(A)   COURSE TITLE & CODE   : MICROPROCESSOR PROGRAMMING

(CPE-501)

(B)   LEVEL   : FIVE

(C)   BRANCH / DISCIPLINE   : COMPUTER ENGINEERING

(D)   RATIONALE   :

This subject is basically designed to introduce the students with the microprocessor and microcomputers. The micro-processor 8085 architecture, working & programming is covered which aims to introduce the students with internal working of computer & helps to develop logical ability of student to prepare programs/software.

(E)   TEACHING AND EXAMINATION SCHEME

Sl. No.	Course Code	Name of Course	Teaching Scheme					Examination Scheme				Total Marks
								Theory		Practical		
			Pre-requisite	L	T	P	C	ET	PA	ET	PA	
1.	CSE-501	Microprocessor Programming	CSE-404	4	1	2	7	100	25	25	25	175

(F)   DETAILED COURSE CONTENT

CHAPTER – 1.0   ARCHITECTURE OF MICROPROCESSOR 8085
Architecture
- 8085 microprocessor architecture
- Buses
- Registers
- Flags

Preliminary Interfacing Devices
- Buffers
- Tri-state devices
- Decoders
- Encoders
- Latches

Memories & their interfacing
- Types of memories such as ROM , PROM , EPROM, EEPROM RAM (static and dynamic)
- Memory Organisation and operation
- Study of 6116, 2732 memory chip

CHAPTER – 2.0   ASSEMBLY LANGUAGE PROGRAMMING OF 8085

Classification of Instruction
- According to format,
- According to addressing modes
- According to operations**.**

Execution of an instruction.
- Timing Cycles.
- T-state.
- Op code Fetch Cycle.
- Machine Cycle.
- Memory Read/Write Cycle.
- I/O Read/Write Cycle.
- Instruction Cycle**.**

Assembly Programs Based On
- Data Transfer
- Arithmetic
- Logical
- Branching Instructions.
- Machine Central instructions.

CHAPTER – 3.0   INTERRUPTS,   SERIAL   I/O,   STACKS   AND SUBROUTINES.

Concepts of Stacks and subroutine
- PSW (Program status word)
- Concepts of stack and instructions of stacks

Subroutines.
- Concepts of subroutine.
- Unconditional and conditional call & return.

Interrupts of 8085.
- Hardware
- Software
- **Instruction related to interrupts.**

CHAPTER – 4.0   I/O DEVICES.

- **Memory mapped I/O and I/O mapped I/O**
- **Study of 8255.**
- **Study of 8155.**

CHAPTER – 5.0 APPLICATION OF MICROPROCESSOR

Interfacing of Devices
- Interfacing of ADC/DAC (0808/0809)
- Interfacing of stepper motor.

(G) SPECIFICATION TABLE SHOWING DISTRIBUTION OF MARKS AND HOURS

Chapter No.	Name of Chapter	Hours	Marks			
			K	C	A	Total Mark
1.0	Architecture of Microprocessor 8085.	15	4	6	4	18
2.0	Assembly language Programming of 8085	19	6	6	6	22
3.0	Interrupts, Serial I/O, Stacks And Subroutines.	17	6	6	4	22
4.0	I/O Devices.	15	4	8	4	20
5.0	Application Of Microprocessor	14	6	8	6	18
Total:		80				100

Abbreviations: K=Knowledge level, **C**= Comprehension Level, **A**=Application level

(H) IMPLEMENTATION STRATEGIES :

The subject will be taught as per the given teaching scheme for theory as well as practical.
The identified practical sections will be conducted along with theory section.
The subject teacher will prepare & provide learning material to students.
CBT (Computer Based Training) may be used if available

(I) LEARNING RESOURCES SUGGESTED TO BE USED (if available)

1. Lab manuals
2. CAI packages
3. OHP transparencies

(J) SUGGESTED LIST OF PRACTICALS/ DEMONSTRATIONS
Hours:32   Marks:25

Atleast two Assembly Programs Based On:

- Data Transfer
- Arithmetic
- Logical
- Branching Instructions
- Rotate.
- Program for 8 Bit Multiplication
- Program for Finding Largest.
- Program for Sorting
- Program for Block Transfer.
- Program based on Stack.
- Program based on Subroutines.
- Program for Delay Routines.
- Initialization of 8255 in Simple I/O mode.
- A program to generate Square wave.
- Interfacing of ADC/DAC.
- Interfacing of stepper motor.

