TILAK MAHARASHTRA VIDYAPEETH, PUNE

TEACHING AND EXAMINATION SCHEME FOR DIPLOMA COURSE

COURSE NAME : DIPLOMA IN COMPUTER ENGINEERING

COURSE CODE : CO

DURATION OF COURSE : 6 SEMESTERS

SEMESTER : SECOND **DURATION : 16 WEEKS**

FULL TIME

SR. NO.	SUBJECT TITLE	SUBJECT CODE	TEACHING SCHEME		EXAMINATION SCHEME											
			TH	PR	PAPER HRS	TH		INT	TOTAL		PR		OR		TW	
						Max	Min		Max	Min	Max	Min	Max	Min	Max	Min
1	English-II	CO2001	04	02***	3	80	32	20	100	40	--	--	--	--	25*	10
2	Mathematics-II	CO2002	04	--	3	80	32	20	100	40			--	--		
3	Basic Electronics	CO2003	04	02	3	80	32	20	100	40	25*	10	--	--	--	--
4	Electrical Technology	CO2004	04	02	3	80	32	20	100	40	--	--	--	--	25*	10
5	Programming in C	CO2005	04	02	3	80	32	20	100	40	50**	20			25*	10
6	Web Page Designing	CO2006	--	04	--	--	--	--		--	50*	20	--	--	--	--
7	Professional Practices-I	CO2007	--	02***											50*	20
TOTAL			**20**	**14**	**--**	**400**	**--**	**100**	**500**	**--**	**125**	**--**	**--**	**--**	**125**	**--**

STUDENT CONTACT HOURS PER WEEK : **34 HRS : Theory and Practical Periods are of 60 minutes each**

* - INTERNAL ASSESSMENT , **- EXTERNAL ASSESSMENT, ***-TUTORIAL

TOTAL MARKS – 750

ABBREVIATIONS : TH – THEORY , INT- INTERNAL, PR – PRACTICALS , OR –ORAL, TW – TERMWORK

All Practical, Orals and Term Work assessments are to be done as per the prevailing norms for implementation and assessment norms.

COURSE NAME : ALL BRANCHES OF DIPLOMA IN ENGINEERING

COURSE CODE : ET/ME/CO

SEMESTER : SECOND

SUBJECT TITLE : ENGLISH-II

SUBJECT CODE : CO2001

TEACHING AND EXAMINATION SCHEME:

Teaching Scheme		Examination Scheme						
TH	**TUT**	**PAPER HRS**	**TH**	**INT**	**PR**	**OR**	**TW**	**TOTAL**
04	02***	03	80	20	--	--	25*	125

Pre-requisites:The student must know the following concepts:

1. Listening
2. Reading
3. Writing
4. Understand the meaning of the sentence.
5. Should know basic grammar.

Objectives: The student will be able to

1. Comprehend the given passage.
2. Answer correctly the questions on seen & unseen passages.
3. Increase Vocabulary.
4. Apply grammar rules for correct writing.
5. Inculcate habit of reading.

Subject title: ENGLISH-II	**Subject code: CO2001**

Contents : Theory

Unit	Name of the Topic	Hours	Marks
01	**PART I: TEXT** Vocabulary - Understanding meanings of new words from text Comprehension - Responding to the questions from text. Identifying parts of speech.	**12**	**30**
02	**PART II: APPLICATION OF GRAMMAR** • Verbs • Tenses Do as directed (active /passive, Direct/indirect, affirmative/negative/ assertive, question tag, remove too, use of article, preposition ,conjunctions, interjections, punctuation)	**16**	**12**
03	**PART III: PARAGRAPH WRITING** • Definition - Types of paragraphs • How to write a paragraph	**08**	**10**
04	**PART IV: VOCABULARY BUILDING** • Word formation • Technical Terms • Use of synonyms /antonyms/Homonyms/ paroxysm • One word substitute	**12**	**28**
	TOTAL	**48**	**80**

List of Assignments:

1) Building of Vocabulary -- (4 Hours) (2 assignments)
   a) 50 words for each assignment from the glossary given in the text book at the end of each chapter
   b) Technical Terms – (2 Hours)(1 assignment)
   c) Identify 10 technical words from the respective branches. e. g. corrosion, lubricant. Resource -- Encyclopedia/Subject Books
   d) Grammar – (4 Hours)(2 assignments)
2) Insert correct parts of speech in the sentences given by the teachers. 16 sentences--Two each, from the different parts of speech)
3) Punctuate the sentences given by the teachers. (10 sentences)
4) Conversational skills: Role plays (8 hours)
   a) Students shall perform the role play on any 6 situations given by the teacher. Dialogue writing. (2 assignments)
   b) Write Paragraphs on given topics - (2 assignments)
5) Write four paragraphs of different topics **(two assignments each**).
6) Newspaper reading and report writing – (4hours)(2 assignments)
   a) Describe two events from the newspaper as it is.
   b) Describe two events as per topic given by the teacher.
   c) Common errors in English – (4 hours) (2 assignments)
   d) Find out the errors and rewrite the sentences given by the teacher. (20 sentences)

