MAHARASHTRA STATE BOARD OF TECHNICAL EDUCATION, MUMBAI

TEACHING AND EXAMINATION SCHEME FOR POST S.S.C. DIPLOMA COURSES

COURSE NAME : COMPUTER ENGINEERING GROUP

COURSE CODE : CO/CD/CM/CW/IF

DURATION OF COURSE : 6 SEMESTERS For CO/CM/CW/IF (8 SEMESTERS for CD) **WITH EFFECT FROM 2012-13**

SEMESTER : SECOND **DURATION : 16 WEEKS**

FULL TIME / PART TIME : FULL TIME **SCHEME : G**

SR. NO.	SUBJECT TITLE	Abbreviation	SUB CODE	TEACHING SCHEME			EXAMINATION SCHEME									SW (17200)
							PAPER HRS.	TH (1)		PR (4)		OR (8)		TW (9)		
				TH	TU	PR		Max	Min	Max	Min	Max	Min	Max	Min	
1	Communication Skills $	CMS	17201	02	--	02	03	100	40	--	--	25#	10	25@	10	50
2✶	Applied Science – Physics	APH	17210	02	--	02	02	50	100	40	25@	50	20	--	--	--	--	
	Applied Science – Chemistry	ACH	17211	02	--	02	02	50			25@			--	--	--	--	
3	Programming in 'C'	PIC	17212	03	--	04	03	100		40	25#		10	--	--	25@	10	
4	Basic Electronics	BEL	17213	03	--	02	03	100		40	--		--	--	--	25@	10	
5	Engineering Mathematics $	EMS	17216	03	01	--	03	100		40	--		--	--	--	--	--	
6	Development of Life Skills $	DLS	17010	01	--	02	--	--		--	--		--	25@	10	--	--	
7	Web Page Designing	WPD	17013	01	--	02	--	--		--	50@		20	--	--	--	--	
	TOTAL			**17**	**01**	**16**	**--**	**500**		**--**	**125**		**--**	**50**	**--**	**75**	**--**	**50**

Student Contact Hours Per Week: **34 Hrs.**

THEORY AND PRACTICAL PERIODS OF 60 MINUTES EACH.

Total Marks **: 800**

@- Internal Assessment, # - External Assessment, ▭ No Theory Examination, $ - Common to all branches

Abbreviations: TH-Theory, TU- Tutorial, PR-Practical, ,OR-Oral, TW- Term Work, SW- Sessional Work

- Conduct two class tests each of 25 marks for each theory subject. Sum of the total test marks of all subjects is to be converted out of 50 marks as sessional work (SW).
- Progressive evaluation is to be done by subject teacher as per the prevailing curriculum implementation and assessment norms.
- Code number for TH, PR, OR and TW are to be given as suffix 1, 4, 8, 9 respectively to the subject code.

✶ Applied Science is divided into two parts- Applied Science (Physics) and Applied Science (Chemistry).Theory examination of both parts as well as practical examination of both parts will be conducted on separate days. Sum of theory marks of both parts shall be considered for passing theory examination of Applied Science. Similarly it is also applicable to practical examination. It is mandatory to appear theory and practical examination of both parts. Remaining absent in any examination of any part will not be declared successful for that examination head.

✶ **Candidate remaining absent in examination of any one part of Applied Science subject i.e. Physics, Chemistry will be declare as Absent in Mark List and has to appear for examination. The marks of the part for which candidate was present will not be processed or carried forward.**

Course Name : All Branches of Diploma in Engineering & Technology

Course Code : AE/CE/CH/CM/CO/CR/CS/CW/DE/EE/EP/IF/EJ/EN/ET/EV/EX/IC/IE/IS/ ME/MU/PG/PT/PS/CD/CV/ED/EI/FE/IU/MH/MI/DC/TC/TX

Semester : Second

Subject Title : Communication Skills

Subject Code : 17201

Teaching and Examination Scheme:

Teaching Scheme			Examination Scheme					
TH	TU	PR	PAPER HRS	TH	PR	OR	TW	TOTAL
02	--	02	03	100	--	25#	25@	150

NOTE:

- **Two tests each of 25 marks to be conducted as per the schedule given by MSBTE.**
- **Total of tests marks for all theory subjects are to be converted out of 50 and to be entered in mark sheet under the head Sessional Work. (SW)**

Rationale:

In this age of globalization, competition is tough. Hence effective communication skills are important. Communication skills play a vital and decisive role in career development. The subject of Communication Skills introduces basic concepts of communication. It also describes the verbal, non-verbal modes and techniques of oral & written communication.

