON COURSE-Reg.

It is informed that the department of AIDS is planning to organized a certified course on Web Development on 02.11.2022 for the academic year 2022-2023.

Students from Artificial Intelligence and Data Science those who are interested can enroll their names and courses to the HOD on or before 31.10.2022.

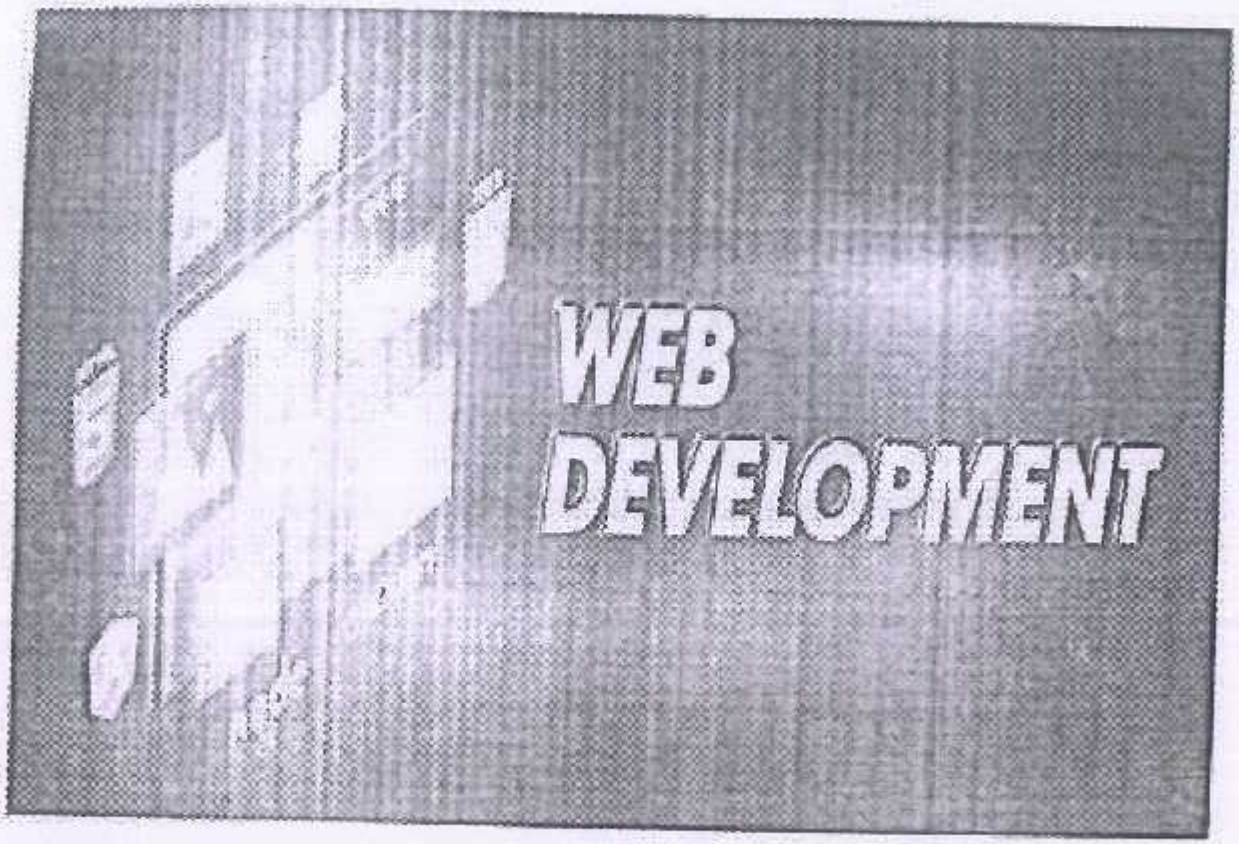
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Web development refers to the creating, building, and maintaining of websites. It includes aspects such as web design, web publishing, web programming, and database management. It is the creation of an application that works over the internet i.e. websites.

he word Web Development is made up of two words, that is:

- **Web:** It refers to websites, web pages or anything that works over the internet.
- **Development:** It refers to building the application from scratch.

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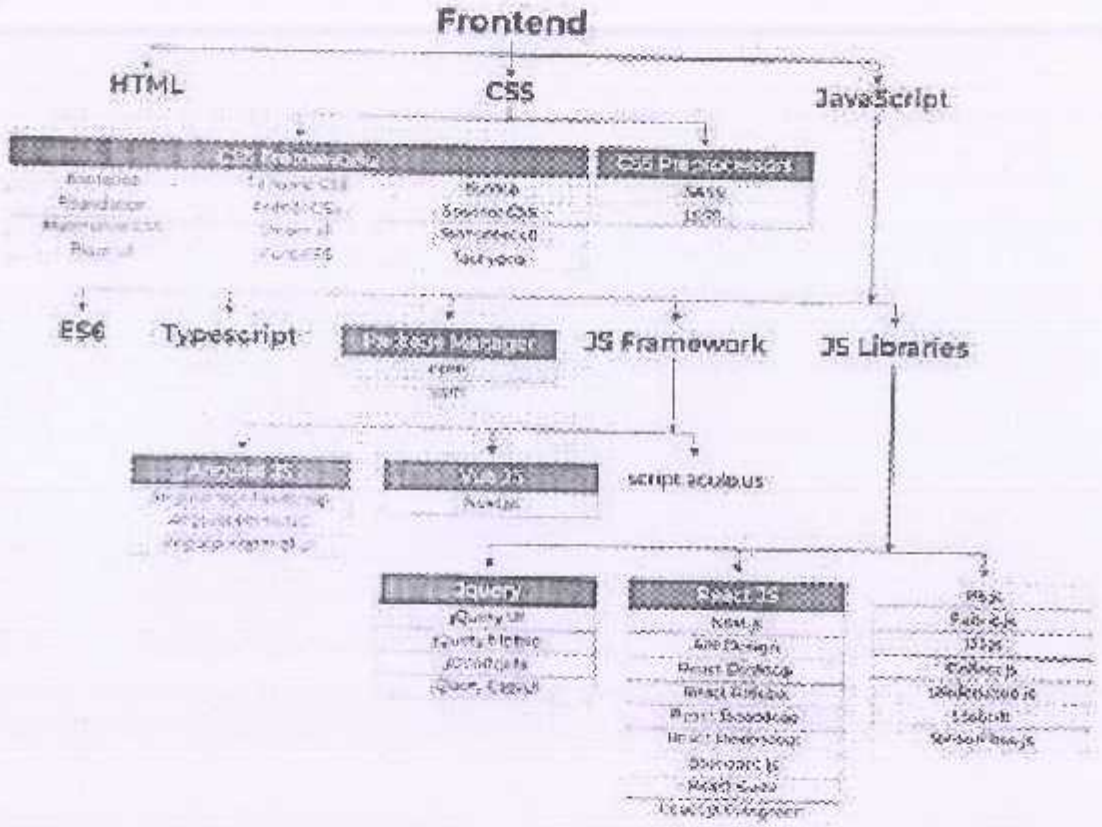
Web Development can be classified into two ways:

- Frontend Development
- Backend Development

Frontend Development

The part of a website where the user interacts directly is termed as front end. It is also referred to as the 'client side' of the application.

Frontend Roadmap



Frontend Development Roadmap

Popular Frontend Technologies

- **HTML:** HTML stands for HyperText Markup Language. It is used to design the front end portion of web pages using markup language. It acts as a skeleton for a website since it is used to make the structure of a website.

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- **CSS:** Cascading Style Sheets fondly referred to as CSS is a simply designed language intended to simplify the process of making web pages presentable. It is used to style our website.
- **JavaScript:** JavaScript is a scripting language used to provide a dynamic behavior to our website.
- **Bootstrap:** Bootstrap is a free and open-source tool collection for creating responsive websites and web applications. It is the most popular CSS framework for developing responsive, mobile-first websites. Nowadays, the websites are perfect for all browsers (IE, Firefox, and Chrome) and for all sizes of screens (Desktop, Tablets, Phablets, and Phones).

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   1.2 Advanced Web Development Course Syllabus

2. Web Development Course Topics

   2.1 Full Stack Web Development Course Syllabus
   2.2 Front-End Web Development Course Syllabus
   2.3 Back-End Web Development Course Syllabus
   2.4 Python for Web Development Syllabus
   2.5 JavaScript for Web Development Syllabus

3. cs50's Web Programming with Python and JavaScript Syllabus

4. Web Design and Web Development Course Syllabus

   4.1 Web Application Course Syllabus

5. Web Development Course Syllabus: FAQs

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VALUE ADDED COURSES

(2022-23)

DEPARTMENT OF PHYSICS

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DEPARTMENT OF PHYSICS

Circular

PRIST/A&S/PHY/22-23/3 Date: 14.07.2022

This is to inform all physics students that the value added courses classes for academi year 2022-23 odd semester will be commenced from 18.07.2022. Hence requesting all registered students to attend the classes without fail.

1. Diploma course on crystal growth analysis
2. Certificate course on semiconductor physics
3. Certificate course on mathematical foundation for physics
4. Certificate course on Industry linked optical fiber technology
5. Certificate course on Installation and maintenance of digital circuits

HOD

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Copy to:

1.Hon'ble Vice Chancellor (for your kind information)

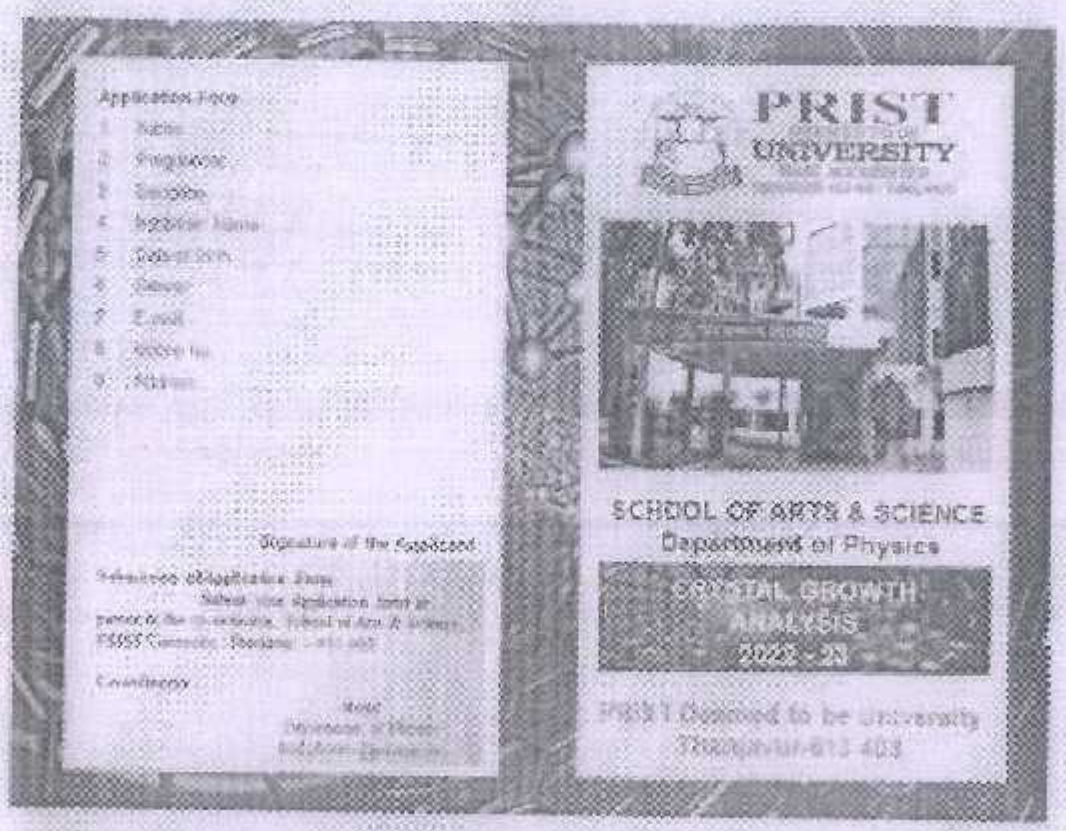
2.Registrar

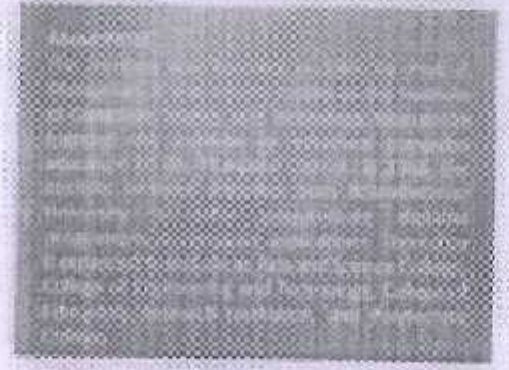
3.Registrar office

4.Deans

5.Department file

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CRYSTAL GROWTH ANALYSIS

Course Objectives:

This course is designed to provide a detailed study on Ceramic materials and their applications in devices. The prerequisite for this would be to do a flat course on concepts of materials science.

Course Outcomes:

At the end of this course, students will have a thorough knowledge of functional ceramic materials. Know the methods of synthesis of functional ceramics. Acquire knowledge of how to choose ceramic materials for specific applications.

Unit I - Thermodynamics of Crystal Growth

Saturation and super saturation – solubility curve - expression for super saturation- solubility diagram –nucleation – Theories of nucleation - Gibbs Thomson equation for vapour -Modified Thomson's equation for melt – Gibbs Thomson equation for solution – Kinetic of crystal growth- Single and rough layer – Models of surface roughness - KSU theory and BCF theory.

Unit II - Growth from solutions

Low temperature solution growth: Slow cooling process – solvent evaporation process -Temperature difference process – Use of electrolytic process high temperature solution growth: Solvent & solutions – slow cooling methods – temperature difference methods – high pressure method – solvent evaporation method – electrolytic process - liquid phase epitaxial

Unit III - Growth from melt

Bridgman and related techniques – crystal pulling – convection in melts – modeling and simulation of bulk crystal growth: considering melt growth – mechanisms mechanics – zone melting technique – float melting process – epitaxial process-float exchange method.

Unit IV - Other Crystal Growth Techniques

Physical vapour deposition-chemical vapour deposition – chemical vapour transport - definition – requirements – choice of transport reactions – specifications – Transported materials and agents. APPLICATIONS-Hydrothermal growth: Design aspect of apparatus-theory-crystallization-seed method: principle types of gels-structure of gels-growth in gels-experimental procedure-biological crystallization.

Unit V - Analysis and Characterization of Crystals

Optical transmission studies (UV) Mass hardness studies-Structural analysis-XRD-Fourier Transform-IR-Spectral analysis-Scanning Electron Microscope (SEM)-different etching techniques.

Books for Reference:

1. Brice J.C, Crystal Growth Processes, John Wiley & sons , New York 1986.
2. Santhanaraghavan P, Ramasamy P, Crystal Growth – Process and Methods, KRU Publications, Kumbakonam, 2000
3. Buckley H.E, Crystal Growth, John Wiley & Sons, New York, 1956.
4. Gilman J. The Art of Science of Growing Crystals, John Wiley & Sons, New York, 1956.
5. William Kemp, Organic spectroscopy, 3rd Edition, Palgrave, New York, 2004.