(K)   REFERENCES BOOKS :

Author	Title	Edition	Year of Publication	Publisher & Address
R.P.Jain	Modern Digital Electronics			Tata Mc Graw Hill
Malvino Leach	Digital Principles.			Tata Mc Graw Hill
R.Gaonkar	8085/8080 Architecture			Penram International
A.P.Mathur	Introduction to Microprocessor			
B.Ram	Introduction to Microprocessor			

(A) COURSE TITLE AND CODE   : CLIENT/SERVER APPLICATION
                                                        (CPE-503)
(B) LEVEL   : FIVE
(C) BRANCH/DISCIPLINE   : COMPUTER ENGINEERING
(D) RATIONALE   :

The aim of this subject is to make the students understand the basic concepts of client server architecture. The students will also develop competence to use structured query language to design and develop client server based application program.

(E) TEACHING AND EXAMINATION SCHEME

Course Code	Name of Course	Teaching Scheme					Examination Scheme				Total Marks
							Theory		Practical		
		Pre-requisite	L	T	P	C	ET	PA	ET	PA	
CSE-503	Client/ Server Application	CSE-408	3	1	2	6	75	25	50	25	175

(F) DETAILED COURSE CONTENT

CHAPTER – 1.0   AN OVERVIEW OF CLIENT SERVER ARCHITECTURE AND ORACLE

- **Client server Architecture, benefit and pitfalls of client server computing, An overview of RDBMS**
- Introduction to Oracle:What is Oracle server, its components, SQL, Forms, Reports, Oracle Architecture, Developer 2000 and Designer 2000
- Overview of the Data Integrity with DBMS, data concurrency: Data locks, Data security: Granting access, Extending and restricting privileges
- Data entry using form applications, Query tools and reporting application, GUIs

CHAPTER – 2   INTERACTIVE SQL
- Invoking SQL * Plus, DDL DML, DQL, The Oracle Data Types, Creating Tables, Insertion of Data into Table, Updating the contents of a Table, Deletion Operations, Modifying, Removing, Deleting, Dropping Tables, Applying Data Constraints, Query, Oracle Functions, Grouping Data from Tables in SQL, aggregate function of oracle, Numerical string and date functions in SQL, Joins: equi Join, non-equi Join, inner, outer joins.
- Sub-queries: using Unions, Intersect and Minus clause Indexes, Views Sequences.

CHAPTER – 3   PL/SQL
- PL-SQL execution environment, PL/SQL Character Set, Operators, Variables, Common Data Types, Components, PL/SQL syntax, Block structure, conditional and looping statements, Oracle transactions, Locks, error handling.

CHAPTER – 4   STORED PROCEDURES AND FUNCTIONS
- Procedures: advantages of procedures, declarative part, Executable part, Exception handling part creating procedure, Executing Procedures.
- Functions: Advantages of functions, creating, executing, Deleting a stored function.

CHAPTER – 5   DATABASE TRIGGERS
- Introduction, use of database triggers type of triggers, syntax for creating a trigger, enabling, disabling, replacing and dropping triggers, Creating Application using Database Triggers.

(G) SPECIFICATION TABLE SHOWING DISTRIBUTION OF MARKS AND HOURS

Chapter No.	Name of Chapter	Hours	Marks			
			K	C	A	Total Mark
6.0	An Overview Of Client Server Architecture And Oracle	12	2	4	4	10
7.0	Interactive SQL	14	2	6	6	14
8.0	Pl/SQL	10	2	7	6	15
9.0	Stored Procedures And Functions	12	2	6	10	18
10.0	Database Triggers	16	2	6	10	18
	Total	64	10	29	36	75

Abbreviations: **K**=Knowledge level, **C**= Comprehension Level, **A**=Application level

(H) IMPLEMENTATION STRATEGIES

Concepts of DBMS will be implemented by using Oracle 8.0/LATTER Version RDBMS Package. The teachers may make the students to develop as much as client server application programs as possible.

