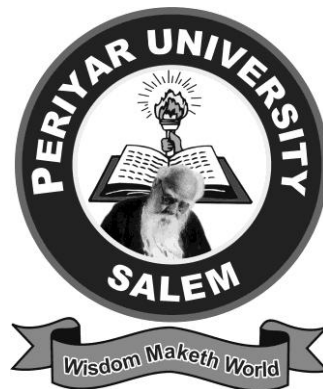


**PERIYAR UNIVERSITY**

**SALEM – 636 011.**



**PERIYAR INSTITUTE OF DISTANCE EDUCATION**

**[PRIDE]**

**CERTIFICATE IN AUTO CAD AND CATIA (6MONTHS)**

**SYLLABUS**

[Candidates admitted from 2007-2008 onwards]

# Certificate Course in AUTOCAD and CATIA

## Scheme of Examinations

<b>S.No</b>	<b>Title of the Papers</b>	<b>Max. Marks</b>
<b>Paper - I</b>	<b>Computer Fundamentals and graphics</b>	<b>100</b>
<b>Paper - II</b>	<b>Principles of CAD and CATIA</b>	<b>100</b>
<b>Practical - I</b>	<b>GUI applications &amp; Flash Lab</b>	<b>100</b>
<b>Practical - II</b>	<b>Design Lab</b>	<b>100</b>
<b>Total</b>		<b>400</b>

## Eligibility

A candidate who has passed in Higher Secondary Examination conducted by the Government of Tamilnadu or an Examination accepted as equivalent thereto by the syndicate, subject to such conditions as may be prescribed thereto are permitted to appear and qualify for the Certificate Course in AUTOCAD and CATIA of this university after a course of study of six months.

## Duration

The certificate course in AUTOCAD and CATIA shall consist of six month duration

## Passing Minimum

Candidates shall be declared to have passed the examination in a theory/practical of study only if he/she scores not less than 40 marks out of 100 marks.

Successful candidates passing all the papers and securing

- (i) 60 and above shall be declared to have passed the examination in First class
- (ii) 50 percent above and below 60% shall be declared to have passed the examination in Second class

### **Question Paper Pattern**

**Theory Paper: Total: 100 Marks**

**Part A (5 \*5 = 25 Marks)**

(One question from each unit with internal choice)

**Part B (15 \*5 = 75 Marks)**

(One question from each unit with internal choice)

**Practical Lab: Total: 100 Marks**

**80 Marks - Examination**

**20 Marks - Record**

**Practical - I**

One Question from GUI applications & Flash Lab exercise (either or type)

**Practical - II**

One Question from Design Lab exercise (either or type)

## **Paper - I: Computer Fundamentals and Graphics**

### **UNIT – I**

Introduction to Computers: Introduction – Types of Computers – Characteristics of Computers – Five generations of modern Computers- Classifications of digital computer system: Introduction – Microcomputers – Personal Computers – Workstations – Portable Computers – Minicomputers – Mainframes – Supercomputers – Network Computers.

### **UNIT – II**

Anatomy of a Digital computer: Functions and Components of a Computer – Central Processing Unit – Control Unit – Arithmetic Logic Unit – Memory – Register Addresses – Memory Units: Types of main memory. Input Devices: Keyboard – Mouse – OCR – OMR – Touch Screen. Output Devices: Introduction – Monitor – Classification of Monitors based on Colours and signals – Characteristics of a Monitor - Video Standards – Printer – Plotter – Sound Cards and Speakers – Auxiliary storage Devices: Introduction – Magnetic Tape – Hard Disk -CD Disks / Drives

### **UNIT – III**

**Output Primitives:** Points and Lines Loading frame Buffer – Line function - **Attributes of Output Primitives:** Line Attributes – Curve attributes – Color and Grayscale Levels – Area-fill attributes – Character Attributes, **2D Geometric Transformations:** Basic Transformations. **2D Viewing:** The Viewing Pipeline – Viewing Co-ordinate Reference Frame – Window-to-Viewport Co-ordinate Transformation - 2D Viewing

## **UNIT – IV**

**MS-WORD:** Learning Word Basics – Formatting a Word Document – Working with Longer Document. **MS-POWERPOINT:** Creating and Viewing Presentations – Editing a Presentation – Working with Presentation Special Effects

## **UNIT – V**

Introducing Flash: How Flash works – Uses of Flash – Obtaining Flash – Installing Flash – The Flash Environment- Getting Started: The Timeline – The Stage – Tools and toolbars – The Menu bar – Properties Inspector – Panels – Viewing options – Quick Start templates – Accessibility Creating Objects: Stage and overlay objects – Tools panel. Editing Objects : Grouping objects – Free Transform tool – Reshaping objects – Aligning objects