M. Sivamurugan

Dean

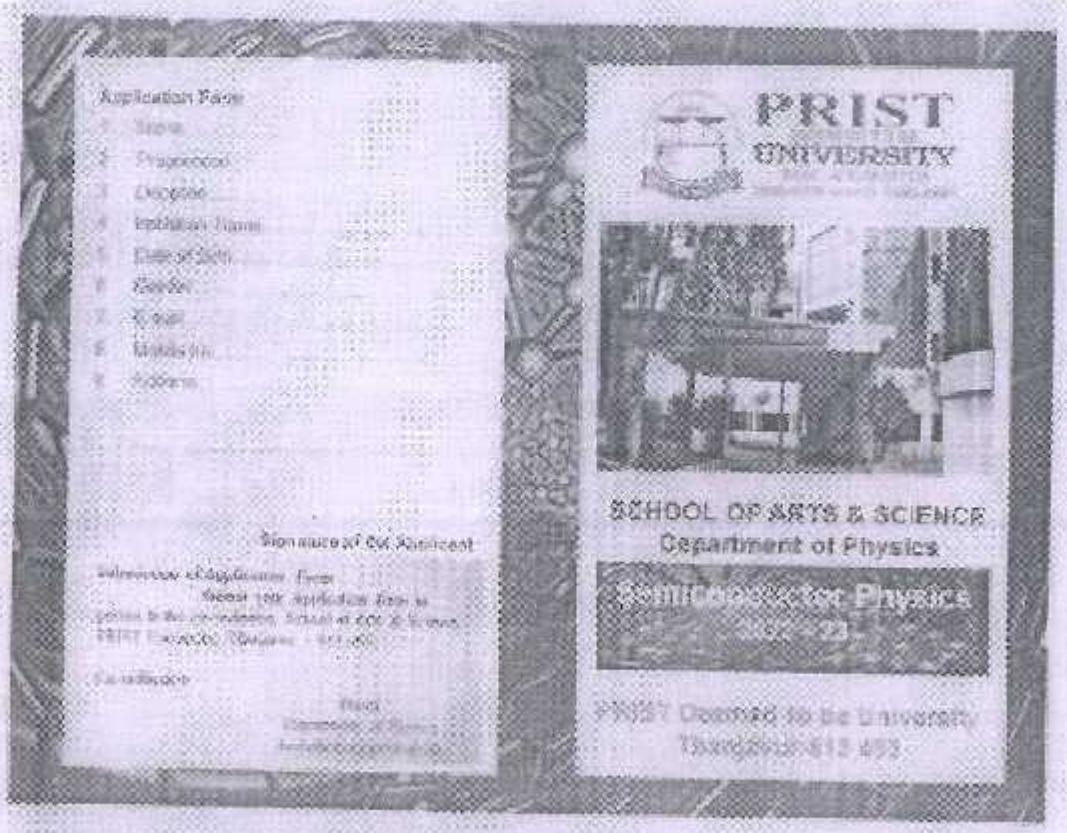
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Course Objectives:
Learn basics in and general techniques. Characterize the structures and chemistries of materials. Select the proper characterization technique to solve problems in research and/or industry.

Course Outcomes:
The students will learn materials characterization techniques and use this knowledge to choose appropriate technique. Surface, interfaces and thin films characterization. Metals, ceramics, polymers, semiconductors and composite characterization.

UNIT – I: CIRCUIT ELEMENTS:
Resistance in series and parallel – Capacitor in series and parallel – Conversion of galvanometer into voltmeter – Conversion of galvanometer into ammeter – Multimeter – CRO, AFO (Qualitative study only).

UNIT – II: ELECTRICITY:
Ohm's law – Kirchoff's law – Wheatstone bridge – condition for bridge balance – Meter bridge – Specific resistance – Temperature coefficient of resistance – Potentiometer – Measurement of current – voltage and resistance.

UNIT – III: SEMICONDUCTORS:
Conductors, Insulators, Semiconductors, P-type, N-type – semiconductors – PN Junction diode – Zener diode – Static characteristics – Voltage regulator – Rectifiers – Half wave rectifiers – Bridge Rectifiers – Calculation of ripple factor and efficiency.

UNIT – IV: BREAK DOWN DEVICES:
FET – Design of FET – JFET characteristics – working of FET – JFET – Design – Characteristics – UJT – design and characteristics – SCR – design and characteristics.

UNIT – V: OPTO ELECTRONIC DEVICES:
LED – voltage and current – Advantages and applications of LED – LCD – Photo diode – its operation and application – Phototransistor – LED as Seven segment display.

REFERENCE BOOKS:

1) Electricity and Magnetism by Brijlal and Subramaniam.
2) Principles of electronics by V.K. Mehta.

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Registration Form

1. Name: _____
2. Reg. No.: _____
3. Programme & Branch: _____
4. Name of value added course: _____

_____

5. E-mail: _____
6. Mobile No: _____

Signature

Submission of application form

Filled in application form has to be submitted in person to course coordinator. Last date for registration is **01.07.2022.**

Head of the Department,
Department of Physics,
PRIST Deemed to be University,
Vallam,
Thanjavur – 613403.

Upon successful completion of the course, certificate will be provided.

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Value Added Course

Mathematical Foundation for Physics



Organized by

Department of Physics
School of Arts and Science
PONNAIYA RAMAJAYAM INSTITUTE OF SCIENCE & TECHNOLOGY
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Tamil Nadu

Principal
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About School of Arts and Science

School of Arts and Sciences consists of Tamil, English, Mathematics, Physics, Chemistry, Biochemistry, Biotechnology, and Microbiology departments. It offers B. Sc., M.Sc., M.Phil. and Ph.D programmes in all disciplines. It comprises of well qualified and research oriented faculty members whom are experts in the frontier areas in Sciences. Faculty members have received research projects from various funding agencies such as DST, CSIR, DBT, and ICMR.

About Physics Department

The Physics Department offers credit based undergraduate programme, Bachelor of Science (B.Sc.) in Physics, postgraduate programme, Master of Science (M.Sc.) in Physics and Ph.D programmes. The Department also offers credit based core and elective courses in basic Physics to undergraduate first year engineering (B.Tech) students.

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List of topics covered in the programme

Unit I: Differential Calculus

Limits and differentiation-Derivative of functions-Derivative interpretive graphs-Differential Equations in Physics

Unit II: Integral Calculus

Finite sums- Limits of finite sums-Definite integrals-Integration of functions-Fundamental theorem of calculus

Unit III: Determinant and Matrix

Basics of determinants and matrices-Types of matrices-Simultaneous linear equations-Eigenvalue and eigenvectors-Matrices in Physics

Unit IV: Vector Calculus

Differentiation of vectors-Gradient, divergence, curl-Integration of vectors-line, surface and volume integral.

Unit V: Few Basic Functions in Physics

Plotting of functions-Beta and Gamma Function-Riemann Zeta Function-Dirac Delta Function

Probability and Statistics

Probability, Multiplicity, Combinatorics-Bernoulli Distribution-Poisson and Gaussian Distribution-Boltzmann, Power Law, Lorentzian Distribution

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Subject Code	Subject Name
22S13MPP	Certificate course on mathematical foundation for physics

Syllabus

COURSE OBJECTIVES:

- To equip students with the mathematical techniques needed for understanding theoretical treatment in different courses taught in their program
- To establish their manipulative skills to apply mathematical techniques in their fields
- To help students apply Mathematics in solving problems in Physics

Unit I: Differential Calculus

Limits and differentiation-Derivative of functions- Derivatives interactive graphs-Differential Equations in Physics

Unit II: Integral Calculus

Finite sums- Limits of finite sums-Definite integrals- Integration of functions-Fundamental theorem of calculus

Unit III: Determinant and Matrix

Basics of determinants and matrices-Types of matrices- Simultaneous linear equations-Eigenvalue and eigenvectors-Matrices in Physics

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Unit V: Few Basic Functions in Physics Plotting of functions-Beta and Gamma Functions-Riemann Zeta Function-Dirac Delta Function

Probability and Statistics Probability, Multiplicity, Combinations-Bernoulli Distribution-Poisson and Gaussian Distributions-Boltzmann, Power Law, Lorentzian Distribution

Course Outcomes

At the end of the course, trainees/students will be able to:

1. Understand use of differential calculus and be able to apply them in real problem
2. Able to understand integral calculus, do integrations.
3. Analyze characteristics of matrices and its different types, and the process of diagonalization.
4. Solve differentiation and integral of vectors

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Thanjavur – 613403.

Upon successful completion of the course, certificate will be provided.

Ponnaiyah Ramajayam Institute of Science & Technology (PRIST)
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PRIST UNIVERSITY

Value Added Course

Industry Linked Optical Fiber Technology



Organized by

Department of Physics
School of Arts and Science
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Thanjavur 613 403
Tamil Nadu

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1451

About PRIST

Pannaiyah Ramajayam Institute of Science and Technology (PRIST), a Deemed University (U/s 3 of the UGC Act 1956), is one of the renowned units of Pannaiyah Ramajayam Institutions, which are serving for more than 30 years in promoting quality education and research for our Indian community, since its inception. The institution is now brimming with many social responsibilities, particularly in promoting quality education through research.

About School of Arts and Sciences

School of Arts and Sciences consists of Tamil, English, Mathematics, Physics, Chemistry, Biochemistry, Biotechnology, and Microbiology departments, offering B. Sc., M.Sc., M.Phil. and Ph.D. programmes in all disciplines. It comprises of well qualified and research oriented faculty members whose are experts in the frontier areas in Sciences. Faculty members have received research projects from various funding agencies such as DST, CSIR, DBT, UGC, and ICMR.

About Physics Department

The Physics Department offers credit based undergraduate programme, Bachelor of Science (B.Sc.) in Physics, postgraduate programme, Master of Science (M.Sc.) in Physics and Ph.D programmes. The Department also offers credit based core and elective courses in basic Physics to undergraduate first year engineering (B.Tech) students.

List of topics covered in the programme

Unit 1- Introduction

Need for optical communication, salient features of optical fibers, ray theory of light guidance, numerical aperture, modes of a fiber, single and multimode fibers, step-index and graded-index fibers.

Transmission characteristics of optical fibers, attenuation, pulse broadening mechanisms, intermodal dispersion, bit rate - length product, material dispersion.

Unit 2- Basic Optical Communications Concepts

P2P System, Transmitter, Light Source, LED, Laser Diode, Detector, PIN diode, Avalanche PhotoDiode, Optical Amplifiers, EDFA, PDFA, Regeneration, ADM, OADM, Digital Cross Connect, RPR Ring.

Unit 3- Optical Fiber

Core, Cladding, Primary Buffer, Types of Fibers, Silica Core Silica Cladding, Silica Core, Plastic Cladding (PCS), Plastic Core Plastic Cladding (POF), fiber fabrication technologies.

Unit 4- Cable Splicing

Fusion Splicing, Mechanical Splicing, Single Fiber Fusion Splicing, Mass Fusion Splicing, Stages of Splicing, Splicing Precautions, Misalignment, End Gap, End Angle, NA Mismatch, Core Mismatch, Wedging, Bulging, Axial Run-out, Bubble, Incomplete Fusion

Unit 5- Testing of Cables

Continuity Test, Light Source- Power Meter, OLTS, Visual Fault Locator, OTDR Testing, Measuring Cable Span, Attenuation Coefficient, Connector/ Splice Loss Measurement, Distance to Fault, OTDR Trace Analysis, Optical Loss Budget.

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PRIST UNIVERSITY

Subject Code	Subject Name
22513C8FT	Certificate course on industry linked optical fiber technology

Syllabus

COURSE OBJECTIVES:

1. To realize the significance of optical fiber communications.
2. To understand the construction and characteristics of optical fiber cable.
3. To develop the knowledge of optical signal sources and power launching.
4. To identify and understand the operation of various optical detectors.
5. To study the design of optical systems and WDM.

Unit 1- Introduction

Need for optical communication, salient features of optical fibers, ray theory of light guidance, numerical aperture, modes of a fiber, single and multimode fibers, step-index and graded-index fibers.

Transmission characteristics of optical fibers, attenuation, pulse broadening mechanisms, intermodal dispersion, bit rate - length product, material dispersion.

Unit 2- Basic Optical Communications Concepts

P2P System, Transmitter, Light Source, LED, Laser Diode, Detector, PIN diode, Avalanche Photo Diode, Optical Amplifiers, EDFA, PDFA, Regeneration, ADM, OADM, Digital Cross Connect, RPR Ring

Unit 3- Optical Fiber

Core, Cladding, Primary Buffer, Types of Fibers, Silica Core Silica Cladding, Silica Core, Plastic Cladding (PCS), Plastic Core Plastic Cladding (PCP), fiber fabrication techniques.

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Unit 4- Cable Splicing

Fusion Splicing, Mechanical Splicing, Single Fiber Fusion Splicing, Mass Fusion Splicing, Stages of Splicing, Splicing Precautions, Misalignment, End Gap, End Angle, NA Mismatch, Core Mismatch, Wasting, Bulging, Axial Run-out, Bubble, Incomplete Fusion

Unit 5- Testing of Cables

Continuity Test, Light Source- Power Meter, OLTS, Visual Fault Locator, OTDR Testing, Measuring Cable Span, Attenuation Coefficient, Connector/ Splice Loss Measurement, Distance to Fault, OTDR Trace Analysis, Optical Loss Budget.

TEXT BOOKS:

1.Optical Fiber Communications – Gerd Keiser, Tata Mc Graw-Hill International edition, 4th Edition, 2008

2. Optical Fiber Communications – John M. Senior, PHI, 2nd Edition, 2002. REFERENCE BOOKS:

1. Fiber Optic Communications – D.K. Mynbaev ,S.C. Gupta and Lowell L. Scheiner, Pearson Education, 2005

2. Text Book on Optical Fiber Communication and its Applications – S.C.Gupta, PHI, 2005. 3. Fiber Optic Communication Systems – Govind P. Agarwal , John Wiley, 3rd Edition, 2004.

4. Fiber Optic Communications – Joseph C. Palais, 4th Edition, Pearson Education, 2004.

COURSE OUTCOMES:

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

1. Understand and analyze the constructional parameters of optical fibers.
2. Be able to design the optical system.
3. Estimate the losses due to attenuation, absorption, scattering and bending.
4. Compare various optical detectors and choose suitable one for different applications.

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Registration Form

1. Name: _____
2. Reg. No.: _____
3. Programme & Branch: _____
4. Name of value added course: _____

_____

5. E-mail: _____
6. Mobile No: _____

Signature of the applicant

Submission of application form

Filled in application form has to be submitted in person to course coordinator. Last date for registration is **31.07.2022**.

Head of the Department,
Department of Physics,
PRIST Deemed to be University,
Vallam,
Thanjavur – 613403.

Upon successful completion of the course, certificate will be provided.

HOD

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Value Added Course

Installation and maintenance of digital circuits



Organized by

Department of Physics
School of Arts and Science
PONNAIYA RAMAJAYAM INSTITUTE OF SCIENCE & TECHNOLOGY
Thanjavur 613 403
Tamil Nadu

REGISTRAR
Ponnaiyah Ramajayam Institute of Science & Technology (PRIST)

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About PRIST

Pondaiyah Ramajayam Institute of Science and Technology (PRIST), a Deemed University (U/s 3 of the UGC Act 1956), is one of the renowned units of Pondaiyah Ramajayam Institutions, which are serving for more than 50 years in promoting quality education and research for our Indian communities since its inception. The institution is now brimming with many social responsibilities, particularly in promoting quality education through research.

About School of Arts and Science

School of Arts and Sciences consists of Tamil, English, Mathematics, Physics, Chemistry, Biochemistry, Biotechnology, and Microbiology departments. It offers B. Sc., M.Sc., M.Phil. and Ph.D. programmes in all disciplines. It comprises of well qualified and research oriented faculty members who are experts in the frontier areas in Sciences. Faculty members have received research projects from various funding agencies such as DST, CSIR, DRDO, and ICMR.

About Physics Department

The Physics Department offers credit based undergraduate programme, Bachelor of Science (B.Sc.) in Physics, postgraduate programme, Master of Science (M.Sc.) in Physics and Ph.D programmes. The Department also offers credit based general elective courses in basic Physics to undergraduate first year engineering (B.Tech) students.