Recommended Books:

Sr. No	Title	Author	Publisher
01	Contemporary English grammar, structures and composition	David Green	Macmillan
02	English grammar and composition	R. C. Jain	Macmillan
03	Thesaurus	Rodgers	Oriental Longman
04	Dictionary	Oxford	Oxford University
05	Dictionary	Longman	Oriental Longman
06	English for practical Purposes	Z. N. Patil et al	Macmillan
07	English at Workplace	Editor - Mukti Sanyal	Macmillan
08	English Grammar & Composition	Wren & Martin	S. Chand

COURSE NAME : ALL BRANCHES OF DIPLOMA IN ENGINEERING

COURSE CODE : ET/ME/CO

SEMESTER : SECOND

SUBJECT TITLE : MATHEMATICS-II

SUBJECT CODE : CO2002

TEACHING AND EXAMINATION SCHEME:

Teaching Scheme		Examination Scheme						
TH	**PR**	**PAPER HRS**	**TH**	**INT**	**PR**	**OR**	**TW**	**TOTAL**
04	--	03	80	20	--	--	--	100

Pre-requisites: The student must know the following concepts:

1. Factorization of polynomials
2. Measures of central Tendency (Mean, Mode, Median)
3. Measures of dispersion.
4. Complex numbers.
5. Concept of Displacement, Velocity & Acceleration.
6. Formulae of factorization & expansion.
7. Basic formulae of Trigonometry.
8. Concept of probability.
9. Rules of algebraic expressions for the numbers with positive and negative signs.
10. Equations of lines (Tangents & Normals)

Objectives: The student will be able to

1. Apply Mathematical terms, concepts, principles and different methods for studying engineering subjects
2. Apply Mathematical methods to solve technical problems.
3. Use Mathematical techniques necessary for daily and practical problems.

Subject Title: MATHEMATICS-II	Subject Code: CO2002

Contents : Theory

Unit	Name of the Topic	Hours	Marks
01	**FUNCTION AND LIMIT** **Function** Definitions of variable, constant, intervals such as open, closed, semi – open etc. Definition of function, value of a function and types of functions. **Limit** Definition of neighborhood, concept and definition Limit. Limits of algebraic, trigonometric, exponential and logarithmic functions with simple examples.	08	16
02	**DERIVATIVES** Definition of derivatives, notations. Derivatives of standard functions. Rules of differentiation. (without proof) Such as Derivatives of sum or difference, scalar multiplication, Product and quotient. Derivatives of composite function (chain rule) , Derivatives of inverse and inverse trigonometric functions, Implicit functions Logarithmic differentiation. Derivatives of parametric functions. Derivative of one function with respect to another function. Second order differentiation. **Applications Of Derivative** Geometrical meanings of derivative, tangent and normal, rates and motion, maxima and minima, radius of curvature	12	20
03	**VECTORS** Definition of vector, position vector, Algebra of vectors (Equality, addition, subtraction and scalar multiplication) Dot (scalar) and cross (vector) product with properties. **Application** Work done and moment of force about a point & line	08	08
04	**STATISTICS AND PROBABILITY** **Statistics** Measures of central tendency (mean, mode &median) for ungrouped and grouped frequency distribution. Graphical representation (Histogram and Ogive curves), to find mode and median. Measures of dispersion such as range, mean deviation, standard deviation, Variance and coefficient of variation. Comparison of two sets of observations**.** **Probability** Definition of random experiment, sample space, event, occurrence of event and types of events (Impossible, mutually exclusive, exhaustive, equally likely). Definition of probability, Addition and multiplication theorems of probability	10	20

05	**COMPLEX NUMBER** Definition of complex number. Cartesian, polar, Exponential forms of Complex No. Algebra of complex number (equality, addition, Subtraction, multiplication and division) De-Moivre's theorem. (without proof) and simple problems. Eulers form of circular functions, Hyperbolic functions and relations between circular & hyperbolic functions.	**10**	**16**
	TOTAL	**48**	**80**

Recommended Books:

Sr. No.	Title	Author	Publisher
01	Mathematics for polytechnic	S. P. Deshpande	Pune Vidyarthi Griha Prakashan, Pune
02	Calculus: single variable	Robert T. Smith	Tata McGraw Hill
03	Advanced Engineering Mathematics	Dass H. K.	S. Chand Publication, New Dehli
04	Fundamentals of Mathematical Statistic	S. C. Gupta and Kapoor	S. Chand Publication, New Dehli
05	Higher Engineering Mathematics	B. S. Grewal	Khanna Publication, New Dehli
06	Applied Mathematics	P. N. Wartikar	Pune Vidyarthi Griha Prakashan , Pune

COURSE NAME : DIPLOMA IN COMPUTER ENGINEERING

COURSE CODE : CO

SEMESTER : SECOND

SUBJECT TITLE : BASIC ELECTRONICS

SUBJECT CODE : CO2003

TEACHING AND EXAMINATION SCHEME:

Teaching Scheme		Examination Scheme						
TH	**PR**	**PAPER HRS.**	**TH**	**INT**	**PR**	**OR**	**TW**	**TOTAL**
04	02	03	80	20	25*	--	--	125

Pre-requisites: The student must know the following concepts:

1. Basics of semiconductors.
2. P- type of semiconductors.
3. Classification of semi conductor devices.
4. Concept of diode & formation of PN-junction.

Objectives: The student will be able to

1. Define Diode & its working.
2. Define Rectification.
3. Define Transistor & types.
4. Classify transistors & comment on configuration.
5. Classify Integrated circuits.

Subject Title: BASIC ELECTRONICS	Subject Code: CO2003

Contents: Theory

Unit	Name of the Topic	Hours	Marks
01	**INTRODUCTION TO ELECTRONICS** Definition of Electronics, Application of Electronics, Communication and Entertainment, Defense, Industrial Applications, Medical Sciences, Instrumentation. **Passive components**: Resistors: definition, symbol, unit. Types of resistors: fixed, variable, LDR, thermistor (symbols and list of applications only), Resistor colour code, wattage (w.r t. size), Capacitors: definition, symbol, unit, Types of capacitor (to be shown in practical, no theory), Fixed: mica, paper, ceramic, electrolytic. Variable: Gang capacitor. Inductor: definition, symbol, unit, Types of Inductors: fixed, variable, Transformer: symbol, types (step-up and step-down), applications (All the topics to be covered in the practical).	02	10
02	**SEMICONDUCTOR THEORY** Structure of atoms, Energy level diagram, Energy Band diagram, Conductors, Insulators, Semiconductors (based on band theory), Intrinsic semiconductor: Si, Ge Doping, Extrinsic semiconductor: P type, N type.	04	08
03	**SEMICONDUCTOR DIODE** Diode (symbol), P-N junction, formation of P-N junction, P-N junction with no external bias (barrier potential, depletion region), P-N junction with external bias (forward and reverse bias), circuit for V-I characteristics of diodes: knee voltage, static resistance, dynamic resistance, reverse breakdown voltage , Types of diode: Zener diode (symbol, V-I characteristics, operating principle, Zener voltage, Zener breakdown, avalanche breakdown), Symbol, operating principle, application related to characteristics of LEDs, Photo-diode, point contact diode, varactor diode. schottkey diode. Testing of diode using analog multimeter (practical only).	10	12

04	**RECTIFIERS FILTERS AND REGULATORS** Rectifiers: definition, need of rectification, types of rectifiers: Half Wave Rectifier, Full Wave Rectifier: Centre Tap and Bridge. Circuit diagram, operation, i/p - o/p waveforms, Vavg (Vdc), Vrms, Iav(Idc) Irms. Ripple factor, efficiency, PIV (No derivation expected) for all types rectifiers. Comparison of Rectifiers. Filter: Need of filters, Types of filters: L, C, LC, Circuit diagram, working principle, I/P O/P waveform, Formula of ripple factor for each type, Comparison of filters Regulator: Need of Regulators, Zener diode as Regulator. Regulation factor: Load and line Regulation. Basic block diagram of Regulated Power Supply.	**10**	**14**
05	**BIPOLAR JUNCTION TRANSISTOR** Introduction: Types - NPN, PNP junction transistors, Symbol, operating principle (NPN Transistor only), Transistor Configuration: Common Emitter (CE), Common Base (CB), Common Collector(CC), Comparison of CB, CE, CC. Characteristics in CE configuration,circuit diagram, I/P – O/P characteristics, different points of characteristics (cut off, active, saturation), Input resistance, output resistance, current gain (β). Introduction to Transistor Biasing: Need of biasing, DC-load line, operating point, Transistor as an amplifier (CE configuration only), Graphical representation, Current gain, Voltage gain, Power gain (No derivation), Single stage CE amplifier - Circuit diagram, function of each component, frequency response and bandwidth, Need of cascade amplifier. Types of coupling: R-C couple, Transformer couple, Direct couple (circuit diagram and function of each component). Application of each amplifier. Transistor as a switch – Circuit diagram, operation, application.	**12**	**15**
06	**FIELD EFFECT TRANSISTOR (UNIPOLAR TRANSISTOR)** Introduction, Types, symbols, working principles, Characteristics of FET, Circuit diagram for Drain - Transfer characteristics, Operating regions of FET. Drain resistance, mutual conductance, amplification factor and their relation, Pinch off voltage of FET. Comparison of BJT and FET. MOSFET: Types, symbol, working principle, Application of FET and MOSFET.	**08**	**13**