(I) LEARNING RESOURCES SUGGESTED TO BE USED
4. Lab manuals if available
5. CAI packages if available
6. Existing software systems for demonstrations

(J) SUGGESTED LIST OF EXPERIMENTS/ TUTORIALS:

Hours: 32   Marks :50

- **List of Practical**
- **Assignments and Practice in developing client server programs using Oracle.**
- **Tutorial on selected topic may also be given.**

(K)   REFERENCE BOOKS

S.No.	Title	Edition, Year of Publication	Author, Publisher & Address
1.	Introduction to Database Management System	Latest	Navin Prakash Tata Mcgraw Hill
2.	Mastering Oracle 7.0 and Client/Server Computing	Latest	Steven M, Bobrowski, BPB Publications
3.	Oracle 7.0	Latest	Evan Barose BPB Publication.
4.	Oracle- the complete reference	Latest	George Koch & Kevin Loney, Oracle Press (TMH)
5.	Using Oracle 8.		William Page Jr. And Nathen Hughes Abraham silberschaty Practice Hall of India

(A)   **COURSE TITLE AND CODE**   **: SYSTEM SOFTWARE (CPE-504)**

(B)   **LEVEL**   **: FIVE**

(C)   **BRANCH/DISCIPLINE**   **: COMPUTER ENGINEERING**

(D)   **RATIONALE**   **:**

This subject gives concepts of System Programming; covering language processors, Assemblers, linker and loaders, macro processors, compiler and interpreters that makes possible for students to appreciate the finer aspects in design of these software components. After going through this course the students will have an understanding of the various types of system programming and their applications in various situations.

(E)   **TEACHING AND EXAMINATION SCHEME**

Course Code	Name of Course	Teaching Scheme					Examination Scheme				Total Marks
							Theory		Practical		
		Pre-requisite	L	T	P	C	ET	PA	ET	PA	
CSE-504	System Software	G-202	4	-	1	5	100	-	25	-	125

(F)   **DETAILED COURSE CONTENT**

CHAPTER – 1.0   LANGUAGE PROCESSORS

- Language processing activities
- Fundamentals of language processing
- Fundamentals of language specification
- Language processor development toolkit

CHAPTER – 2.0   ASSAMBLERS

- Elements of assambly language programming
- Simple assembly scheme
- Pass structure of assemblers
- Single pass assemblers
- Double pass assemblers

CHAPTER – 3.0   MACROS AND MACRO PROCESSORS
- Macro definition and calls
- Macro expansion
- Nested macro calls
- Design of macro processor

CHAPTER –4.0   COMPILERS AND INTERPRETERS
- Aspects of compilation
- Memory allocation
- Compilation of expressions
- Compilation of control structures
- Code optimisation
- Working of interpreters

CHAPTER – 5.0   LINKERS
- Linking concepts
- Design of linkers
- Self relocating programmes
- Linker for MS dos
- Linking for overlays
- Loaders

CHAPTER – 6.0   SOFTWARE TOOLS

- Software tools for program development
- Editors
- Debug monitors
- Programming environment
- User interfaces

(G) SPECIFICATION TABLE SHOWING DISTRIBUTION OF MARKS AND HOURS

Chapter No.	Name of Chapter	Hours	Marks			
			K	C	A	Total Mark
11.0	Language processors	9	6	6	2	14
12.0	Assemblers	12	4	8	8	20
13.0	Macros and macro processors	13	6	8	8	22
14.0	Compilers and interpreters	10	4	6	5	15
15.0	Linkers	10	4	6	4	14
16.0	Software tools	10	4	5	6	15
Total:		64				100

Abbreviations: **K**=Knowledge level, **C**= Comprehension Level, **A**=Application level

(H) IMPLEMENTATION STRATEGIES

The subject will be taught as per the given teaching scheme .The practical sessions will be conducted along with respective theory sessions. Teachers are expected to conduct practical demonstrations also to explain the internal working of various system programs The subject teacher will prepare & provide learning material to students.