List of topics covered in the programme

Unit 1

Digital System and Binary Numbers: Number System and its arithmetic, Signed binary numbers, Binary codes, Cyclic codes, Hamming Code, the map method up to five variable, Don't care condition, POS simplification, NAND and NOR implementation, Quine Mc. Luskey method (Tabular method).

Unit 2

Combinational Logic: Combinational Circuits: Analysis Procedure, Design procedure, Binary adder, subtractor, Decimal adder, Binary multiplier, Magnitude comparator, Multiplexers, Demultiplexers, Decoders, Encoders.

Unit 3

Sequencial Logic and its Applications: Storage elements: latches & flip flops, Characteristic Equations of flip flops, Flip Flop Conversion, Shift Registers, Ripple Counters, Synchronous Counters, Other Counters: Johnson & Ring Counter

Unit 4

Synchronous & Asynchronous Sequential Circuits: Analysis of clocked sequential circuits with state machine designing, State reduction and assignments, Design procedure, Analysis procedure of Asynchronous sequential circuits, circuit with latches, Design procedure, Reduction of state and flow table, Race-free state assignment, Hazards

Unit 5

Memory & Programmable Logic Devices: Digital Logic Families: DTL, DCTL, [illegible], ECL & CMOS etc., Fan Out, Fan in, Noise Margin: RAM, ROM, PLA, PAL, Circuits of Logic Families, Interfacing of Digital Logic Families, Circuit Implementation using ROM, PLA and PAL; CPLD and FPGA

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Department of Physics

Subject Code	Subject Name
22S13DC	Certificate course on installation and maintenance of digital circuits

Total : 45 hours

Syllabus

Course Objectives:

The main objectives of this course are to:

1. To make student to understand the importance of digital electronic circuits
2. To bring exposure to various tools and equipment used for installation of digital electronic circuits
3. To get hands-on training on the installation and maintenance of digital electronic circuits.
4. To bring knowledge on the possibility of Employability and Entrepreneurship avenues in the area of digital electronic circuits

Unit 1

Digital System and Binary Numbers: Number System and its arithmetic, Signed binary numbers, Binary codes, Cyclic codes, Hamming Code, the map method up to five variable, Don't care conditions, POS simplification, NAND and NOR implementation, Quine McCluskey method (Tabular method)

Unit 2

Combinational logic Combinational Circuits: Analysis Procedure, Design procedure, Binary adder-subtractor, Decimal adder, Binary multiplier, Magnitude comparator, Multiplexers, Demultiplexers, Decoders, Encoders.

Unit 3

Sequential Logic and its Applications: Storage elements: latches & Flip Flops, Characteristic Equations of Flip Flops, Flip Flop Conversion, Shift Registers, Ripple Counters, Synchronous Counters, Other Counters, Johnson & Ring Counter.

Unit 4

Synchronous & Asynchronous Sequential Circuits: Analysis of clocked sequential circuits with state machine designing, State reduction and assignments, Design procedure Analysis procedure of Asynchronous sequential circuits, circuit with latches, Design procedure, Reduction of state and flow table, Race-free state assignment, Hazards.

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Unit 5

Memory & Programmable Logic Devices: Digital Logic Families: DTL, TTL, ECL & CMOS etc., Fan Out, Fan in, Noise Margin, RAM, ROM, PLA, PAL; Circuits of Logic Families, Interfacing of Digital Logic Families, Circuit Implementation using ROM, PLA and PAL; CPLD and FPGA.

Course Outcomes

At the end of the course, trainees/students will be able to:

1 Apply concepts of Digital Binary System and Implementation of Gates.

2 Analyze and design of Combinational logic circuits.

3 Analyze and design of Sequential logic circuits with their applications

4 Implement the Design procedure of Synchronous & Asynchronous Sequential Circuits

5 Apply the concept of Digital Logic Families with circuit Implementation

References

1. M. Morris Mano and M. D. Ciletti, "Digital Design", Pearson Education.
2. David J. Comer, "Digital Logic & State Machine Design", Oxford University Press.
3. R.P. Jain, "Modern Digital Electronics", Tata McGraw Hill Publication

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SCHOOL OF ARTS AND SCIENCE

DEPARTMENT OF PHYSICS

Circular

PRIST/A&S/PH/22-23/12

Date: 01.02.2023

This is to inform all Chemistry students that the value added courses classes for academi year 2022-23 even semester will be commenced from 01.02.2023. Hence requesting all registered students to attend the classes without fail.

1. Certificate course on installation and maintenance of solar photovoltaic systems
2. Certificate course on Microcontroller

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Vallam, Thanjavur - 613 403.

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Deemed to be University
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3.Hon'ble Vice Chancellor (for your kind information)

2.Registrar

3.Registrar office

4.Dean

5.Department file

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THANJAVUR - 613 403, TAMIL NADU.

Registration Form

1. Name: _____
2. Reg. No.: _____
3. Programme & Branch: _____
4. Name of value added course: _____

_____

5. E-mail: _____
6. Mobile No: _____

Signature

Submission of application form

Filled in application form has to be submitted in person to course coordinator. Last date for registration is **31.01.2023.**

Head of the Department,
Department of Physics,
PRIST Deemed to be University,
Vallam,
Thanjavur – 613403.

Upon successful completion of the course, certificate will be provided.

M. Gunasekaran
HOD

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Value Added Course

Installation and Maintenance of Solar Photovoltaic Systems



Organized by

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Tamil Nadu

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About PRIST

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List of topics covered in the programme

Unit 1- Introduction

An Introduction: Energy from the Sun-Sun Path Diagram and Solar Radiation

Unit 2- Fundamentals of Solar Photovoltaic Systems

Components of a Solar PV System-Types of Solar Photovoltaic Systems-Technical Parameters and Performance of a Solar PV Panel.Identification and Uses of Tools and Equipment Used for Solar PV Installation.

Unit 3- Installation of Solar Photovoltaic Systems

The Importance of Accurate Load and Site Assessment-Steps for Conducting a Load Assessment-Steps for Conducting a Site Assessment Procurement of the Solar PV System Components-Civil and Mechanical Parts of Solar PV System-Construction of Equipment

Unit 4- Components of Solar Photovoltaic Systems

Foundation-Installation of Mounting System, Photovoltaic Module and Battery Bank and Inverter stands. Installation of Electrical Components, Conduits, Cables- Installation of Grounding Systems and Battery Bank.

Unit 5- Test & Measurement and Maintenance of Solar Photovoltaic Systems

Tools and Accessories Required for PV System Testing-Overall System Inspection-Testing of Solar Array Wire and Earthing Continuity Tests-Testing of Charge Controller-Testing of Batteries-Start up the System-Unintentional Islanding Functionality Tests-Sample Test and Commission Record Sheet-Tools Required for Maintenance-Preventive Maintenance of PV System-Troubleshooting and Maintenance.

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PRIST
UNIVERSITY

Subject Code	Subject Name
22513SPS	Certificate course on installation and maintenance of solar photovoltaic systems

Syllabus

Course Objectives:

The main objectives of this course are to:

1. To make student to understand the importance of solar energy and its effective utilization.
2. To bring exposure to various tools and equipment used for Solar Photovoltaic installation.
3. To get hands-on training on the installation and maintenance of Solar Photovoltaic Systems.
4. To bring knowledge on the possibility of Employability and Entrepreneurship avenues in the area of solar energy extraction and utilization.

Unit 1- Introduction

An Introduction: Energy from the Sun-Sun Path Diagram and Solar Radiation

Unit 2- Fundamentals of Solar Photovoltaic Systems

Components of a Solar PV System-Types of Solar Photovoltaic Systems-Technical Parameters and Performance of a Solar PV Panel-Identification and Uses of Tools and Equipment Used for Solar PV Installation.

Unit 3- Installation of Solar Photovoltaic Systems

The Importance of Accurate Load and Site Assessment-Steps for Conducting a Load Assessment-Steps for Conducting a Site Assessment-Procurement of the Solar PV System Components-Civil and Mechanical Parts of Solar PV System-Construction of Equipment

Unit 4- Components of Solar Photovoltaic Systems

Foundation-Installation of Mounting System, Photovoltaic Module and Battery Bank and inverter stands. Installation of Electrical Components, Conduits, Cables- Installation of Grounding Systems and Battery Bank.

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Unit 5- Test & Measurement and Maintenance of SolarPhotovoltaic Systems

Tools and Accessories Required for PV System Testing-Overall System Inspection-Testing of Solar Array-Wire and Earthing Continuity Tests-Testing of Charge Controller-Testing of Batteries-Start-up the System-Uninterrupted Islanding Functionality Tests-Sample Test and Commission Record Sheet-Tools Required for Maintenance-Preventive Maintenance of PV System-Troubleshooting and Maintenance.

Course Outcomes

At the end of the course, trainees/students will be able to:

1 Gain knowledge on renewable energy sources, solar PV systems, potential, and applications.

2 Analyze the solar geometry, system parameters, challenges, and opportunities.

3 Understand the system sizing, costing, installation, and operation with and without storage systems.

4 Development of solar PV systems for domestic, commercial, and industrial applications.

5 Performance analysis of a solar PV system for livelihood development.

6 Develop an understanding of the perspective on SDGs 7, 8, and 13.

References

1. Solar energy by Sukhatme, Tata McGraw-Hill Education, 1987.
2. Solar Energy Utilization Edited by Hafil Yaseh, E. Payton, Y. Yener, Springer Netherlands, 1987.
3. Solar Energy Utilization: A Textbook for Engineering Students BKS. D. Kal Khakra Publishers, 1987.

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Registration Form

1. Name: _____
2. Reg. No.: _____
3. Programme & Branch: _____
4. Name of value added course: _____

_____

5. E-mail: _____
6. Mobile No: _____

Signature of the applicant

Submission of application form

Filled in application form has to be submitted in person to course coordinator. Last date for registration is 01.07.2022

Head of the Department,
Department of Physics,
PRIST Deemed to be University,
Vallam,
Thanjavur – 613403.

Upon successful completion of the course, certificate will be provided.

Ponnaiyah Ramajayam Institute of Science & Technology (PRIST) Deemed to be University

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Value Added Course

Microcontroller



Organized by

Department of Physics
School of Arts and Science
PONNAIYA RAMAJAYAM INSTITUTE OF SCIENCE & TECHNOLOGY
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List of topics covered in the programme

Unit 1

Block Diagram of microcontroller : CPU, input device, output device, memory and buses, common features of Microcontrollers On-chip Oscillator, program and data memory, I/O Ports, Watchdog timer reset, SFRs, Timers, Counters, Interrupts, ADC, PWM

Unit 2

Blocks of Microcontroller 8051: ALU, PC, DPTR, PSW, Internal RAM, Internal ROM, Latch, SFRs General purpose registers, Timer/Counter, Interrupt, Ports. Functions of each pin of 8051 Clock Circuit, reset Circuit , phase and state in machine cycle of 8051, Memory organization of 8051 Program and Data memory Map, External Memory Addressing and Decoding Logic of 8051.

Unit 3

Addressing Modes - Immediate, Register, Direct, Indirect, Indexed, Relative and bit addressing. Instruction set Data Transfer, Arithmetic, Logical, Branching, and Machine Control, Looping , Counting, sorting and Indexing, Data manipulation, Masking, Stack operation, Conditional programming.

Unit 4

Switch: Pushbutton, DIP, Potentiometer, Thermistor, Relay,LED,7 segment LED, LCD, ADC0808,Temperature sensor LM35, DAC0808, ADC0804, Darlington Control, DC Motor, Stepper motor, Serial communication using MAX 232.(Experimental)

Unit 5

Application of microcontroller in various field – Using LM35 ADC0808, Microcontroller, 7 segment LED - Using Analog Multiplexer 8051,ADC0804,Microcontroller, 7 segment LED,MAX232 - Using GSM Modem, Microcontroller, Relay, Switches - Using Pulse interrupter,Microcontroller, 7 Segment LED - Using Pushbutton switches, Microcontroller, Relay, NVRAM.

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Department of Physics

Subject Code	Subject Name
22S13BC	Certificate course on microcontroller

Total : 45 hours

Syllabus

Course Objectives:

The main objectives of this course are to:

1. To make student to know the significance of microcontroller
2. To convey [illegible] about microcontroller
3. To acquire hands-on training on the maintenance of microcontroller
4. To transfer knowledge on the possibility of Employability and Entrepreneurship avenues in the field of microcontroller

Unit 1

Block diagram of microcontroller, CPU, input device, output device, memory and buses, common features of Microcontrollers: On-chip Oscillator, program and data memory, IO Ports, Watchdog-timer reset, SFRs, Timers, Counters, Interrupts, ADC, PWM, microprocessor and microcontroller. Hierarchy of microcontrollers, architectures of microcontroller Harvard , Von Neumann RISC and CISC. Applications: House hold , Communication, Office equipment and industrial automation

Unit 2

Blocks of Microcontroller 8051: ALU, PC, DPTR, PSW, Internal RAM, Internal ROM, Latch, SFRS, General purpose registers, Timer/Counter, Interrupt, Ports, Functions of each pin of 8051 Clock circuit reset Circuit phase and state in machine cycle of 8051. Memory organization of 8051: Program and Data memory Map, External Memory Addressing and Decoding Logic of 8051. Stack, Stack Pointer and Stack operation, Timers/Counters logic diagram and its operation in various modes, IO Ports structure Port 0, Port 1, Port2, Port 3., Serial Communication in various modes. Interrupt structure, vector address, priority and operation

Unit 3

Addressing Modes : Immediate, Register, Direct, Indirect, Indexed, Relative and bit addressing, Instruction set: Data Transfer, Arithmetic, Logical, Branching, and Machine Control, Looping , Counting, sorting and Indexing, Data manipulation, Masking , Stack operation, Conditional programming, Configuration and programming of Timer/Counter using SFRs: TMOD, TCON,

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TRs, TLs, Configuration and programming of interrupts using MVIs: IE, IP Configuration and programming of I/O Port : P0,P1,P2,P3

Unit 4

Switch: Pushbutton, DIP, Thumbwheel, TDI, Relay,LED,7 segment LED, LCD, ADC0804, Temperature sensor LM35, DAC0808, ADC0804, Damper Control, Heater Control, DC Motor, Stepper motor, Serial communication using MAX 232,Hyperterminal.

Unit 5

Application of microcontroller in various Field - Using LM35, ADC0804, Microcontroller, 7 segment LED - Using Analog Multiplexer 8051,ADC0804,Microcontroller, 7 segment LED,MAX232 - Using GSM Modem, Microcontroller, Relay, Switches - Using Photo interrupter, Microcontroller, 7 Segment LED - Using Pushbutton switches, Microcontroller, Relay, NVRAM.

Course Outcomes

i. At the end of the course, trainees/students will be able to:
ii. Identify features of various microcontroller
iii. Select appropriate microcontroller for different application
iv. Interface microcontroller with hardware for given application
v. Write and execute assembly language program(software) for given application
vi. Develop small microcontroller based applications.

References:

1. Microcontrollers : Principles And Applications Raj Kamal, PHI, New Delhi,(Latest Edition)
2. The 8051 Microcontrollers: Architecture, Programming and Applications Rao Dr. K Uma Pearson Education India, New Delhi,(Latest edition)
3. The 8051 microcontroller and embedded systems Mazidi Ali, Muhammad Mazidi Gillispie Janice PHI, New Delhi,(Latest edition)
4. The 8051 Microcontroller: Architecture, Programming, and Applications Kenneth Ayala Thomson Delmar learning,(Latest Edition)
5. The 8051 Microcontroller, Mackenzie Pearson Education India, New Delhi,(Latest edition)
6 Programming and customizing the 8051 microcontroller Predko Michae, McGraw-Hill, International edition

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SCHOOL OF ARTS AND SCIENCE

DEPARTMENT OF BIOCHEMISTRY

PRIST/A&S/BC/22-23/53

14.07.2022

This is to inform all Biochemistry students that the value added courses classes for academic year 2022-23 odd semester will be commenced from 18.07.2022. Hence suggesting all registered students to attend the classes without fail.