07	**INTEGRATED CIRCUITS** Introduction, Types: Hybrid, Monolithic. Concept of LSI, MSI,VLSI (Examples of each)	**02**	**08**
	TOTAL	**48**	**80**

Practical:

Skills to be developed:

Intellectual Skills:

1. To identify active and passive components.
2. Understand working principle of basic components.
3. Understand the basic circuits in electronics.

Motor Skills:

1. Ability to draw front panel of electronics equipments.
2. Ability of measurement of electrical quantities.
3. Ability to draw circuits & differentiate among them.
4. Ability to construct the basic circuits on Breadboard.

List of Practical(any 9):

1. Know your Electronics Laboratory.
2. Study front panel of electronic equipments
3. Identify various components used in different electronic circuits.
4. To draw diode characteristics (forward and reverse)
5. To draw Zener diode characteristics. (forward and reverse)
6. To determine D.C. output of Rectifier circuits (HWR and Bridge)
7. Study of reduction in ripple component of rectifier using Filter circuits.
8. Operation of Zener diode as regulator.
9. To determine transistor characteristics (CE mode)
10. Use of Transistor as switch.
11. Frequency response of CE amplifier.

Recommended Books:

Sr. No.	Title	Author	Publisher
01	Electronic devices & circuits	Allen Motorshed	Prentice Hall of India
02	Basic Electronics & Linear Circuits	N. N. Bhargava, D.C. Kulashreshtha, S.C. Gupta	Tata McGraw Hill
03	Electronic Principles	Malvino	Tata McGraw Hill
04	Basics of electronic devices	NIIT	Prentice Hall of India

COURSE NAME : DIPLOMA IN COMPUTER ENGINEERING

COURSE CODE : CO

SEMESTER : SECOND

SUBJECT TITLE : ELECTRICAL TECHNOLOGY

SUBJECT CODE : CO2004

TEACHING AND EXAMINATION SCHEME :

Teaching Scheme		Examination Scheme					
TH	**PR**	**PAPER HRS.**	**TH**	**INT**	**OR**	**TW**	**TOTAL**
04	02	03	80	20	---	25*	125

Pre –requisites: The student must know the following concepts:

1. Basics of Atomic Theory.
2. Concept of Active & Passive Devices.
3. Concept of voltage source & current source.
4. Series & Parallel circuits.

Objectives: The student will be able to

1. Classify different types of circuit (Series, Parallel, Network etc.).
2. Classify networks & concept of all Network Theorms.
3. Compare AC & DC & all its parameters.
4. Understand concept of resonance & types of resonance circuits.
5. Define Motor, explain principle of operation of all DC motors & also compare them on basis of their characteristics.
6. Understand concept of Universal Motor.
7. Understand working and classification of Transformers.
8. To be able to use electricity safely.