### **Text Books**

1. “Fundamentals of Computer Science and Communication Engineering”. Alexis Leon, Mathew’s Leon Vikas Publishing House, New Delhi, 1998. (Unit I & II)
2. COMPUTER GRAPHICS – Donald Hearn, M. Pauline Baker, 2nd edition, PHI. (Unit III)
3. Microsoft Office XP – fast & easy, DIANE KOERS, Prentice Hall of India Private Limited, 2001 (Unit IV)
4. FLASH MX in easy steps” - NICK VANDOME, Dreamtech, New Delhi. (Unit V)

## **Paper - II : Principles of CAD and CATIA**

### **UNIT – I**

**PHOTOSHOP-** Starting Photoshop CS2 - Photoshop Program Window  
**Working with Images:** Editing Images – Color Modes-**Making Selections:**  
Moving a Portion of Images – Editing Selections – Filling a Selection -  
Transforming Selections

### **UNIT – II**

**Painting Tools:** Drawing Tools –Retouching Tools-Layers-layers palette -  
cut, copy and delete layers - working with adjustment Layers- layer effects

### **UNIT – III**

**CAD/CAM defined-** automation and CAD/CAM- the design process-  
application of computers for design-creating the manufacturing database- benefits  
of CAD- hardware in CAD- the design workstation - the graphics terminal  
Introduction to a drafting system-basic facilities in AUTOCAD

### **UNIT – IV**

**Launching AutoCAD-** Text and Graphics Screens-Cursor- Canceling a  
Command- Menus and Colors- Toolbars- Status Bar and Command Prompt-  
Function and Accelerator Keys-Creating a New Drawing- Saving Drawings- basic  
geometric commands - **Draw Commands-** Line Command- Cartesian coordinate  
System- Dynamic Input- Orthogonal Lines- Polar Tracking- Circles- Arc  
Command- editing a drawing dimensioning introduction to a modeling system  
**Basic Display Commands-** ZOOM- PAN- Redraw and Regen- Blipmode-  
Drawing Aids- SNAP Command- Grid Command

### **UNIT - V**

**CATIA** -Computer Aided Three dimensional Interactive Application-  
history- Capabilities of CATIA - features- Application of CATIA- Application of  
CATIA- Image of CATIA- Sketching-Drafting- Wire frame and Surface Design

## **Text Books**

1. “COMDEX-DTP Course Kit” Vikas Gupta, Dreamtech Publishers-2008, NewDelhi,
2. CAD/CAM Computer Aided Design and Manufacturing, Mikell P.Groover, Emory W.Zimmers,Jr
3. .CAD/CAM principles and applications, P.N.RAO

## **Web Site Reference**

[http://en.wikipedia.org/wiki/Computer-aided\\_design](http://en.wikipedia.org/wiki/Computer-aided_design)  
[http://en.wikipedia.org/wiki/Computer-aided\\_manufacturing](http://en.wikipedia.org/wiki/Computer-aided_manufacturing)  
[http://en.wikipedia.org/wiki/Computer-aided\\_engineering](http://en.wikipedia.org/wiki/Computer-aided_engineering)  
<http://www.autocadmark.com/mambo/>  
[http://www.ogaly.com/nx4\\_books.htm](http://www.ogaly.com/nx4_books.htm)  
<http://www.webs1.uidaho.edu/mindworks/catia.htm>

## **Practical Lab -I : GUI applications & Flash Lab**

### **1. GUI APPLICATIONS EXERCISE**

#### **I. MS – WORD**

1. a. Starting MS-WORD, Creating, Saving, Printing (with options) Closing and exiting and study of Word-Menu / Toolbars
2. Create a document, Save it and edit the document as follows:
  - Find, Replace, Cut, Copy, Paste, Undo and Redo options
  - Using Bold, Underline and Italic, Change Character size
  - Formatting paragraph: Center, Left aligns & Right aligns, Changing paragraph and line spacing Using Bullets and Numbering in paragraphs, Creating Hanging paragraphs
3. Using tab settings enhancing the documents (Header, Footer, Page setup, Border, Opening and Closing Toolbars, Print Preview).
4. Creating Tables in a documents, Selecting
5. Drawing flow chart using drawing toolbar, inserting picture and setting frames

#### **II. MS – POWER POINT**

1. Creating a presentation using auto content wizard
2. Different views in power point presentation
3. Setting animation effects / grouping / ungrouping / cropping power point objects
4. Printing a presentation / Importing – Exporting files
5. Creating an organization chart in Power Point

### **2. FLASH LAB. EXERCISE**

1. Simple Animation
2. Tweened animation
3. Creating movies
4. Using action Scripts



## **Practical Lab -II : Design Lab**

### **PHOTOSHOP Lab Exercise**

1. Product Advertisement ( For automobile products with the animate picture and necessary features)
2. Editing the Images
3. Design a Greeting card
4. Design Invitation
5. Design using layers