1. Diploma course on Organic farming
2. Certificate course on Integumentary & digestive system
3. Certificate course on Lymphohaemopoietic system
4. Certificate course on Techniques in Biochemistry

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3.Registrar office
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DEPARTMENT OF BIOCHEMISTRY

CERTIFICATE COURSE ON

LYMPHO HAEMOPOIETIC SYSTEM

SYLLABUS

Subject code: 225183.S

Value added course: 4

Total: 45 hours

Course outcome:

- Describe the various constituents of blood, hematopoiesis, function and maturation
- Discuss about the exposure of dangerous chemicals
- Describe the types of acquired immunity
- Interpret common laboratory instruments

Course objective

- To describe the formation, development, and differentiation of blood cellular components.
- To explain concepts body defense mechanism
- To discuss commonly used laboratory procedures, investigations, and interventions that are necessary in haematological conditions
- To understand the Haematological Disorder

Unit I (9 hours)

Haemopoietic and Lymphatic System: lymph glands & lymph vessels & lymph gland function.

Unit II (9 hours)

Body defense Mechanism: Innate immunity, Acquired immunity and autoimmunity.

Unit III (9 hours)

Haematological disorders: Environmental agents interfering with the haematopoietic system.

Unit IV (9 hours)

Basic causes of Accidents. Common types of laboratory accidents: Physical injury, Electric shock, Exposure of dangerous chemicals, Poisoning with strong acids and alkali, Eye accident, Skin puncture by broken glass. Safety requirements of the laboratory. First aid in laboratory accidents.

Unit V (9 hours)

Basic Principles and operations of cooling centrifuge. Role of microorganisms in body defense mechanism.

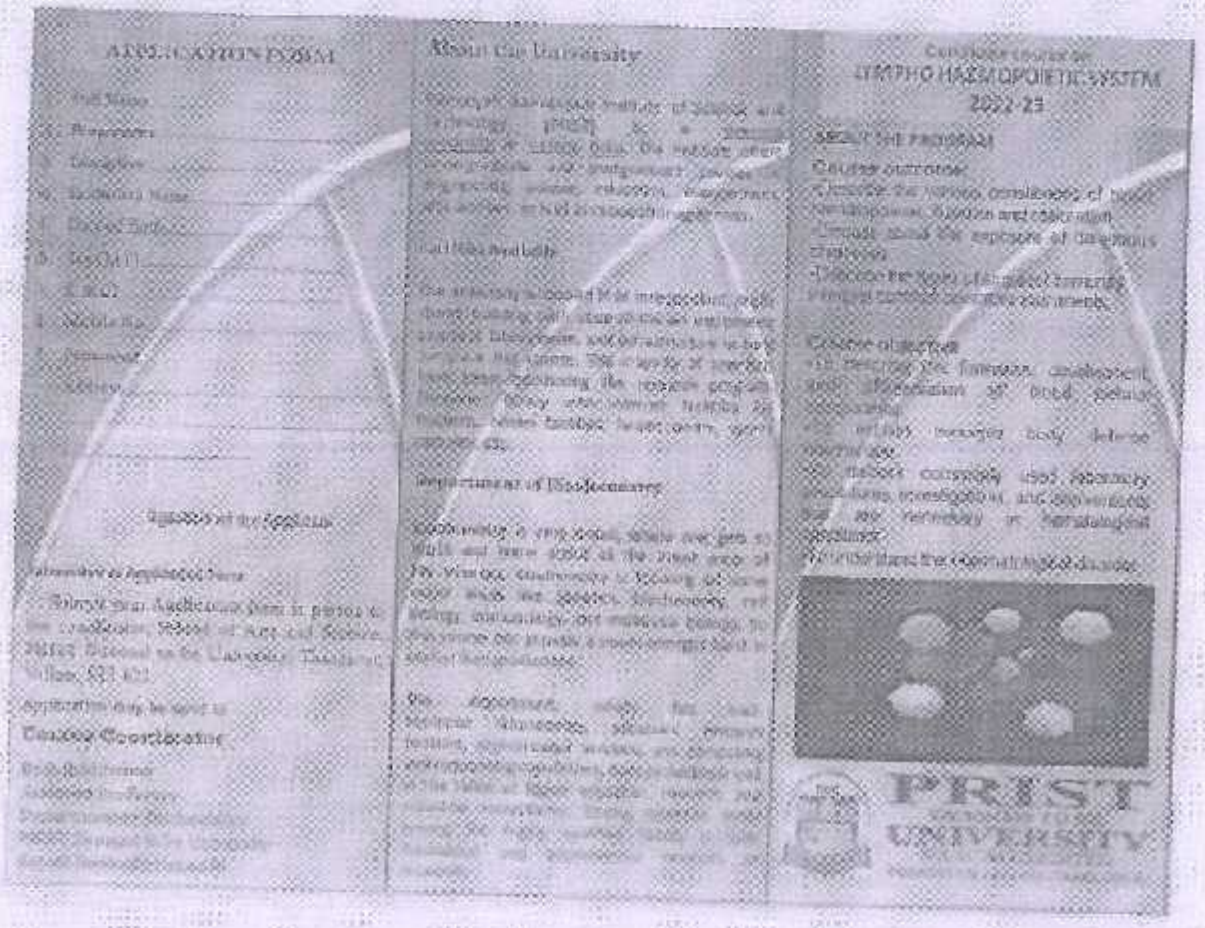
Books Recommended

1. Immunology-Roitt, Brostoff and Male International edition 6th Edition.
2. Textbook of Microbiology- Ananthanarayanand Panikar-Orient Longman 7th Edition
3. Biochemistry – Harold Varley, Alan H Gowenlock and Maurice Bell-CBS Publishers and Distributors Limited 5th Edition.

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01.02.2023

This is to inform all Biochemistry/Biotechnology/Microbiology students that the value added courses classes for academi year 2022-23 even semester will be commenced from 03.02.2023. Hence requesting all registered students to attend the classes without fail.

1. Certificate course on Vermicompost

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DEPARTMENT OF BIOCHEMISTRY

CERTIFICATE COURSE ON VERMICOMPOST

SYLLABUS

Academic Year 2022-2023

COURSE CONTENT (Module 1)

Classification earthworm, Anatomy of earthworm

COURSE CONTENT (Module 2)

Types of Vermicomposingbiological properties

COURSE CONTENT (Module 3)

Raw materials for composting, Efficiency of vermicomposting

COURSE CONTENT (Module 4)

Advantage of vermicomposting, Application of vermicomposting

COURSE CONTENT (Module 5)

Small Scale or Indoor vermicomposting, Applications of vermicomposting

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CERTIFICATE
COURSE
VERMICOMPOST
2022-2023



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CERTIFICATE
COURSE
VERMICOMPOST
2022-2023



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DEPARTMENT OF BIOCHEMISTRY

Certificate course in

INTEGUMENTARY & DIGESTIVE SYSTEM

Syllabus

Subject code: 225151DS

Value added course: 3 **Totah 45 hours**

Course Objective:

- To explain the functions of the skin.
- To differentiate between the layers of the skin; epidermis, dermis, and hypodermis
- To identify the location of the digestive system and describe its functions
- To know the establishment and operation of basic instruments.

Course Outcome:

- Explain how the peritoneum anchors the digestive organs
- Describe the fundamental layers of the skin
- Describe basic function and operation instruments.
- Describe about sample collection, preservation & transport
- Understand structure and function of whole body

Unit I (9 hours)

The Skin: Structure and functions of skin; Surface Anatomy & Surface Markings of Human Body

Ageing: Changes in the system due to ageing, Resistance to infection.

Unit II (9 hours)

Body as a whole: Structure and functions of Skull, Thorax, Abdomen.

Unit III (9 hours)

Digestive System: various parts of digestive system-Liver, Gall Bladder, Pancreas, Buccal Cavity, Pharynx, Oesophagus, Stomach and intestine -physiology of digestion and absorption.

Unit IV (9 hours)

Pre- analytical & analytical variables, Collection, Separation, preservation and transport of biological specimens, anticoagulants.

Unit V (9 hours)

Basic Principles and operations of Colorimeter, Incubator, Common balance, and Micropipette.

Books Recommended

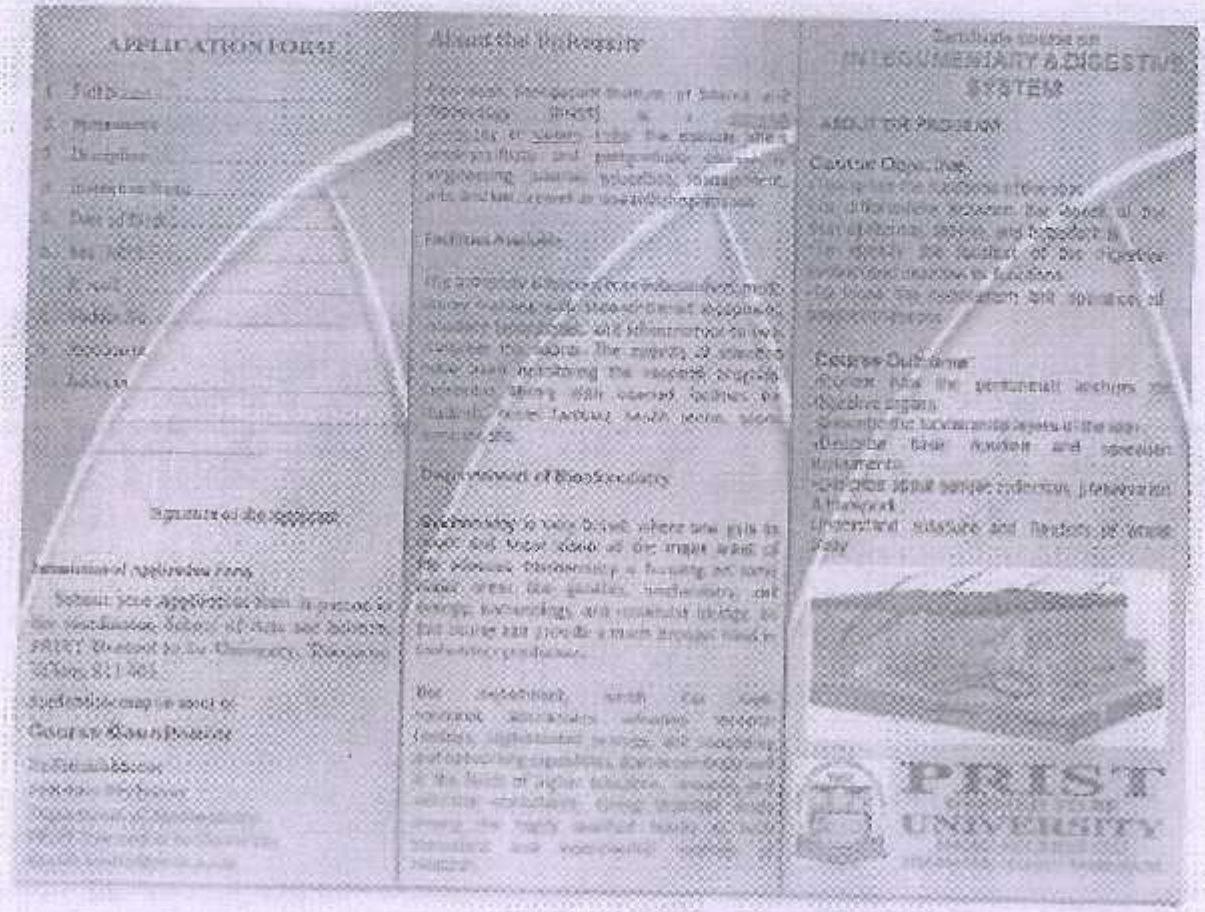
1. Text book of Medical Physiology–Veena Mehta Ahuja, Ane Books Pvt. Ltd. 2nd Edition
2. Practical Biochemistry– S.K. Sawhney and Randhir Singh

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DEPARTMENT OF BIOCHEMISTRY

Diploma course on

Organic farming

Syllabus

Subject code: 22515OF
Value added course: 1 **total: 90 hours**

Course objective:

- To impart knowledge and proficiency in Organic production practices, Certification process and Marketing of organically raised agriculture products.
- To promote self employment and income generation

Course Outcome:

- Understand the concept and the importance of organic farming
- Distinguish the different streams of Agriculture.
- Maintain and preserve existing ecosystems and promote the maintenance of thebalance of the recommended farming system.
- Have relevant knowledge of agricultural technology for the fertilization of the landmobilization and composting
- Have relevant knowledge of agricultural technology for composting methods inorganic farming
- Know legislation rules on livestock in OF

Unit : I- Introduction: Farming, organic farming: concept and development of organic farming. Principles of organic farming & Need for organic farming. Agencies and institutions related to organic agriculture. (18 hours)

Unit : II-Organic farming systems, Soil tillage, Choice of Varieties, crop rotation multiple and cropping systems, intercropping in relation to maintained of soil productivity by Propagation-seed, planting materials. (18 hours)

Unit : III- Plant protection- cultural, Plant protection - mechanical . Plant protection- botanical pesticides I,Plant protection- botanical pesticides II. Plant protection- botanical pesticides III. Plant protection- biopesticide. Plant protection- biocontrol agents, Plant protection - biocontrol agents. (18 hours)

Unit : IV-Organic crop production methods- rice, coconut, cashew, vegetables. Livestock component in organic farming, Livestock Management in organic farming. (18 hours)

Unit : V- Farm economy: Basic concept of economics- Demand, supply, Economic Viability of a farm. Basic production principles, reducing expenses, ways to increase returns. (18 hours)

REFERENCE:

Organic Farming ; Theory and Practice - S.P.Palaniappan and K.Annadurai A Hand book of Organic Farming - A.K. Sharma

Hand book of Organic Farming and Biofertilizers - A.C.Gaur

Organic Inputs for sustainable Horticulture – P. Parvatha Reddy 5. Organic Agriculture

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DEPARTMENT OF BIOCHEMISTRY

CERTIFICATE COURSE ON

Techniques in Biochemistry

SYLLABUS

Subject code: 22515TB

Value added courses 4 Total: 30 hours

Course objectives

- To teach students on various techniques used for the assessment of various diseases and research studies.
- To teach the good laboratory practice required to execute the learned techniques.

Course outcomes (CO's)

- To learn various techniques and acquire the skills to use appropriate methods.
- This skill based course will teach the students the various instrumentations that are used in the analytical laboratories.
- This course covers both fundamental and applications of the instruments that are routinely used for the characterization of biomolecules.