Subject Title: ELECTRICAL TECHNOLOGY	Subject Code: CO2004

Contents: Theory

Unit	Name of the Topic	Hours	Marks
01	**DC CIRCUITS** Review of introduction to electricity: current, resistance, EMF and potential difference, Ohm's law, DC sources, series and parallel circuit. Concept of open and short circuit, Kirchoff's current and voltage law, Maxwell's loop current method, Relationship between Electrical, Mechanical & Thermal systems. Node analysis, Concept of ideal and practical current and voltage sources, Source conversion. Star / Delta and Delta / star conversion (no derivation) Numerical on above.	06	08
02	**NETWORK THEOREMS** Network terminology: active, passive, linear, non- linear, bilateral, unilateral networks. Statement, explanation and application of the following network theorems (DC circuits only): - Superposition theorem - Thevenin's theorem - Norton's theorem - Maximum power transfer theorem - Concept of duality and construction of dual network. -Numericals on above theorems	05	10
03	**TWO PORT NETWORKS** Concept of two port network, Open circuit parameters, Short circuit parameters, Hybrid parameters, Equations, definitions and equivalent circuit only (No numericals).	05	08
04	**A.C. FUNDAMENTALS** Difference between AC and DC quantity, Advantages of AC over DC, Waveform of sinusoidal AC cycle. Generation of single phase AC by elementary alternator, Definitions: instantaneous value, cycle, amplitude, time period, frequency, angular frequency, R.M.S. value, Average value for sinusoidal waveform, Form factor, Peak factor (no derivation but simple numerical on it). Vector representation of sinusoidal AC quantity, review of phasor algebra, representation of AC quantity in rectangular and polar form. Phase angle, phase difference, concept of lagging and leading by waveforms. Mathematical equations and phasors. Pure resistance in AC circuit: waveforms, equations and vector diagram (no derivation), Pure inductance in AC circuit: waveforms, equations and vector diagram (no derivation), Pure capacitance in AC circuit: waveforms, equations and vector diagram (no derivation), Concept of impedance and impedance triangle.	06	14

04	Power: active, reactive and apparent, power triangle. Power factor and its significance. R-L series circuit: vector diagram, voltage and current equations. Q factor of a coil, R-C series circuit: vector diagram, voltage and current equations. R-L-C series circuit: vector diagram, voltage and current equations. Simple numerical on R-L, R-C and R-L-C series circuit. Concept of parallel A.C. circuit, Concept of admittance, conductance and susceptance (no numerical on parallel AC circuits)		
05	**POLY PHASE CIRCUITS** Advantages of 3 phase system over 1 phase system. Principle of 3-phase EMF generation and its wave form. Concept of phase sequence and balanced and unbalanced load. Relation between phase and line current, phase and line voltage in Star connected and Delta connected balanced system (no derivation). Calculation of current, power, power factor in a 3 phase balanced system (simple numericals)	**05**	**10**
06	**TRANSFORMERS** Working principle of transformer, classification, brief description of each part, its function and material used. EMF equation (no derivation),Voltage ratio, current ratio and transformation ratio. KVA rating of a transformer. Losses in a transformer, Efficiency and regulation of transformer: definition, equation (simple numerical on it). Condition for maximum efficiency (no derivation). Auto transformer: comparison with two winding transformer, applications. Polarity markings.	**05**	**12**
07	**D.C. MOTORS** Review of force on current carrying conductor, Flemings left hand rule. Construction: brief description of each part, its function and material used. Principle of operation. Significance of back emf, Types of D.C motors. Torque equation/expression only (no derivation). Schematic diagram, characteristics and applications of DC shunt, series and compound motors. Necessity of starter, types of starters. Reversal of rotation of DC motor	**06**	**10**
08	**FRACTIONAL HORSE POWER (FHP) MOTORS** Universal motor: principle of operation, reversal of rotation and applications. Stepper motor: types, principle of working and applications. Servo motor: types, principle of working and applications.	**06**	**04**
09	**ELECTRICAL SAFETY** Tariff & Power conservation, necessity of earthing, its types, safety tools, first aid measures, types of tariff, Methods of PF improvement, energy conservation & audit, fire extinguishing methods adopted in electrical engineering	**04**	**04**
	TOTAL	**48**	**80**

Practical:

Skills to be developed:

Intellectual skills:

1. Identify and select suitable electrical instruments for measurement
2. Identify and give specifications of electrical motors and transformers
3. Interpret wiring diagrams for various applications.
4. Identify safety equipments required.
5. Decide the procedure for setting experiments.

Motor skills:

1. Draw wiring diagram.
2. Make wiring connections to connect electrical equipments and instruments.
3. Measure electrical power, earthing resistance and other electrical quantities.
4. Calibrate electrical instruments.
5. Use of safety devices while working.
6. Prepare energy consumption bill with present tariff structure.

List of Practical:

1. Verification of Kirchoff's laws.

2. Verification of any one of the following network theorems

   I. Superposition theorem II. Thevenin's theorem

   III. Norton's theorem IV. Maximum power transfer theorem

   (Note – Select a different theorem for different groups of students)

3. To determine open circuit Z parameters or short circuit Y parameters of a given two port network.
4. To plot charging curve of capacitor through resistance and to determine the time constant.
5. To observe sinusoidal AC waveform of any frequency on C.R.O, and to determine its frequency, time period, peak value, rms value, peak factor and form factor.
6. To determine the resistance, impedance and inductance of a choke coil. (Use of DC source for measurement of resistance and A.C source for measurement of inductance is expected).
7. To draw vector diagram and to determine power factor of R-L-C series circuit.
8. To determine the relationship between line and phase values in three phase balanced star or delta connected load.