(I) LEARNING RESOURCES SUGGESTED TO BE USED(if available)
7. Lab manuals if available
8. CAI packages
9. OHP transparencies
10. Tutorials on Internet

(J) SUGGESTED LIST OF PRACTICALS/ DEMONSTRATIONS/
     Hours:16   Marks:25

Following suggested list of experiment on assembler may be performed

- Program for 8 Bit Multiplications
- Program for Finding Largest from given nubbers.
- Program for Sorting
- **Program for Block Transfer.**

- Program based on Stack.
- Program based on Subroutines.
- Writing and executing small macros
- Writing macro for calculating simple expressions like a*b+c*d in the accumulator
- Experiments based on nested macro calls
- Demonstration of various software tools for program design, coding, compilation/interpretation, testing and debugging.

(K)   REFERENCE BOOKS:

S.No.	Title	Edition, Year of Publication	Author, Publisher & Address
1.	System programming and operating system	Latest	D.M. Dhamdhere, tata mcgraw hills
2.	Computer Organization and System	Latest	Dr. Madhulika JainSatish Jain, BPB publication
3.	Assembly Language Step-by-step: Programming with DOS and Linux	Latest	Jeff Duntemann ,Paperback

Note : Any other book that covers the above syllabus can also be used.

(A) COURSE TITLE AND CODE   : WEB PAGE DESIGN (CPE-506)

(B) LEVEL   : FIVE

(C) BRANCH/DISCIPLINE   : COMPUTER ENGINEERING

(D) RATIONALE   :

Catering to fast developments in Internet and Web technology, it is essential that the information technology students are well aware of various tools used in Web page designing and hosting of web pages. This course content strives to inculcate the skills necessary for a student to effectively use these tools & techniques as per the industry requirements.

(E) TEACHING AND EXAMINATION SCHEME

Course Code	Name of Course	Teaching Scheme					Examination Scheme				Total Marks
							Theory		Practical		
		Pre-requisite	L	T	P	C	ET	PA	ET	PA	
CSE-506	Web Page Design	G-202	2	1	3	6	75	25	50	25	175

(F) DETAILED COURSE CONTENT

CHAPTER – 1.0   INTRODUCTION TO WEB DESIGNING

- Web page and Web site
- Planning
- Organizing
  Hierarchical, Linear, Webbed.
- Implementing
- Overview of Web Page Editors such as: MS front page/ Dream weaver
- Testing
- Web publishing.
- Process of Web publishing
- Maintenance
- Uploading Web pages
- Using FTP
- Web hosting
- Shared hosting
- Running a Local Web server

CHAPTER – 2.0   DEVELOPMENT OF A WEB PAGE

- Introduction to HTML
  - Components of HTML
  - Tags (closed and open), Elements, Attributes
- Structure of HTML code
  - Head
  - Body
- Structure Tags
  - Standard HTML, Tab HTML, Header, Title and body
- Block level tags
  - Block Formatting, Heading, Paragraph, Comments, Breaks, Centre, Text
  - Alignment and font size
- Text Level Tag
  - Bold Italic, Moonscape, Underlined, strike through, superscript, subscript
- Horizontal Rules
- Colours in WEB page
  - Background colour, Text colour, Link colour
- Special Characters

- Lists
  - Ordered lists
  - Unordered lists
  - Definition list
  - Nesting List
- The Metatag

CHAPTER – 3   LINKING OF HTML DOCUMENTS AND IMAGES

- Concepts of URL
- Linking HTML Documents
  - Anchor Tag
  - Linking to a Document in the same folder
  - Linking to a Document in a different folder
  - Linking to a Document on the web
  - Linking to specific locations within the Document
  - Inserting Email links
- Adding Images
  - Types of images
  - GIF
  - JPEG
  - PNG

- Effect of physical size and file size of image on downloading.
  - IMG tag
  - Image formatting
  - Alignment
  - Resizing
  - Vertical and Horizontal spacing
  - Wrapping text
- Image as a link
- Image Maps
  - Server side Image map
  - Client side Image map