Unit I: Colorimetry: Beer Lambert's Law, Light absorption and its transmittance, Absorption Spectroscopy - Principle, instrumentation and applications of colorimetry and UV-Vis spectrophotometer. (6 hours)

Unit II: Chromatography techniques: Paper chromatography, TLC, Column chromatography, Gel permeation chromatography, Ion-exchange chromatography, Affinity chromatography. (6 hours)

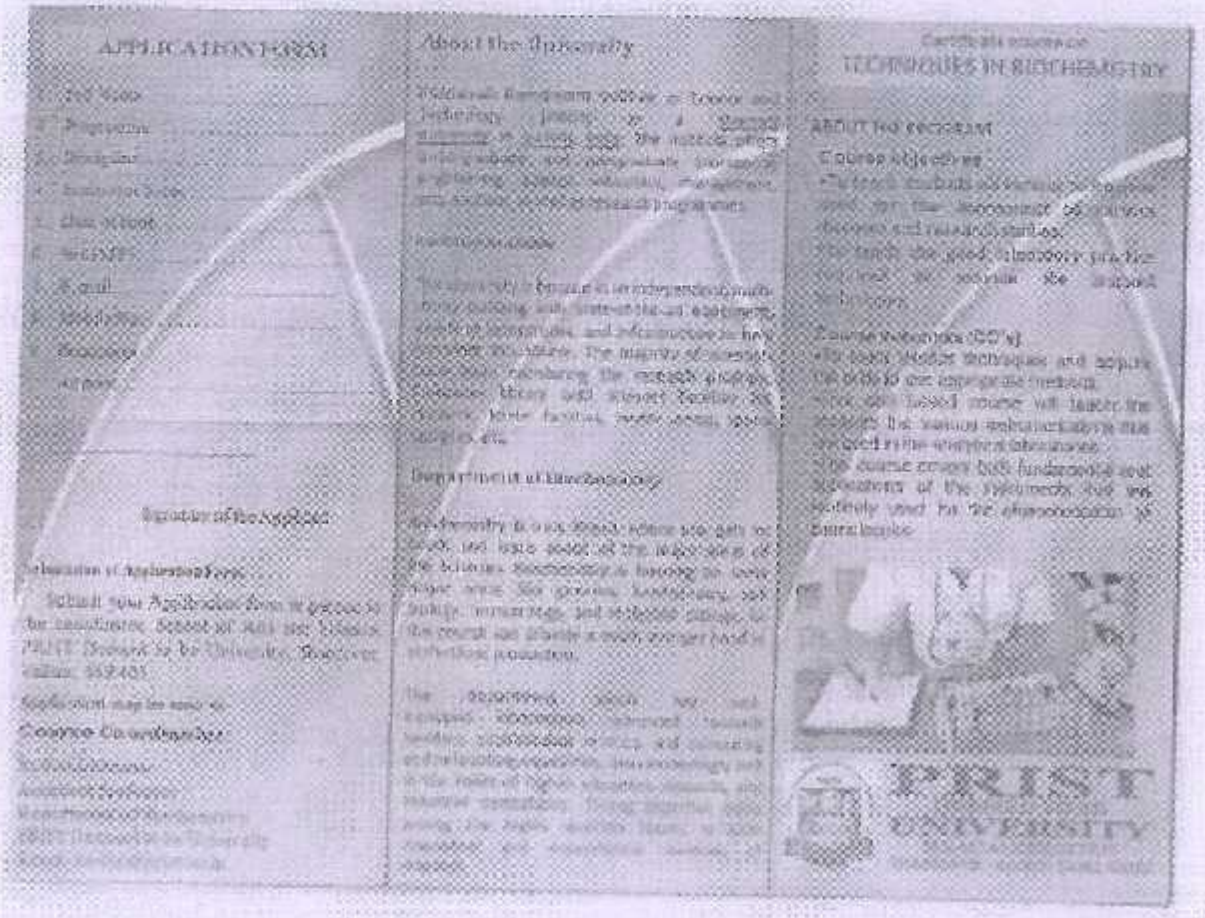
Unit III: Electrophoresis: Principles, instrumentations and biological applications of Paper, Cellulose acetate, agar gel, PAGE, SDS-PAGE. (6 hours)

Unit IV: Immunological Techniques: Immunoelectrophoresis, Latex agglutination test. (6 hours)

Unit V: Diagnostic Techniques: Glucose, Protein, Albumin, Hb, Cholesterol, Triglycerides, ABO blood grouping. (6 hours)

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SCHOOL OF ARTS AND SCIENCE

DEPARTMENT OF MICROBIOLOGY

18.07.2022

This is to inform all Microbiology students that the value added courses classes for academic year 2022-23 odd semester will commence from 18.07.2022. Hence requesting all registered students to attend the classes without fail.

1. Certificate course on food processing - 22516FP
2. Certificate course on Clinical laboratory technology - 22516CLT
3. Certificate course on applied environmental biotechnology - 22516AEM
4. Diploma in sericulture & control - 22516APC

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SCHOOL OF ARTS AND SCIENCE
DEPARTMENT OF MICROBIOLOGY
CERTIFICATE COURSE ON FOOD PROCESSING
ACADEMIC YEAR 2022-2023
Syllabus

Subject Code: 22516FP
Value added course: I

Total: 45 hours

AIM:

The aim of food processing makes food more edible, palatable and safe, and preserves it so it can be eaten beyond the harvest season. Food processing is also a tool that offers greater variety in foods and therefore increases the consumer's choice.

Course Objectives:

CO 1: To get the knowledge about the principles and methods of preservation
CO 2: To know about the freezing and thawing process
CO3: To know about food Drying/Dehydration
CO4: To get the knowledge of Food Concentration
CO 5: To know about the Membrane Processing

Course Outcome:

CO1: Students will understand the basic concepts in food processing and will get knowledge
CO2: They will understand different freezing methods used in food processing.
CO3: They will understand the drying methods and types of dryers.
CO4: They will understand different Food Concentration methods used in food processing
CO5: They will learn different Membrane Processing

UNIT 1 (9Hr)

Food processing and preservation principles, method of preservation: pasteurization (definition, time-temperature combination and equipments); sterilization (definition, time-temperature combination and equipments); blanching (definition, time-temperature combination and equipments, adequacy in blanching); canning (definition, time-temperature combination and equipments), packaging (Introduction, Metal Containers, Glass Containers, Rigid Plastic Containers, Retortable Pouches)

UNIT 2 (9Hr)

Food Freezing and thawing process: Introduction, freezing point and freezing rate, comparison of Freezing and thawing process; freezing methods: Air freezing, plate freezing, liquid immersion freezing and cryogenic freezing. Freezer selection, Advantages and disadvantages of

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freezing. Freezing curve, Freezer selection, advantages and disadvantages of freezing and changes in food during freezing storage.

UNIT 3 (9Hr)

Food Drying/Dehydration: Definition, free and bound moisture, concept of water activity, factors affecting drying, Drying curve (constant rate period and falling rate period), moisture content (wet basis and dry basis), equilibrium moisture content, Drying methods and equipments: sun/solar drying, Cabinet drying, tunnel dryer, spray dryer, freeze dryer, fluidized bed dryer, Nutritional, physico-chemical changes during drying.

UNIT 4 (9Hr)

Food Concentration: Evaporation- Definition, types of evaporator (single effect, double effect and multiple effect evaporator); Freeze concentration- General principles and applications, basic elements, ice crystal nucleation, growth and crystallization, separation techniques (filtration and wash column).

UNIT 5 (9Hr)

Membrane Processing: General principles and advantages, dead end and cross flow, Classification of membrane system: Reverse Osmosis, Nano Filtration, Ultra Filtration, Micro Filtration, Electrodialysis and Pervaporation; Membrane technology comparison chart, Membrane application in the food industries, Membrane performance, and Limitation of membrane processes.

TEXT BOOKS/ REFERENCES:

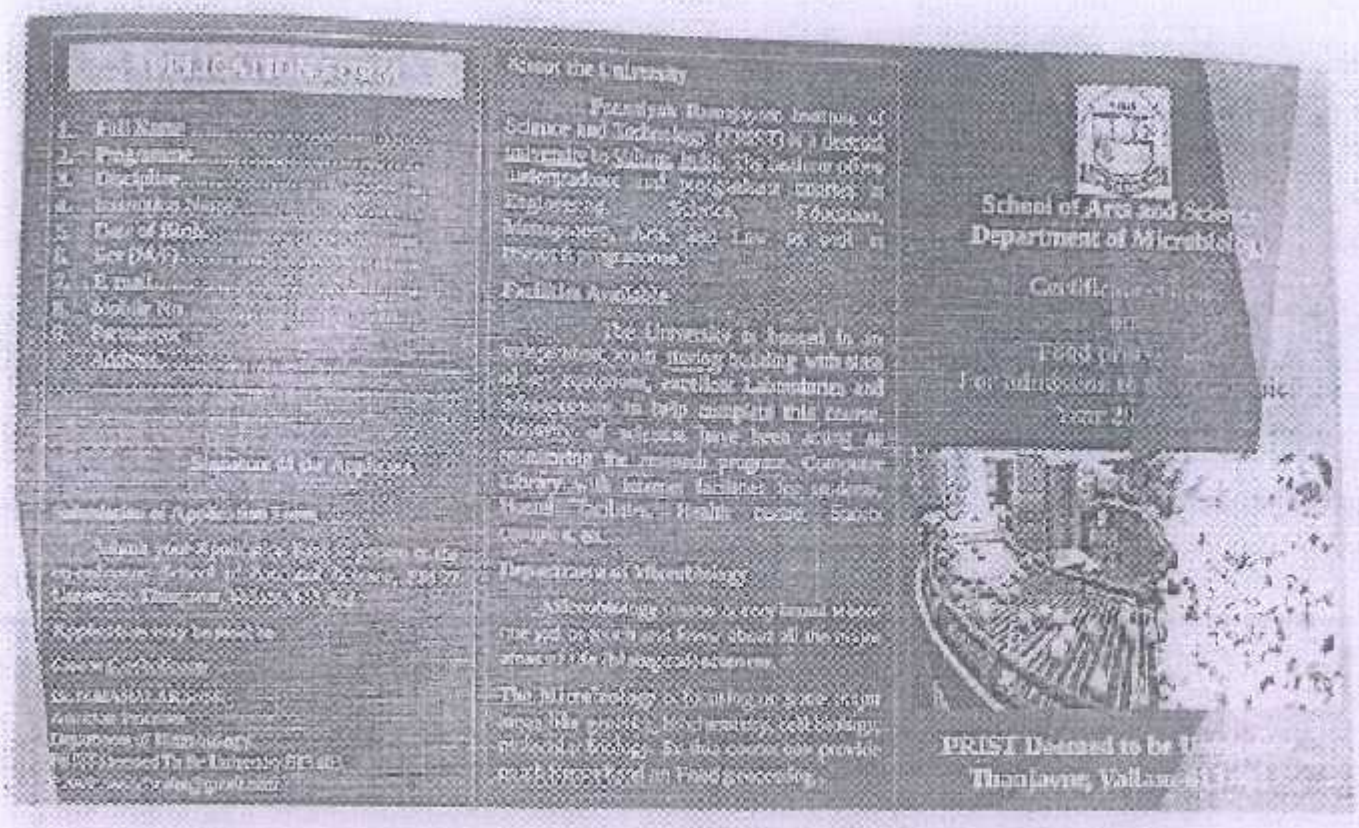
1. Food Processing: Principles and Applications by Ramaswamy H. & Marcotte M. Taylor & Francis.

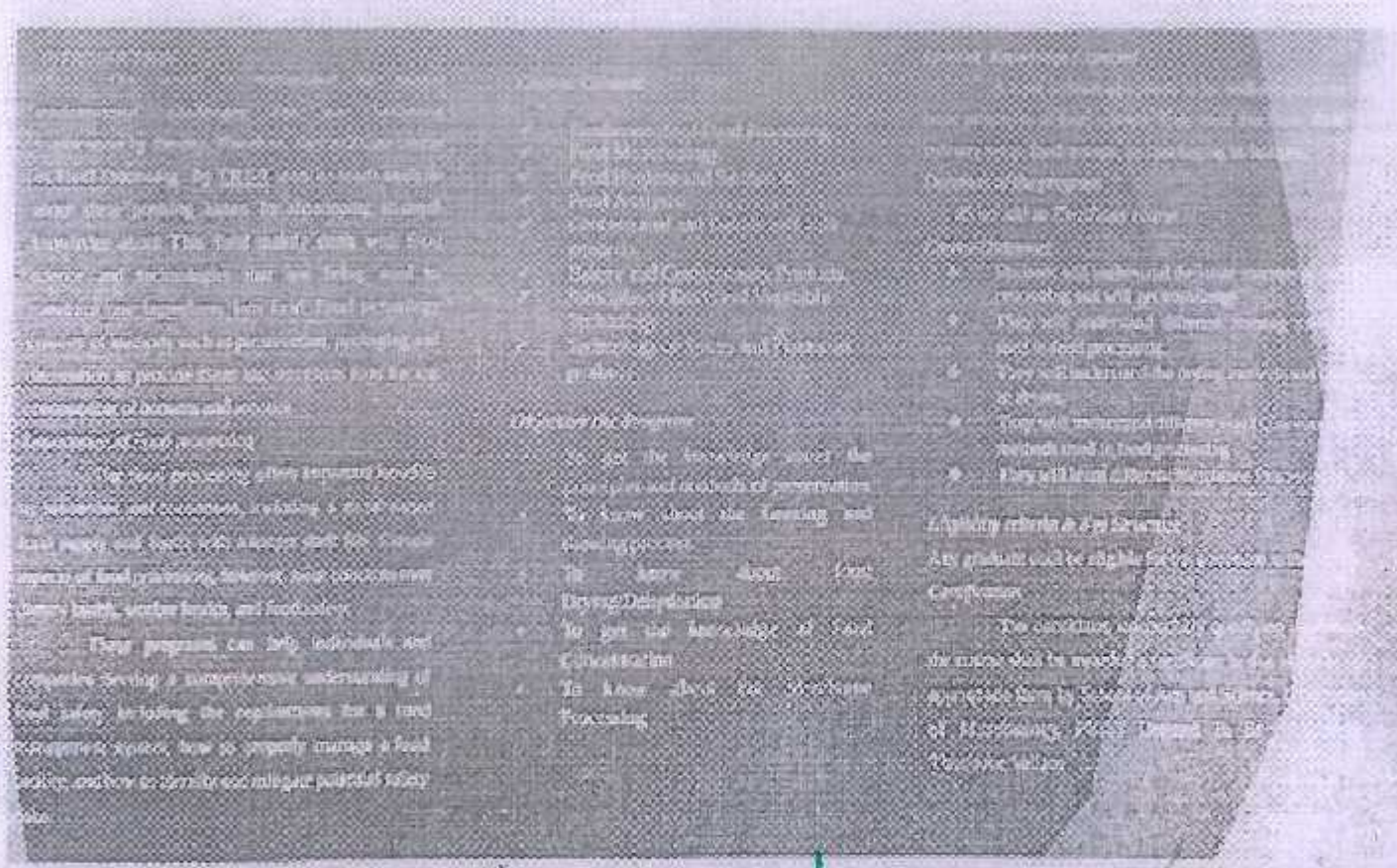
2. Food Science by Norman N Potter and Joseph H. Hotchkiss, CBS Publishers and Distributors.

Novel Food Processing Technologies by Barbosa-Canovas, Tapia & Cano CRC Press, 2004.

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SCHOOL OF ARTS AND SCIENCE
DEPARTMENT OF MICROBIOLOGY
Certificate Course on Clinical Laboratory Technology
ACADEMIC YEAR 2022-2023
Syllabus

Subject Code: 22S366CLT
Value added course: 2
Total: 45 hours

AIM:

The aim of Clinical Laboratory Technology, equips them with the knowledge and skills required to perform laboratory tests, analyze specimens, and contribute to the delivery of quality healthcare services.

Course Objectives:

CO 1: To get the knowledge about the general aspects of laboratory safety
CO 2: To know about the hematology methods
CO3: To know about sample preparation and processing
CO4: To get the knowledge of biochemical test
CO 5: To know about the different branches of Pharmacology

Course Outcome:

CO1: Students will understand the general aspects of laboratory safety
CO2: They will understand different hematology methods
CO3: They will understand the sample preparation and processing
CO4: They will understand biochemical test
CO5: They will learn different different branches of Pharmacology

UNIT I General aspects of laboratory safety (9Hr)

Role of Medical Laboratory technologists – ethics of laboratory practice. Laboratory safety Common lab accidents- their prevention and their first aid. Bio-Medical Waste Management - Legal Aspects and Environment Concern

UNIT II Hematology (9Hr)

Various methods of blood collection - Venipuncture and collection of blood samples, Preparation of blood films, staining of blood smears, Manual count of blood cells, Blood components separation – serum and plasma, Haemoglobin, ESR, blood volume measurements RBC, WBC & platelet counts. Functions of RBC, WBC and platelets.

