PERIYAR UNIVERSITY
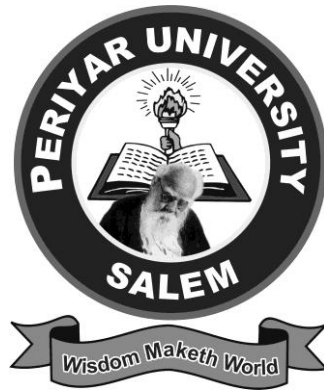
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PERIYAR INSTITUTE OF DISTANCE EDUCATION

[PRIDE]

CERTIFICATE IN AUTO CAD AND UNI GRAPHICS (6MONTHS)

SYLLABUS

[Candidates admitted from 2007-2008 onwards]

Certificate Course in AUTO CAD and UNIGRAPHICS

Scheme of Examinations

S.No	Title of the Papers	Max. Marks
Paper - I	Computer Fundamentals and GUI applications	100
Paper - II	Principles of CAD and Unigraphics	100
Practical - I	GUI applications Lab	100
Practical - II	CAD & Graphics Lab	100
	Total	400

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 UNIGRAPHICS of this university after a course of study of six months.

Duration

The certificate course in AUTOCAD and UNIGRAPHICS 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 passes 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 application & Flash Lab exercise (either or type)

Practical - II

   One Question from CAD & Graphics Lab exercise (either or type)

Paper - I Computer Fundamentals and GUI applications

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

Getting Started: Starting a Program – Identifying Common Screen Elements – Choosing Commands – Finding Common Ways to Work – Getting Help with Office

MS-WORD: Learning Word Basics – Formatting a Word Document – Working with Longer Document.

UNIT – V

MS-EXCEL: Creating a Simple Spreadsheet – Editing a Spreadsheet – Working with Functions and Formula – Formatting Worksheets – Completing Your Spreadsheet – Creating Charts

MS-POWERPOINT: Creating and Viewing Presentations – Editing a Presentation – Working with Presentation Special Effects

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 & V)

Paper - II : Principles of CAD and Unigraphics

UNIT – I

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

UNIT – II

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 **- Painting Tools**: Drawing Tools –Retouching Tools.

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 - basic geometric commands- editing a drawing dimensioning introduction to a modeling system- Draw Commands -Basic Display Commands

UNIT – IV

UNIGRAPHICS: Opening unigraphics and files-Open unigraphics-Open a new file-Open a part file-Printing, saving and closing part files-Unigraphics-nx3 interface-Coordinate systems -Using layers -Commands in layers -Important commands/dialogs

UNIT – V

Form features -Overview -Types of features -Primitives-Swept features -Feature operations -Types of feature operations -Feature operations on models -Drafting-Drafting of models

Text Books

1. FLASH MX in easy steps" - NICK VANDOME, Dreamtech, New Delhi. (Unit I)

2. "COMDEX-DTP Course Kit" Vikas Gupta, Dreamtech Publishers- 2008, NewDelhi,

3. CAD/CAM Computer Aided Design and Manufacturing, Mikell P.Groover, Emory W.Zimmers,Jr

4. 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_manufacturing
http://en.wikipedia.org/wiki/Computer-aided_engineering
http://en.wikipedia.org/wiki/Unigraphics
http://www.autocadmark.com/mambo/
http://www.ogaly.com/nx4_books.htm

Practical Lab -I : GUI applications Lab

1. GUI APPLICATIONS EXERCISE

I. MS – WORD

1. 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, Chance 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 – EXCEL

1. a. Create a work sheet, moving / copying / inserting / deleting rows and Columns. (Usage of cut, paste commands, copying a single cell, copying a range of data, filling up a cell. Undo command, Inserting a row, column Deleting rows and columns.)

   b. Formatting work sheets -Bold style, Italic style, Font size changing, Formatting numbers (Auto fill, Selection command, currency format, Currency syllabus, Specifying percentage (%) scientific notations, Drawing border around cells, Printing a work sheet (Print preview, Margin setting, Header, Footer)

2. a. Data base concept: Data base, Record field and field name – creating and sorting a data base and maintaining a data base (date form)

   b. Using auto filter, advanced filter, Creating subtotals and grand totals ,Using database functions

3. Creating charts-Using chart wizard (five steps), Changing the chart type (Pew, Bar, Line), Inserting titles for the Axes x, y, Changing colors, Printing charts

4. Using date, time and math functions-Entering current date, Using date arithmetic (adding and subtracting dates), Date functions (day, month, year), Using time functions (hour, minutes, second)

   Math functions(SUM, COUNT, AVERAGE, MAX, MIN, STDEV, VAR, MOD, ROUND, SORT)

   Logical and financial functions[Logical (IF / AND / OR / NOT), Financial (PMT, FV, NPER, RATE)]

5. Creating and running a macro ,Assigning button to a defined Macro, Editing a Macro

III 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

Practical Lab -II : CAD and Graphics Lab

Flash Lab. Exercise

1. Simple Animation

2. Tweened animation

3. Creating movies

4. Using action Scripts

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