9. To determine transformation ratio of single phase transformer and to perform polarity test on single phase transformer.
10. To determine % efficiency and % regulation of a single phase transformer by direct loading.
11. Study of any one D.C. motor in your laboratory. Write a report based on the following points.
    - Rating (Specification)
    - Foundation arrangement
    - Supply arrangement
    - Continuity and insulation test
    - Identification of its terminals
    - Sketch different parts and state the function of each part in brief

    Observe the direction of rotation reverse it.

Note: All the above 11 experiments are compulsory.

Recommended Books:

Sr. No.	Title	Author	Publisher
01	Basic Electrical Engineering	Mittle and Mittal	Tata McGraw Hill
02	Electrical Technology Vol – I and II	B. L. Theraja	S. Chand
03	Circuit Analysis	Soni, Gupta	Dhanpat Rai and Sons

COURSE NAME : DIPLOMA IN COMPUTER ENGINEERING

COURSE CODE : CO

SEMESTER : SECOND

SUBJECT TITLE : PROGRAMMING IN 'C'

SUBJECT CODE : CO2005

TEACHING AND EXAMINATION SCHEME:

Teaching Scheme		Examination Scheme						
TH	**PR**	**PAPER HRS.**	**TH**	**INT**	**OR**	**PR**	**TW**	**TOTAL**
04	02	03	80	20	---	50**	25*	175

Pre-requisites: The student must know the following concepts:

1. Knowledge of english language.
2. Handling of computer.
3. Logical skills to solve problems.
4. Knowledge of mathematical operations.
5. Knowledge of flowchart and algorithm.

Objectives: The student will be able to

1. Describe the concepts of constants, variables, data types and operators.
2. Develop programs using input and output operations.
3. Write programs using different looping and branching statements.
4. Write programs to handle strings and pointers.
5. Write programs to handle array and structure, functions.
6. Provide base to learn advanced languages like C++, Java etc.

Subject Title: PROGRAMMING IN 'C'	Subject Code: CO2005

Contents: Theory

Unit	Name of the Topic	Hours	Marks
01	**BASICS OF C** History of C, where 'C' stands. C character set, tokens, constants, variables, keywords. C operators (arithmetic, logical, assignment, relational, increment and decrement, conditional, bit wise, special, operator precedence), C expressions, data types. Formatted input output, Unformatted input output.	08	16
02	**DECISION MAKING** Decision making and branching: if statement (if, if-else, else-if ladder, nested if-else). Switch case statement, break statement, and go to statement. Decision making and looping: while and do-while statements for loop, continue statement.	08	16
03	**ARRAYS AND STRINGS** Arrays: Declaration and initialization of one dimensional, two dimensional and character arrays, accessing array elements. Strings: Declaration and initialization of string variables, string handling functions from standard library (strlen(), strcpy(), strcat(), strcmp()) etc.	10	16
04	**FUNCTIONS** Functions: Need of functions, scope and lifetime of variables, defining functions, function call (call by value, call by reference), return values, storage classes. Category of function (no argument no return value, no argument with return value, argument with return value), recursion.	10	16
05	**STRUCTURES AND UNION** Structures: Defining structure, declaring and accessing structure members, initialization of structure, arrays of structure, nested structure Defining Union	10	10
06	**POINTERS** Understanding pointers, declaring and accessing pointers, pointers arithmetic, pointers and arrays.	02	06
	TOTAL	48	80

Practical:

Skills to be developed:

Intellectual skills:

1. Use of programming language constructs in program implementation.
2. Apply different logics to solve given problem.
3. Write program using different implementations for the same problem
4. Identify different types of errors as syntax semantic, fatal, linker & logical.
5. Debugging of programs.

Motor skills:

Proper handling of Computer System.

List of practical:

Write a 'C' program:

Any one from 1 to 3

1. To display hexadecimal,decimal,octal format of the entered numbers.
2. To display entered number with leading zeros and trailing zeros.
3. To display entered numbers with right justification and left justification.
4. * To demonstrate all possible formatting specifiers.

Any one from 5 and 6

5. To find greatest/ smallest of 3 numbers.
6. To display pass, first class, second-class, distinction according to the marks entered.

Any one from 7 and 8

7. To find even or odd numbers.
8. To display spellings of number 1-10 on entry.

Any one from 9 and 10

9. To display menu: 1. Addition 2. Subtraction 3. Multiplication 4. Division and execute it using switch case.
10. To demonstrate continue and break statements.