UNIT III Sample preparation and processing (9Hr)

Clinical sample - collection, transport and processing, Examine and analyse of body fluids, tissues and cells. Examination of urine, pus, blood, stool and CSF. Culture media preparation

UNIT IV Biochemistry (9Hr)

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Estimation of serum urea, Creatinine, uric acid, calcium and phosphorus.Demonstration of serum electrophoresis, PCR, ELISA.

UNIT V Pharmacology (9Hr)

Different branches of Pharmacology,Routes of drug administration,Absorption, Distribution, Metabolism and excretion of drugs,Animal used in experiments, Animal handling and ethics.

TEXT BOOKS/ REFERENCES:

1. Bancroft, John D., Christopher Layton, and Kim S. Suvarna, Editors. Bancroft's Theory and Practice of Histological Techniques. 8th ed. Churchill Livingstone/Elsevier, 2019.
2. (NEW EDITION) Bishop, Michael L., Edward P. Fody, and Larry E. Schoeff. Clinical Chemistry: Principles, Techniques, Correlations. 8 th ed. Philadelphia, PA: Wolters Kluwer, 2018.
3. Brunzel, Nancy A. Fundamentals of Urine and Body Fluid Analysis. 4th ed. St. Louis, Elsevier/Saunders, 2013.
4. (NEW) Buja, L. Maximillian and Krueger Gerhard R. F. Netter's Illustrated Human Pathology. 2 nd ed. Elsevier Saunders, 2014.
5. Callum, Jeannie L., et al. Bloody Easy 4: Blood Transfusions, Blood Alternatives and Transfusion Reactions: A Guide to Transfusion Medicine. 4 th ed. Ontario Regional Blood Coordinating Network (ORBCoN), 2016.

Head of the Department
Department of Microbiology
School of Arts & Science
Post Deemed to be University

REGISTRAR
Ponnaiyah Ramajayam Institute of
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(Institution Deemed to be University-
U/s 3 of the UGC Act, 1956)
THANJAVUR -613 403, TAMIL NADU.



Head of the Department
Department of Microbiology
School of Arts & Science
Post Graduate of Bharathidasan University, Thanjavur

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441 of the UGC Act, 1956)
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THANJAVUR – 613 403 - TAMIL NADU

SCHOOL OF ARTS AND SCIENCE
DEPARTMENT OF MICROBIOLOGY
Certificate Course on Applied Environmental Microbiology
ACADEMIC YEAR 2023-2024
Syllabus

Subject Code: 31516A2324
Value added course: 3
Total: 45 hours

AIM:

The advancement of our understanding of microbial interactions and microbial processes in the environment

Course objective:

Summarize and explain the roles of microbes in industrial and food processes. Relate their knowledge of traditional microbiological techniques to the utilization and control of microorganisms.

Course Outcomes:

This course prepares the student to address pressing environmental challenges by developing a fundamental understanding of the microbial communities and processes in natural and built environments. It lays and builds upon the foundations of basic microbiology, microbial energetics and diversity to applying tools provided by microbiology ranging from traditional to state of art for addressing relevant environmental concerns. It provides an in-depth exploration of the diverse role microbes and microbial communities and includes topics such as cell structure and chemistry, microbial energetics and diversity, ecology and population dynamics, environmental microbial processes including biogeochemical cycling, and microbes involved in bioremediations and biotransformations.

UNIT I(9Hrs)

Introduction, cell elements and composition Cell and its composition, cytoplasmic membrane Prokaryotic cell division Microbes and their environmental niches Historical roots of microbiology Nucleic acids and amino acids DNA structure, replication, and manipulation Protein and its structure Regulation Microbial nutrition Microscopy: Light microscopy, 3d imaging, AFM, Confocal scanning laser microscopy

UNIT II(9Hrs)

Microbial ecosystems Population, guilds, and communities Environments and microenvironments Microbial growth on surfaces Environmental effects on microbial growth

UNIT III(9Hrs)

Microbial symbiosis and virus, Mutation and its rate, Genetic recombinations, Population dynamics, Virus, Viroid, Prion, Application of environmental microbes

UNIT IV(9Hrs)

Bioremediation and wastewater microbiology, Bioremediation and examples, Acid mine drainage, Enhanced metal recovery, Wastewater microbiology

UNIT V(9Hrs)

A. Xavier

Head of the Department
Department of Microbiology
School of Arts & Science
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Ponnaiyah Ramajayam Institute of Science & Technology (PRIST)
(Institution Deemed to be University u/s 3 of the UGC Act, 1956)
THANJAVUR-613 403, TAMIL NADU

1591

Solid waste Microbiology and antimicrobial resistance, Landfills, Leachate, Anaerobic degradation phases, antimicrobial resistance

References

1. Atlas Ronald M, Bartha Richard, Microbial Ecology 2nd Edition, Benjamin Cummings Publishing Company, California, 1987.
2. Baker WC and Berson DS. Bioremediation – McGraw Hill Inc., New York, 1994.
3. Chatterji AK. Introduction to Environmental Biotechnology. 2005
4. Christon J Hurst, Manual of Environmental Microbiology.2nd edition. American Society for Microbiology, Washington 2002.

Head of the Department
Department of Microbiology
School of Arts & Science
Periyar Maniammai University, Vallam.

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Head of the Department
Department of Microbiology
School of Arts & Science
Ponnaiyah Ramajayam Institute of Science & Technology, Thanjavur.

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SCHOOL OF ARTS AND SCIENCE

DEPARTMENT OF MICROBIOLOGY

Diploma in Air Pollution & Control

ACADEMIC YEAR 2022-2023

Syllabus

Subject Code: 21816APC

Total: 45 hours

COURSE OBJECTIVES

Learn the fundamental knowledge of air pollution source, primary and secondary air pollutants; as well as, their effects on environment and human health

Learn the methods used to measure and estimate the emissions from stationary (e.g. furnace) and mobile (e.g. cars) sources.

Differentiate between the general and modern techniques used to control and reduce the amount of gaseous emissions in the atmosphere.

COURSE OUTCOMES

- Define air pollution & list its sources.
- Interpret the effect of each pollutant on human health and the environment.
- Detect & measure the extent of pollution in the atmosphere.
- Apply & conclude the best and suitable technology for controlling any kind of gaseous & particulate matter emissions.
- Control hydrocarbon and VOC emissions through using the incineration or after burning techniques.

COURSE CONTENT

- Introduction and common air pollutants
- Health and environment impacts
- Air pollution assessments
- General ideas of air pollution control
- Gaseous emission control
- Particulate Control Indoor air quality
- Regional and Global Issues Impact of Air Pollution on Atmosphere
- Soil and Water Bodies.
- Sources and Classification of Air Pollutants.
- Atmospheric Formation and Fate of Air Pollutants.
- Meteorological Parameters & Air Pollution
- Atmospheric Stability and Lapse Rates.

Head of the Department
Department of Microbiology
School of Arts & Science

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APPLICATION FORM

1. Full Name .....
2. Programme .....
3. Discipline .....
4. Institution Name .....
5. Date of Birth .....
6. Sex (M/F) .....
7. E mail .....
8. Mobile No .....
9. Permanent Address .....

.....

.....

Signature of the Applicant

Submission of Application Form

Submit your Application form in person to the In-charge/Admission, School of Arts and Science, PRIST University, Thanjavur, Vallam, 613 403.

Application may be send to

Doctor Co-Ordinator

Dr.R. Sathya
Associate Professor
Department of Microbiology
PRIST Deemed to be University
School of Arts & Science
Prist Deemed to be University, Thanjavur.

About the University

Pondicherry Engineering College and Technology was established in 1985 as a deemed university in Pondicherry. The institute offers undergraduate and post graduate courses in Engineering, Science, Education, Management, Arts, and Law as well as research programmes.

Facilities available

The University is located on an independent, world class building with state of the art equipment, excellent laboratories and classrooms to help complete the course. Students of science have been using the laboratory for research projects. Computer Library and support facilities for students, Hostel facilities, Health centre, Sports complex, etc.

Department of Microbiology

Microbiology is the study of microbes which can not be seen and know about all the major areas of life (biological) sciences.

The Microbiology is divided into many major areas like genetics, biochemistry and biology, molecular biology, the list could go on. Microbiology is also concerned with the application and control

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Ponnaiyah Ramajayam Institute of
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Schools of Arts and Science
Department of Microbiology

Diploma Course
on
Air Pollution and Control

For admission to the
Academic Year
2021-22



PRIST Deemed to be University
Thanjavur, Vallam-613 403

416

1603

INTRODUCTION

Air pollution is a mixture of solid particles and gases in the air. Car emissions, chemicals from factories, dust, pollen and mold spores may be suspended as particles. Ozone, a gas, is a major part of air pollution in cities. When ozone forms air pollution, it is also called smog.

Importance of Air Pollution

Air pollution is contamination of the indoor or outdoor environment by any chemical, physical or biological agent that modifies the natural characteristics of the atmosphere. Household combustion devices, motor vehicles, industrial facilities and forest fires are common sources of air pollution.

Breathing clean air can lessen the possibility of disease from stroke, heart disease, lung cancer as well as chronic and acute respiratory illnesses such as asthma. Lower levels of air pollution are better for heart and respiratory health, both long- and short-term. Both short and long-term exposure to air pollutants have been associated with health impacts.

Head of the ...
Department of Physics
Arts & Science
Pon... Thanjavur

Course Content

*Air Pollution: Introduction and measures of air pollution on human health, vegetation, animals, buildings, materials, water bodies and ecosystem, soil and water bodies.

*Sources, classification and characteristics of air pollutants. Meteorology and air pollution dispersion models.

*Air Quality monitoring, Gaussian dispersion models, plume rise and emission models.

*Emissions (including transport, industrial, agricultural, household and commercial sectors). Application of [illegible] to assess ambient quality in relation to emissions and to take appropriate control measures.

*Indoor air pollution, sources, types and health impacts. Sampling, measurement and evaluation of indoor air quality. Global and regional environmental issues on air pollution. Ozone depletion, Climate change, Global warming, Acid rain.

Objectives of the course

*The objective of the course is to impart the knowledge and understanding of causes and effects of air pollution and their remedial mechanisms.

Level of Knowledge Expected

To illustrate and describe the global life expectancy for each person.

Duration of the program

45 hrs add on Certificate course

Course Outcome

*The course will provide a deeper understanding of air pollutants, pollution inventory and modeling. The course also imparts knowledge on the impacts of air pollution on different aspects such as policy, human health and various contemporary technological innovations for betterment of air quality.

Eligibility criteria & Fee Structure

Any graduate shall be eligible for the admission to the course

Certification

The candidates successfully qualifying the course the course shall be awarded a certificate to that effect in the appropriate form by school of Arts and Sciences, Department of Microbiology, PRIST Deemed to be University, Thanjavur, Vallam.

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SCHOOL OF ARTS AND SCIENCE

DEPARTMENT OF MICROBIOLOGY

01.02.2023

This is to inform all Microbiology/Biotechnology/Biochemistry/ Agri students that the value added courses classes for academic year 2022-23 even semester will commence from 03.02.2023. Hence requesting all registered students to attend the classes without fail.

1. Diploma in biomedical research -21516BMS
2. Certificate course on biofertilizer production technology - 21516BPT
3. Certificate course on hydrology & life -21516HL

HOD

DEAN

Head of the Department
Department of Microbiology
School of Arts & Science
PRIST Deemed to be University, Thanjavur

Copy to,

1.Hon'ble Vice Chancellor (for your kind information)

2.Registrar

3.Registrar office

4.Dean

5.Department file

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THANJAVUR – 613 403 - TAMILNADU

Diploma Course on Biomedical Research

Course code: 21S168MS
Academic Year- 2022-23
Syllabus

Objective the Program

To study biological processes and diseases with the ultimate goal of developing effective treatments and cures. Biomedical research is an evolutionary process requiring careful experimentation by many scientists, including biologists and chemists.

Course Outcome

Biomedical research looks for ways to prevent and cure disease. Biomedical science refers to a set of sciences that are applied to developing new therapies, treatments, and technologies that can help with the management of disease.

1. Introduction to research
2. Introduction to research problem and objectives
3. Measurement
4. Experimental study designs
5. Validity of epidemiological studies
6. Measurements of study variables
7. Sampling methods
8. Calculating sample size and power
9. Designing data collection tools
10. Principles of data collection
11. Data management
12. Overview of data analysis
13. Ethical framework for health research
14. Conducting clinical trials

Head of the Department
Department of Microbiology
School of Arts & Science
Prist Deemed to be University, Thanjavur

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APPLICATION FORM

1. Full Name .....
2. Programme .....
3. Discipline .....
4. Institution Name .....
5. Date of Birth .....
6. Sex (M/F) .....
7. E mail .....
8. Mobile No .....
9. Permanent Address .....

.....

.....

Signature of the Applicant

Submission of Application Form

Submit your Application form in person to the co-ordinator, School of Arts and Science, PRIST University, Thanjavur, Vallam, 613 403.

Application may be sent to:

Course Co-Ordinator

Dr. S. Vallal

Associate Professor

Department of Microbiology

PRIST Deemed to be University, Thanjavur

Head of the Department

Department of Microbiology

School of Arts and Science

PRIST Deemed to be University, Thanjavur

REGISTRAR

Pondicherry Ramalayam Institute of Science & Technology (PRIST)

(Institution Deemed to be University-U/s 3 of the UGC Act, 1956)

THANJAVUR-613 403, TAMIL NADU

About the University

Pondicherry Ramalayam Institute of Science and Technology (PRIST) is a deemed University in Thanjavur. The various other constituents and prospective courses in Engineering, Science, Arts, Management, Arts, and Law are also in progress.

Facilities Available

The University is blessed in an inspiring, multi storied building with state of art equipment. Modern laboratories are constructed to help complete the course. Hostels for all genders have been setup at the campus. The students, Hostel facilities, Recreation centre, Sports complex, etc.

Department of Microbiology

Microbiology course is very broad where one get to study the many areas of the major areas of the Biological sciences.

The Microbiologist [illegible] in some important areas like genetics, biochemistry, biology, molecular biology, etc. This course can provide many future [illegible]

School of Arts and Science

Diploma Course on Biomedical research

For admission to the Academic Year 2021-22



PRIST Deemed to be University
Thanjavur, Vallam-613 403

420

1615

INTRODUCTION

The course will explain the fundamental concepts of research methodology in health. Course materials include video lectures, reading resource materials, example accompaniments, workbooks, lecture handouts and frequently asked questions based on participant queries from previous cycles. Certification will be done based on lecture wise assignments and a final proctored exam.

Importance of Biomedical Research

Biomedical research is important because it is the first step towards the creation of new medications and treatments that help to manage all different types of health conditions and diseases. Without this research, the prevention and cure of diseases would be practically impossible.

Clinical research is what allows doctors to decide how to best treat patients. It is what makes the development of new medicines, new procedures and new tools possible. Without clinical research, we would not be able to ensure that our treatments are better than our current treatments.

Head of the Department
Department of Microbiology
School of Arts & Science
PRIST Deemed to be University, Thanjavur

Course Content

- Introduction to research methods
- Formulating research question, hypothesis and objectives
- Measures of central tendency
- Representation of data
- Sampling and different study designs
- Measurement of study variables
- Sampling techniques
- Calculation of sample size and power
- Designing data collection tools
- Principles of data collection
- Data management
- Overview of data analysis
- Ethical issues in health research
- Conducting clinical trials

Objectives the Program

- To study pathogenic microorganisms and diseases with the objective of developing effective medicines and tools. Biomedical research is an evaluative process involving careful investigation by many scientists, including [illegible]

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THANJAVUR-613 403, TAMIL NADU.