CHAPTER – 4   TABLES, LISTS & FRAMES

- Table Tags
  - <TABLE >, <TR>, <TH>, <TD> <TC> Tags
- Spanning Rows and Coloumns
  - < ROWSPAN>, < COLSPAN> Tag
- Formatting tables using attributes.
  - BORDER, BORDERCOLOR, NOBORDER,
  - BGCOLOR, BACKGROUND, ALLIGN,
  - WIDTH,NOWRAP,CELLSPACING, CELL
  - PADDING
- Caption tag
  - tag

LISTS & FRAMES

- Various types of lists, ordered list, unordered list

- Tags – OL, UL, LI, DIR, menu, DL, DD, DT

CREATING FRAMES AND LAYERS.
- Introduction to frames
- Advantages and disadvantages of using frames.
- The <FRAMESET>, <FRAME> and <NOFRAME> tags.
- Formatting frames using attributes.
- Frameborder,border,noresize, scrolling, allignment, margin width bordercolor.
- Frame targeting.
- Creation of layer, switching to different layers.

CHAPTER –5   DEVELOPING HTML FORMS.

- Creating Forms.
- Form controls.
- Text controls.
- Password fields
- Radio buttons
- Check boxes
- Reset and submit buttons.
- Forms control selection, option processing

CHAPTER –6   <u>JAVA SCRIPTING</u>
- Purpose of scripting
- Scripting Languages JavaScript and VB script
- Introduction to JavaScript.
- Javascript Terminology
- Object, property, Method, Statement, Function, Event and event handler
- Embedding Java Script
- Adding Java Script block in Header
- Linking Java Script
- Mouse events. (on mouse over, on mouse pad)
- On Click, on Change and on Submit events
- Handlers.

(G) SPECIFICATION TABLE SHOWING DISTRIBUTION OF MARKS AND HOURS

S. No.	Chapter No.	Name of Chapter	Hours	K	C	A	Total Mark
1.	17.0	Introduction to web designing	5	4	2	2	10
2.	18.0	Development of a web page	6	4	2	6	11
3.	19.0	Linking of HTML documents and images	7	4	4	6	12
4.	20.0	Tables Lists and Frames	8	4	4	6	12
5.	21.0	HTML Forms	10	4	4	6	14
6.	22.0	Scripting	12				16
		Total	**48**				**75**

Abbreviations: **K**=Knowledge level, **C**= Comprehension Level, **A**=Application level

(H) IMPLEMENTATION STRATEGIES

The subject Web Page designing for Diploma Students in Computer Technology is designed to make the students familiar with the process of Web designing, various types and layouts of Web pages and to make them to be able to host their own Web pages using different Web technologies being used in the Industry.

All the chapters should be treated according to their weightage in theory as well as practical.
It is better if exposure to some major features of any of the web page editor like MS FrontPage is given in the beginning so as to appreciate the designing of a page. At later stage HTML be introduced.
One can use the editors such as notepad, edit plus or any other text editor for writing HTML codes for the web page designing.

(I) LEARNING RESOURCES SUGGESTED TO BE USED

11. Lab manuals if available
12. OHP transparencies
13. Internet surfing

(J) SUGGESTED LIST OF PRACTICALS/ DEMONSTRATIONS
Hours:48   Marks :50

- Create Web page and apply some block level tags, text level tags.
  - Create Web page and apply background colour, text colour, horizontal rules. And special characters.
  - Create Web Page and include ordered list, unordered list, definite list and nested list.

- Create Web page and include links to
  - local page in same folder
  - page in different folder
  - page on the Web
  - specific location within document

- Include images in the web page with different alignments and wrapped text.
- Include images as links in the Web page.
  - Create tables and format tables using basic table tags and different attributes..
  - Create a frameset that divides browse window into horizontal and vertical framesets
- Creating layer based Web Page.

(K)   REFERENCE BOOKS

S.No.	Title	Edition Year of Publication	Author Publisher & Address
1.	HTML : The complete Reference	Latest	Thomas A. Powell Tata McGraw Hills Publishing Co.l Ltd. N. Delhi
2.	Mastering HTML	Latest	D.S.Ray and E.J.Ray BPB Publications N. Delhi
3.	Java Script in 21 days	Latest	Techmedia Publication
4.	HTML in 21 days	Latest	Techmedia Publication
5.	**Pure JavaScript**	Latest	Allan, Jason, Charlton TechMedia publication.