Any one from 11 to 13

11. To display our College name twenty times on screen.
12. To display all even numbers from 1-100.
13. To perform addition of 1-100 numbers.

Any one from 14 and 15

14. To find smallest / largest number from array elements.
15. To sort array elements in ascending / descending order.

Any one from 16 to 18

16. To enter elements for 3 X 3 matrix and display them.
17. To calculate addition / subtraction of two dimensional matrix.
18. To calculate multiplication of two dimensional matrix.
19. *To demonstrate output of standard library functions strlen(), strcpy(), strcat(),strcmp().

Any one from 20 and 21

20. To calculate area of circle using function.
21. To calculate factorial of any given number using recursion.
22. *To demonstrate call by reference, call by value
23. *To maintain and manipulate student data using structure.
24. *To perform 4 arithmetic functions on pointers.

Note: All the above 11 programs(from options) and *indicates programs are Compulsory.

Recommended Books:

Sr. No.	Title	Author	Publisher
01	Programming in C	Balguruswamy	Tata McGraw Hill
02	Let Us C	Yashwant Kanetkar	BPB
03	Complete reference C	HerbertSchildt	Tata McGraw Hill

COURSE NAME : DIPLOMA IN COMPUTER ENGINEERING

COURSE CODE : CO

SEMESTER : SECOND

SUBJECT TITLE : WEB PAGE DESIGNING

SUBJECT CODE : CO2006

TEACHING AND EXAMINATION SCHEME:

Teaching Scheme		Examination Scheme					
TH	**PR**	**PAPER HRS.**	**TH**	**INT**	**OR**	**PR**	**TOTAL**
---	04	---	---	---	---	50*	50

Pre-requisites : The student must know the following concepts:

1. Knowledge of computer handling.
2. Basic knowledge of the MS-Office.

Objectives: The student will be able to

1. Provide knowledge of WWW.
2. Provide knowledge of HTML tags.
3. Provide knowledge of designing web pages with proper format.
4. Organize information using Tables, collect information from users using forms and present information using frames.
5. Use style sheets to gain full control of formatting within webpage.
6. Include Java script within Webpages.
7. Embed multimedia to Webpages.

Subject Title: WEB PAGE DESIGNING	Subject Code: CO2006

Contents: Theory

Unit	Name of the Topic	Hours
01	**HTML** Introduction to HTML: Terminologies used in Web Design: Web, Web site, Web page, Web server, Web Browser, Search Engine. Components of HTML: Tags – closed tags and open tags, attributes, alements. Structure Tags: TYPE, HTML, HEAD, TITLE, BODY tags. Block Level Elements: Headings, Paragraphs, Breaks, Divisions, Centered Text, Block Quotes, Preformatted text, Address Text Level Elements: Bold, Italic, Teletype, Underline, Strikethrough, superscript, subscript, Horizontal Rules, Special characters, Adding comments, The Meta tag. Creating Lists, Ordered Lists, Unordered Lists, Definition Lists, Nested Lists. Linking HTML/URL: Types of URLs, Absolute URLs, Relative URLs, The Anchor Tag. Linking: To document in the same folder, to document in the different folder, to document on the web, to specific section within the document. Inserting E-mail links.	12
02	**IMAGES, COLORS AND BACKGROUNDS** Images: Image formats: gif, jpeg, png. The inline image: an IMG tag, alternate text, image alignment, buffer space – HSPACE, VSPACE, wrapping text, height and width of images. Image as a link. Image maps: Server side image maps, Client side image maps. Colors and Backgrounds: The text color, color attribute of FONT tag, text attribute of BODY tag. Background color: bgcolor attribute of BODY tag. Background images: background attribute of BODY tag. Changing link colors: link, alink, vlink attributes of BODY tag.	8