Level of Knowledge Expected

The pre-specified gain or condition(s) that reflect the effect of one or more interventions on human subjects

Duration of the program

6 hrs add on Certificate course

Course Outcome

Biomedical research looks for ways to prevent and treat diseases. Biomedical science refers to a set of sciences that are aimed at developing new therapies, treatments, and technologies that can help with the management of diseases, illnesses, and disabilities.

Eligibility criteria & Fee Structure

Any graduate shall be eligible for the admission to the course

Certification

The candidates successfully qualifying the course the course shall be awarded a certificate to the effect in the appropriate form by School of Arts and Science, Department of Microbiology, PRIST Deemed To Be University, Thanjavur, Vallam.

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SCHOOL OF ARTS AND SCIENCE
DEPARTMENT OF MICROBIOLOGY
Certificate Course in Biofertilizer Production Technology

ACADEMIC YEAR 2022-2023
Subject Code: 21516BPT

Total: 45 hours

Course objectives:

To demonstrate the low cost media preparation and impart training of eco friendly agricultural inputs in biofertilizer production.

Course Outcomes:

- Ability to distinguish the types of biofertilizers and methods of application in farmers fields
- Development of integrated management for best results using nitrogenous and phosphate biofertilizers.

Syllabus:

Unit I:

Introduction,History and concept of bio fertilizers ,status scope and importance of Bio fertilizers.Classification of bio fertilizers.Nitrogen fixation.

Unit II:

Structure and characteristic features of bacterial Bio fertilizers- Azospirillum, Azotobacter, Bacillus, Pseudomonas, Rhizobium and Frankia; Cyanobacterial biofertilizers- Anabaena, Nostoc, Hapalosiphon and fungal biofertilizers- AM mycorrhizae and ectomycorhiza.

Unit III:

Production technology; Strain selection, sterilization, growth and fermentation,equipment, mass production of carrier based and liquid bio fertilizers. FCO specifications and quality control of bio fertilizers.

Unit IV:

Application technology for seeds, seedlings, tubers, sets etc.Biofertilizers -Storage, shelf life, quality control and marketing. Factors influencing the efficacy of bio fertilizers.

Head of the Department
Department of Microbiology
School of Arts & Science
Deemed to be University, Thanjavur

Dean
School of Arts & Science
PRIST Deemed to be University
Thanjavur-613 403, Tamil Nadu

REGISTRAR
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THANJAVUR-613 403, TAMIL NADU

APPLICATION FORM

1. Full Name .....
2. Programme .....
3. Discipline .....
4. Institution Name .....
5. Year of Study .....
6. Sex (M/F) .....
7. E-mail .....
8. Mobile No. .....
9. Permanent Address .....

.....

.....

Signature of the Applicant

Recommendation/Endorsement

This is to certify that the above mentioned candidate is a bonafide student of this institution.

Signature and Seal of the Head of the Institution

About the University

Ponnaiyah Ramajayam Institute of Science and Technology (PRIST) is a deemed university in Tamil Nadu. The campus offers undergraduate and postgraduate courses in Engineering, Science, Education, Management, Arts and Law as well as research programmes.

Facilities Available

The University is equipped with independent, multi-storied buildings, well-stocked with equipments, excellent laboratories and administration to help complete the course. Majority of faculty have been doing or assessing the students' projects. Library with several facilities for students. Power canteen, Hostel rooms, Sports complex etc.,

Department of Microbiology

Microbiology course is one brand name you get to work and learn about all the above areas of the biological sciences.

The Microbiology is focusing on many areas like genetics, biochemistry and biology. Microbiology has the career can provide many future options. Clinical Laboratory Technology.

School of Arts and Science
Department of Microbiology

Certificate Course
on
Biofertilizer Production Technology
For admissions in the Academic Year
2021-22



Practical Research on the Cultivation of Biofertilizer Production in Soil

INTRODUCTION

Our earth is surrounded by several microbiological challenges that are increasing continuously in the day. Therefore the various crops in Biofertilizer Production Technology. The PRIST aims to increase the productivity by using biofertilizers, biological, biochemical, and biophysical, and biofarming plant growth. Biofertilizer technology has developed plant nutrient management for sustainable agriculture through this.

Importance of Biofertilizer Production Technology

Agriculture is the backbone of India. Most of the people in India depend on agriculture for their livelihood. Agriculture is the major source of employment in India. Agriculture is the backbone of Indian economy. Agriculture is the major source of employment in India. Agriculture is the backbone of Indian economy. Agriculture is the major source of employment in India. Agriculture is the backbone of Indian economy.

Course Coverage

- Introduction to Biofertilizer Production Technology
- Biofertilizer Production Technology
- Biofertilizer Production Technology
- Biofertilizer Production Technology

Objectives of the Programme

The course aims to provide knowledge on the use of Biofertilizer technology for the cultivation of various crops. The course also aims to provide knowledge on the use of Biofertilizer technology for the cultivation of various crops. The course also aims to provide knowledge on the use of Biofertilizer technology for the cultivation of various crops.

Level of Knowledge Expected

Students undergoing Biofertilizer Production Technology course will be expected to have a basic knowledge of the biological sciences and mathematics and should be undertaking the plant.

Duration of the programme

Eligibility criteria & Pre-requisites

Any graduate shall be eligible for the admission to the course.

Certificates

The candidates successfully completing the course the course shall be awarded a certificate of the effect to the appropriate body in School of Arts and Science, Department of Microbiology, PRIST Deemed to be University, Thanjavur, Tamilnadu.

Head of the Department
Department of Microbiology
School of Arts & Science
Post Deemed to be University, Thanjavur.

REGISTRAR
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SCHOOL OF ARTS AND SCIENCE
DEPARTMENT OF MICROBIOLOGY
Certificate Course in Hygiene & life

ACADEMIC YEAR 2022-2023
Subject Code: 21516HL

Total: 45 hours

Course objectives:

- To provide knowledge on different health indicators and types of hygiene methods
- To impart knowledge on different health care programmes taken up by India
- To make student understand the latest concepts of health such as HIA, EIA, SIA and SEA
- To enable student with disaster mitigation strategies

Course Outcomes:

On completion of this course, the students will be able to understand -

- What is a healthy diet
- How can we use available information to optimize our diet?
- Can nutrition be used for a healthy life?
- Is there a one-size-fits-all "good" diet or should we individualize our dietary goals?
- Awareness in public through digital media viz., mobile apps

Unit I: Basics of Nutrition

1. Nutrition – definition, importance, Good nutrition and malnutrition, Balanced Diet. Basics of Meal Planning
2. Carbohydrates –functions, dietary sources, effects of deficiency.
3. Lipids –functions, dietary sources,effects of deficiency.

Unit II: Health **(9 Hrs)**

4. Proteins –functions, dietary sources, effects of deficiency.
5. Brief account of Vitamins- functions, food sources,effects of deficiency.
6. Macro and micro minerals –functions, effects of deficiency; food sources of Calcium, Potassium and Sodium; food sources of Iron, Iodine and Zinc

Unit III: Health **(9 Hrs)**

7. Importance of water- functions, sources, requirements and effects of deficiency

Head of the Department
Department of Microbiology

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THANJAVUR - 613 403, TAMIL NADU

8. Health - Determinants of health, Key Health Indicators, Environment health & Public health, Health-Education: Principles and Strategies

9. Health Policy & Health Organizations: Health Indicators and National Health Policy of Govt. of India-2017; Functioning of various nutrition and health organizations in India viz., NIN (National Institution of Nutrition), FNB (Food and Nutrition Board), ICMR (Indian Council of Medical Research), IDA (Indian Dietetics Association),WHO-India, UNICEF-India

Unit IV: Hygiene **10 Hrs.**

10. National Health Mission: National Rural Health Mission (NRHM) Framework, National Urban Health Mission (NUHM) Framework

11. Women & Child Health Care Schemes: Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH+); Janani Shishu Suraksha Karyakaram (JSSK); Rashtriya Bal Swasthya Karyakram(RBSK); India Newborn Action Plan (INAP); Adolescent Health- Rashtriya Kishor Swasthya Karyakram (RKSK)

12. Disaster Management – Containment, Control and Prevention of Epidemics and Pandemics - Acts, Guidelines and Role of Government and Public

Unit IV: Hygiene **10 Hrs.**

13. Hygiene – Definition; Personal, Community, Medical and Culinary hygiene; WASH (WAter, Sanitation and Hygiene) programme

14. Rural Community Health: Village health sanitation & Nutritional committee (Roles & Responsibilities); About Accredited Social Health Activist (ASHA), Village Health Nutrition Day, Rogi Kalyan Samitis

15. Community & Personal Hygiene, Environmental Sanitation and Sanitation in Public places

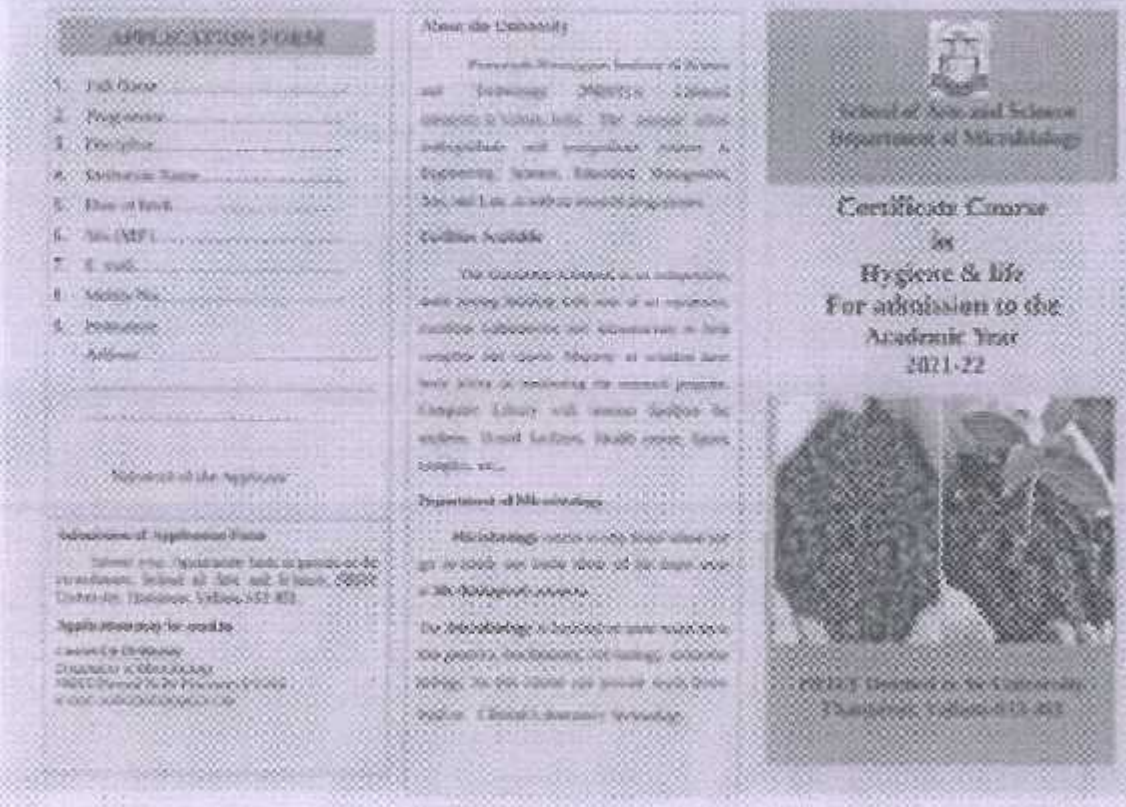
16. Public Awareness through Digital Media – An introduction to Mobile Apps of Government of India: Nidh, Swasth Bharat, No More Tension, Pradhan Mantri Suraksha Mandhan Abhiyan (PM Suraksa Yojana), My Bharat (Meri Mati), India fights Dengue, JSK Helpline, Ayushman Bhava, Arogya Setu, Covid 19AP

REFERENCES

1. Bamji, M.S., K. Krishnaswamy & G.N.V. Brahmam (2009) Textbook of Human Nutrition(3rd edition) Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi
2. Swaminathan (1995)Food & Nutrition(Vol I, Second Edition) The Bangalore Printing &Publishing Co Ltd., , Bangalore
3. Vijaya Khader (2008)Food, nutrition & health, Kalyan Publishers, New Delhi
4. Srilakshmi, B., (2008)Food Science, (5th Edition) New Age International Ltd., New Delhi

Head of the Department
Department of Microbiology
School of Arts & Science

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School of Arts and Science
Department of Microbiology

Certificate Course
in
Hygiene & life
For admission to the
Academic Year
2021-22

Head of the Department
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SCHOOL OF ARTS AND SCIENCE
DEPARTMENT OF ENGLISH

This is to inform all the UG students of English Department that the value added programme classes for Odd Semester academic Year 2022 – 2023 will be commenced from 18 – 07 – 2022. Hence requesting all the registered students to attend the class without fail.

Branch name	Year	Course offered
ENGLISH	I UG II UG III UG	Diploma in Content Writing, Diploma in Radio Jockey, Certificate Cource in Accent Trainig

HOD
PRIST
DEPT OF ENGLISH
PRIST UNIVERSITY
THANJAVUR-614 904

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Dean
School of Arts & Science
Ponnaiyah Ramajayam Institute of
Science & Technology (PRIST)
Deemed to be University
Thanjavur-613 403.

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SCHOOL OF ARTS AND SCIENCE

DEPARTMENT OF ENGLISH

2022 – 2023

Diploma

in

Content Writing

Eligibility : Students studying any degree programme

Course duration : 1 year

Examination : Practical exam
Duration: 3 hrs

Award of Certificate:
Certificates will be awarded after passing the practical exam

DEPT OF ENGLISH
PRIST UNIVERSITY,
THANJAVUR-614 904

REGISTRAR
Ponnaiyah Ramajayam Institute of
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(Institution Deemed to be University-
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THANJAVUR-613 403, TAMIL NADU

Dean
School of Arts & Science
Ponnaiyah Ramajayam Institute of
Science & Technology (PRIST)
Deemed to be University
Vallam, Thanjavur-613 403.

ABOUT THE UNIVERSITY

PRIST University, Ponnaiyah Ramajayam Institutions, made a foray into the Academic Domain, with the establishment of Sri Ram Institute of Computer Science and Technology in 1985. Over time, various institutions of higher learning such as Arts and Science College, College of Engineering and Technology, College of Education, Research Institution, Polytechnic College are added feathers to the PRIST crown. Today, PRIST commands a massive student base, spread across a whole array of campuses such as Puducherry, Trichy, Kumbakonam, Chennai and Madurai. The Academic research extends right from school education up to the level of the Ph.D Doctoral programmes in a rich array of disciplines such as Medicine, Engineering, Arts & Science, education, Pharmacy, Management, and Technology etc.

ABOUT THE DEPARTMENT

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HEAD
DEPT OF ENGLISH
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DIPLOMA IN CONTENT WRITING

Objectives:

Learn to generate traffic and sales by writing effective content.

Course Outcome:

Learn how to write appealing content that attracts alot of readers.

Course Content:

Unit I:

Basics of Content writing - The Concept of Content Writing and its relevance, Role and Functions of Content Writers

Unit II:

Types of Content writing - The process of Content Writing, Editing and Proof-Reading, Writing blogs, case studies, white papers

Unit III:

Visual Content – Infographics, Product Demonstrations

Interactive Content – Quizzes, Polls, Interactive white papers

Unit IV:

Tools of the trade - Social Media- Understanding the basics of social media, Understanding social media content writing, Understanding PR

Unit V:

Plagiarism laws in Content Writing- What is plagiarism, rules on plagiarism, How to write plagiarism-free copies.