03	**TABLES, FRAMES AND FORMS** Tables: Creating basic tables : TABLE, TR, TH, TD tags. Formatting tables: border, cellspacing, cellpadding, width, align, bgcolor attributes. Adding captions: CAPTION tag. Formatting contents in the table cells: align, valign, bgcolor, height, width, nowrap attributes. Spanning rows and coloums: rowspan and colspan attributes. Frames: Introduction to frames: What is a frame? Advantages and disadvantages of using frames. Creating frames: FRAMESET tag – rows, cols attributes, FRAME tag – name, frameborder, marginheight, marginwidth, src, resize, scrolling attributes. Use of NOFRAMES tag. Frame targeting. Forms: Creating basic form: FORM tag, action and method attributes. Form fields: Single line text field, password field, multiple line text area, radio buttons, check boxes. Pull down menus: SELECT and OPTION tags. Buttons: submit,reset and generalized buttons. Formatting technique: Using table to layout form.	**12**
04	**STYLE SHEETS** Adding style to the document: Linking to style sheets, Embedding style sheets, Using inline style. Selectors: CLASS rules, ID rules. Style sheet properties: font, text, box, color and background properties.	**4**
05	**INTRODUCTION TO JAVASCRIPT** Embedding JavaScript in HTML document. Variables, Constants, Adding comments. Operators: Assignment, Arithmetic and Comparison operators. Control structures and looping: if, if..else, for, for..in, while, do..while, break and continue. Event handlers: onClick, onMouseOver, onMouseOut, onSubmit, onReset, onFocus, onBlur, onSelect.	**6**
06	**ANIMATION** Creating a gif animation using gif animator. Controlling gif animation through internal setting of gif animator. Creating banner using gif animation. Creating smooth transition between gif animation frames using twinning.	**6**
	TOTAL	**48**

Practical:

Skills to be developed:

Intellectual skills:

1. Use of programming language constructs in program implementation.
2. Apply different logics to solve given problem.
3. Write program using different implementations for the same problem.
4. Identify different types of errors as syntax semantic, fatal, linker & logical.
5. Debugging of programs.

Motor skills:

1. Proper handling of Computer System.
2. Basic understanding of GUI.

List of Pratical:

1. Design a web page and apply some block level tags and some text level tags.
2. Include Horizontal Rules and special characters in a Web page.
3. Design a web page and include different lists.
4. Include various links in a Web page.
5. Include images with different alignments and wrapped text in Web page. Also include image as a link in the Web page.
6. Design a web page and set background colour and document wide text colour.
7. Design a web page with background image, different text colour for different paragraphs, and set colours for links, active links and visited links.
8. Create HTML table, format contents in table cells and span the rows and columns.
9. Create basic frameset and format the frames within the frameset using different attributes.also use frame targeting.
10. Create a basic form using different input controls and pull down menu.
11. Use table to lay out form with different form controls and generalized buttons.
12. Create a web page and apply style sheet properties (font, text and box properties).
13. Create a web page to get watermark effect using style rules.
14. One script using controls structure and looping.
15. One script using event handlers.
16. Create GIF animation using GIF animator and incorporate in web page.
17. Create Banner Ad and incorporate in web page.

Mini Project:

Design a website using all topics mentioned in syllabus.

Recommended Books:

Sr. No.	Title	Author	Publisher
01	HTML and XHTML – The complete reference	Thomas Powell	Tata McGraw Hill, New Delhi.
02	HTML and Web Design – Tips and Techniques	Jamsa, King, Anderson	Tata McGraw Hill, New Delhi.

COURSE NAME : DIPLOMA IN COMPUTER ENGINEERING

COURSE CODE : CO

SEMESTER : SECOND

SUBJECT TITLE : PROFESSIONAL PRACTICES – I

SUBJECT CODE : CO2007

TEACHING AND EXAMINATION SCHEME:

Teaching Scheme		Examination Scheme						
TH	**TUT**	**PAPER HRS**	**TH**	**INT**	**OR**	**PR**	**TW**	**TOTAL**
--	02***	--	--	--	--	--	50*	50

Pre-requisites: The student must know the following concepts:

1. Basic English.
2. Good communication skill.

Objectives: The Student will be able to

1. Acquire information from different sources.
2. Prepare notes for given topic.
3. Make a presentation on given topic.
4. Interact with peers to share thoughts.
5. Prepare a report on industrial visit, expert lecture.

Subject Title : **PROFESSIONAL PRACTICES – I**	**Subject Code:CO2007**

Contents: Theory

Sr. No.	Activity	Hours
01	**INDUSTRIAL VISITS:** Structured industrial visits be arranged and report of the same should be submitted by the individual student, to form part of the term work. Visits to any two of the following: Real time system (Shopping Mall, Railway Reservation System etc.)	**14**
02	**GUEST LECTURES** By professional / industrial expert be organized from any three of the following areas: Pollution control. Safety Precautions and First aids / fire fighting. Yoga and meditation. Job opportunities. Topics related to Social Awareness such as –Traffic Control System, Career opportunities , Communication in Industry, Blood Donation Camp, Yoga Meditation, Aids awareness and health awareness	**10**
03	**GROUP DISCUSSION :** The students should discuss in group of six to eight students and write a brief report on the same as part of term work. The topic for group discussions may be selected by the faculty members. Some of the suggested topics are - i) Sports. ii) Cultural. iii) Discipline and House Keeping. iv) Current topic related to IT engineering field.	**08**
	TOTAL	**32**