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SCHOOL OF ARTS AND SCIENCE
DEPARTMENT OF ENGLISH
2022 – 2023
Diploma in Content Writing – 22DCW101

Objectives:

Learn to generate traffic and sales by writing effective content.
Build trust & connection with your audience for gaining authority as a writer.

Course Outcome:

Learn how to write appealing content that attracts alot of readers.
Learn internet writing guidelines such as keyword density, plagiarised content etc.
Understand legal aspects in writing such as Digital Millennium Copyright Act.

Course Content:

Unit I:

Basics of Content writing - The Concept of Content Writing and its relevance, Role and Functions of Content Writers

Unit II:

Types of Content writing - The process of Content Writing, Editing and Proof-Reading. Writing blogs, case studies, white papers

Unit III:

Visual Content – Infographics, Product Demonstrations
Interactive Content – Quizzes, Polls, Interactive white papers

Unit IV:

Tools of the trade - Social Media- Understanding the basics of social media, Understanding social media content writing, Understanding PR

Unit V:

Plagiarism laws in Content Writing- What is plagiarism, rules on plagiarism, How to write plagiarism-free copies.

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SCHOOL OF ARTS AND SCIENCE
DEPARTMENT OF ENGLISH
2022 - 2023
Entrolled student list
DIPLOMA IN RADIO JOCKEY - 22DRJ103

S.NO	Register Number	Name Of The Student	Signature of the student
1	2201EN10119	M.SURESH	M. Suresh
2	2201EN10120	R.V.MALAIYAN	R.v. Malaiyan
3	2201EN10121	RAJAKUMAR .S	S. Rajkumar
4	2201EN10122	RAJADURAI .S	S. Rajadurai
5	2201EN10123	ANAND .R	R. Anand
6	2201EN10124	VENGATESHAN .A	A. Vengatesha
7	2201EN10125	MURUGARAJ .S	S. Murugaraj
8	2201EN10126	SURYA .A	A. Surya
9	2201EN10127	SILAMBARASU .C	C. Silambarasu
10	2201EN10128	DANIEL RAJ .J.S	S. Daniel
11	2201EN10129	ANANDHARAJ. A	A. Anandharaj
12	2201EN10201	K.DEVI SRI	Devi
13	2201EN10202	S.ISHWARYA	S. Ishwarya
14	2201EN10203	MAHALAKSHMI .R	R. Mahal
15	2201EN10204	DELFI .S	S. Delfi
16	2201EN10205	JAYASREE .P.S	P.S. Jaya
17	2201EN10206	DIVYA .E	E. Divya
18	2201EN10207	AMALA.X	X. Amala
19	2201EN10208	DHIVYA .G	G. Divya
20	2201EN10209	MADHUVANDHI .R	R. Madhu
21	2101EN10118	S.AGARAN	S. Agaran
22	2101EN10119	G.SOORYAPRAKASH	G. Sooryaprakash
23	2101EN10120	B.RANILVARMA	B. Ranilvarma
24	2101EN10121	K.SABARISH	Sabarish
25	2101EN10122	J.PRAGADEESH	J. Pragadeesh
26	2101EN10123	R.HARIHARAN	R. Hariharan
27	2101EN10124	J.VASANTHKUMAR	J. Vasanthkumar
28	2101EN10125	A.JAMEELMOHAMED	A. Jameel
29	2101EN10126	S.INBAVEL	S. Inbavel
30	2101EN10127	S.NANDHAKUMAR	S. Nandhakumar

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SCHOOL OF ARTS AND SCIENCE

DEPARTMENT OF ENGLISH

2022 – 2023

Diploma course

in Radio Jockey

Eligibility : Students studying any degree programme

Course duration : 1 year

Examination : Practical exam
Duration: 3 hrs

Award of Certificate:
Certificates will be awarded after passing the practical exam

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DIPLOMA IN RADIO JOCKEY

Objectives

Make Confident, Creative and personality ability to do multi-tasking by handling public relations

To Roles ranged from supervising producers and appeared on a number of TV shows for making people aware of career choices as a Radio Jockey

Outcome

To enhance correct breathing techniques, pronunciation, modulation, projection etc.

To Enrich correct body language and flow of language

- Unit-I- Effectively make airlines, weather and railway announcements
- Unit-II- Effectively write/present interesting Radio Scripts & how to read the news on Radio & TV
- Unit-III- How to get over the fear of public speaking & "Professional Presentation" correct body language
- Unit-IV- Narration, cartoon and lip sync dubbing (Theory only)
- Unit-V- E-Book Narration- How to narrate & explore the upcoming E- book market boom

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SCHOOL OF ARTS AND SCIENCE
DEPARTMENT OF ENGLISH
2022 – 2023
Diploma in Radio Jockey

Objectives:

Make Confident, Creative and personality ability to do multi-tasking by handling public relations

To Roles ranged from supervising producers and appeared on a number of TV shows for making

people aware of career choices as a Radio Jockey

Course Outcome:

To enhance correct breathing techniques, pronunciation, modulation, projection etc.

To Enrich correct body language and flow of language

Course Content:

Unit I:

Effectively make airlines, weather and railway announcements

Unit II:

Effectively write/present interesting Radio Scripts & how to read the news on Radio & TV

Unit III:

How to get over the fear of public speaking & "Professional Presentation" correct body language

Unit IV:

Narration, cartoon and lip sync dubbing (Theory only)

Unit V:

E-Book Narration- How to narrate & explore the upcoming E- book market boom

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SCHOOL OF ARTS AND SCIENCE

DEPARTMENT OF ENGLISH

2022 – 2023

Certificate Course

in

Accent Training

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PRIST UNIVERSITY,
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Eligibility : Students studying any degree programme

Course duration : 6 months

Examination : Practical exam
Duration: 3 hrs

Award of Certificate:
Certificates will be awarded after passing the practical exam

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CERTIFICATE COURCE IN ACCENT TRAINING

Objectives:

Segmental and suprasegmental aspects of pronunciation
Phonemes and sounds in isolation

Course Outcome:

Ability to understand English spoken by native speakers
Ability to speak in a more neutral fashion
Increased career growth opportunities, Improved self-confidence

Course Content:

Unit I:
Foundations of Narrative Design

Unit II:
Visual Storytelling - Storytelling Structure: Time and Space, Interactive Storytelling

Unit III:
Advertising, Branding, and Information Design

Unit IV:
Computers, Multimedia, and World Building

Unit V:
Neutral Accent and its types

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SCHOOL OF ARTS AND SCIENCE
DEPARTMENT OF ENGLISH
2022 - 2023

Certificate Course in Accent Training- 22CAT101

Objectives:

Segmental and suprasegmental aspects of pronunciation
Phonemes and sounds in isolation

Course Outcome:

Ability to understand English spoken by native speakers
Ability to speak in a more neutral fashion
Increased career growth opportunities, improved self-confidence

Course Content:

Unit I:

Foundations of Narrative Design

Unit II:

Visual Storytelling - Storytelling Structure: Time and Space, Interactive Storytelling

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Unit V:

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DEAN

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PONNAIYAH RAMAJAYAM INSTITUTE OF SCIENCE & TECHNOLOGY (PRIST)

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SCHOOL OF ARTS AND SCIENCE
DEPARTMENT OF ENGLISH

This is to inform III UG students of MathsDepartment that the value added programme classes for Even Semester academic Year 2022 – 2023 will be commenced from 03 – 02 – 2023. Hence requesting all the registered students to attend the class without fail.

Branch name	Year	Course offered
MATHS	IIIUG	Diploma in visual Narratives Certificate Cource in Bussiness Communication

HOD

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SCHOOL OF ARTS AND SCIENCE

DEPARTMENT OF ENGLISH

2022 – 2023

Diploma

in

Visual Narratives

Eligibility : Students studying any degree programme

Course duration : 1year

Examination : Practical exam
Duration: 3 hrs

Award of Certificate:
Certificates will be awarded after passing practical exam

HEAD
DEPT. OF ENGLISH
PRIST UNIVERSITY
THANJAVUR-614 904

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DIPLOMA IN VISUAL NARRATIVES

Objectives:

Using elements of visual language effectively

Course Outcome:

Developing new uses and functions for word and image based storytelling

Course Content:

Unit I:

Visual storytelling techniques - to create dynamic imagery that conveys mood and emotion

Unit II:

Media, image making drawing instruments - critical reflection on narrative as a visual form

Unit III:

Analysis of essential drawing systems and techniques - "Glossary of Film Terminology" (Golden)

Analyze Once Upon a Time in the West as a visual narrative

Unit IV:

Compositional design and conceptualise scenes -Language of drawing, film, comics and sequential images

Unit V:

Animation - The Principles of Animation (Thomas&Johnston), Animation processes and studios. Analyze animated works as visual narratives

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SCHOOL OF ARTS AND SCIENCE
DEPARTMENT OF ENGLISH
2022 – 2023
Diploma in Visual Narratives

Objectives:

Using elements of visual language effectively

Developing and implementing a narrative design using images in sequence

Course Outcome:

Developing new uses and functions for word and image based storytelling

Exploring the codes and conventions relevant to visual narratives

Presenting a visual narrative to an identified audience

Course Content:

Unit I:

Visual storytelling techniques - to create dynamic imagery that conveys mood and emotion

Unit II:

Media, image making drawing instruments - critical reflection on narrative as a visual form

Unit III:

Analysis of essential drawing systems and techniques - "Glossary of Film Terminology" (Golden) Analyze Once Upon a Time in the West as a visual narrative

Unit IV:

Compositional design and conceptualise scenes -Language of drawing, film, comics and sequential images

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Animation - The Principles of Animation (Thomas&Johnston), Animation processes and studios, Analyze animated works as visual narratives

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SCHOOL OF ARTS AND SCIENCE

DEPARTMENT OF ENGLISH

2022 – 2023

CERTIFICATE COURSE

IN

BUSSINESS COMMUNICATION

Eligibility : Students studying any degree programme

Course duration : 6 months

Examination : Practical exam
Duration: 3 hrs

Award of Certificate:
Certificates will be awarded after passing the practical exam

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BUSSINESS COMMUNICATION

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CERTIFICATE COURSE IN BUSSINESS COMMUNICATION

Objectives

Exchanging information, knowledge, ideas, thoughts and messages between individuals or groups in organizations.

Outcome

Applies the knowledge by speaking confidently and communicating effectively in different business situations.

Unit- I- Introduction

Importance of communication skills in Business Management

Types of communication

The media and tools of communication.

Unit II – Verbal and Non-verbal Communication

Personal language and body language.

Types of managerial speeches: occasional speech: thematic speech.

Group Communication in: group discussions, meetings, seminars and conferences

Art of facing interviews for selection or placement, appraisal, disciplinary committees

Unit III – Written Communication Skills:

Process for business letters and memos, Job applications, Preparing follow-up messages and letters, Writing effective Business Reports

Digital Communication-Using Web sources of knowledge Sharing.

Unit IV – Recruitment and Employment Correspondence

Letter of Acceptance,

Letter of Resignation and Promotion, Testimonials and References.

Unit V – Business and Social Etiquette

Workplace hierarchy, appropriate business attire, Telephone Etiquette, table Etiquette.

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DEPARTMENT OF ENGLISH
2022 - 2023

CERTIFICATE COURSE IN BUSSINESS COMMUNICATION- 22CBC102

Objectives

Exchanging information, knowledge, ideas, thoughts and messages between individuals or groups in organizations.

To convey information effectively and efficiently to achieve the goals and objectives of the organization.

Course Outcome

Applies the knowledge by speaking confidently and communicating effectively in different business situations.

Projecting an image and shaping attitudes, stimulating a want or desire

Course Content:

Unit- I - Introduction - Importance of communication skills in Business Management, Types of communication

Unit II

Verbal and Non-verObjectives - Exchanging information, knowledge, ideas, thoughts and messages between individuals or groups in organizations.

Unit III

Written Communication Skills, Formats for business letters and memos, Job applications, Preparing a professional resume and cover letter

Unit IV

Recruitment and Employment Correspondence, Drafting the Employment Notice, joining Interview

Unit V

Business and Social Etiquette. Workplace hierarchy, appropriate business attire, Telephone Etiquette, table etiquette, Language lab class for practical communication.

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THANJAVUR-613 403, TAMIL NADU

Requisition Letter

Thanjavur,

17.10.2022

From

Head, Department of English,

PRIST Deemed to be University,

Thanjavur.

To

The Registrar

PRIST Deemed to be University,

Thanjavur.

Respected sir

Sub: Requesting Permission to conduct "Capability Enhancement program". reg.

Department of English has planned to organize Capability enhancement programme Enhancing Soft skill through literature on 20.10.2022 for the academic year 2022 - 2023. So, we request you to give us permission to conduct the programme.

Thanking you,

Yours faithfully

REGISTRAR
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THANJAVUR – 613403 - TAMILNADU

CIRCULAR

SCHOOL OF ARTS AND SCIENCE

DEPARTMENT OF ENGLISH

Date: 18.10.2022

This is to inform that Department of English is going to conduct "Capability enhancement program- Enhancing Soft Skill through literature on 20.10.2022. We cordially invite you all.

Venue: PRIST Block Seminar hall
Time: 2.00.PM
Resource person: Dr.K.Sivakumar, Associate professor, A.V.V.M. Sri Pushpam College. Poondi, Thanjavur
Place: Thanjavur

HOD

Ponnaiyah Ramajayam Institute of
Science & Technology (PRIST)
Institution Deemed to be University

Dean

Dean
School of Arts & Science
Ponnaiyah Ramajayam Institute of
Science & Technology (PRIST)
Deemed to be University
Vallam, Thanjavur-613 403.

REGISTRAR
Ponnaiyah Ramajayam Institute of
Science & Technology (PRIST)
(Institution Deemed to be University-
U/s 3 of the UGC Act, 1956)
THANJAVUR-613 403, TAMIL NADU

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NAAC ACCREDITED
THANJAVUR – 613403 - TAMIL NADU

DEPARTMENT OF ENGLISH

Cordially invites you for the

Capability enhancement program-

Enhancing Soft skill through literature

on

20.10.2022

Time: 2.00 PM

Venue: PRIST Block Seminar hall

RESOURCE PERSON

Dr.Sivakumar, Associate Professor,
A.V.V.M. Sri Pushpam College Poondi, Thanjavur

PRESIDENTIAL ADDRESS

Dr.L.Chinnappa, Dean of Arts and Science,

PRIST Deemed to be University

With Warm Regards
Head, Department of English

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SCHOOL OF ARTS AND SCIENCE

DEPARTMENT OF ENGLISH

Programme Name: - Capability enhancement programme- Enhancing Soft skill through literature

Programme Date: 20.10.2022.

Time: 2.00 PM

Venue: Silver Jubilee Block, PRIST University, Thanjavur

Dignitaries on Dais

Dr. L. Chinnappa, Director Admission, Dean School of Arts and Science

Dr.K.Sivakumar, Associate professor, A.V.V.M. Sri Pushpam College, Poondi, Thanjavur

Dr. R.Iniyavan, Head the Department of English, Deemed to be University

REPORT OF THE PROGRAMME:

The programme began with the invocation followed by the welcome address by Dr.R.Iniyavan, Head the Department of English. The capability enhancement programme to give Soft skills to all students. Capability development refers to creating a new capability or enhancing their individual skills and confidence to balance in their lives. The programme was focused on soft skills through literature. Resource person demonstrated some of the literary works and examples for receiving suggestions, acceptance of reality, molding characterization. 170 students actively participated in the activities.

HOD

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