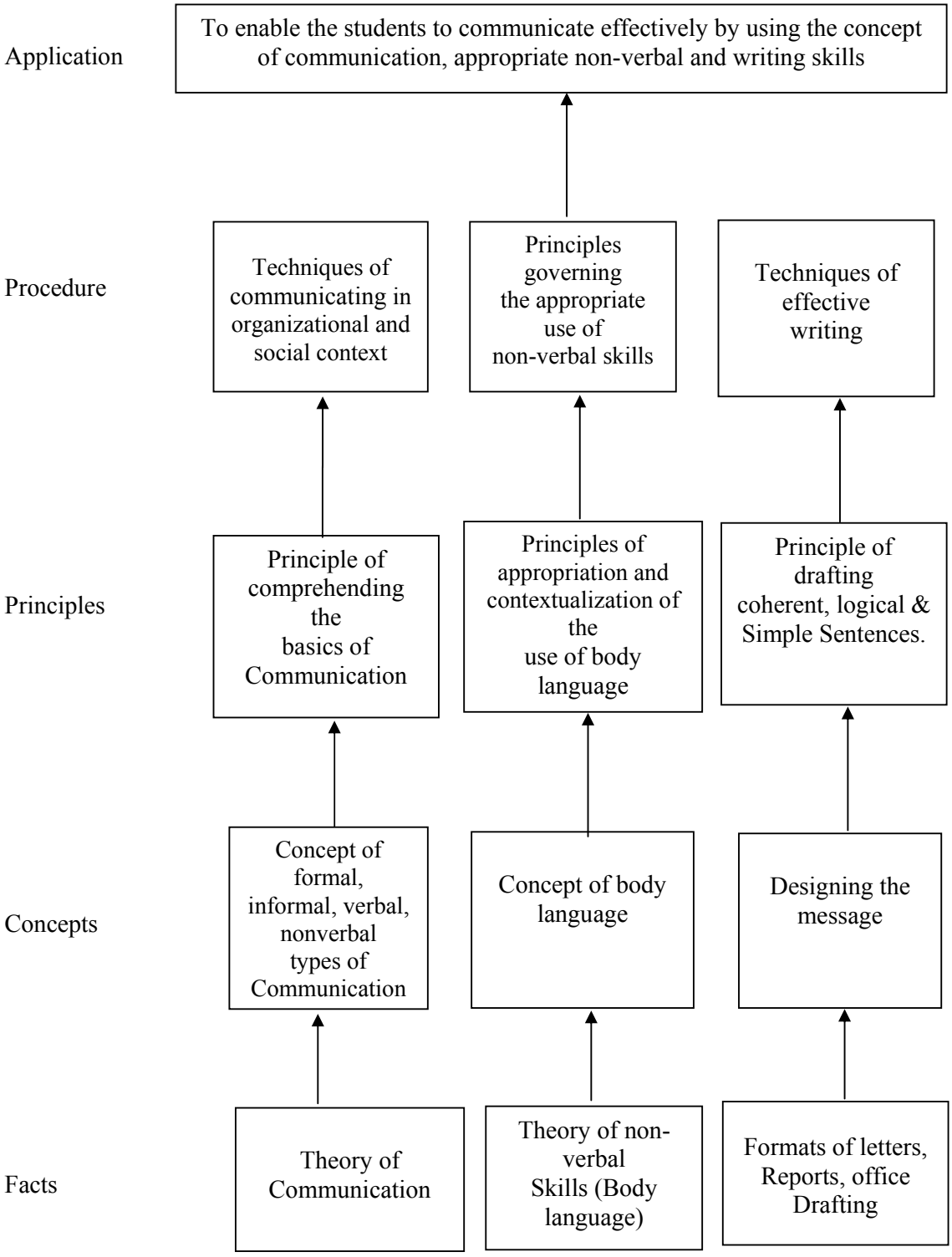
It will guide and direct to develop a good personality and improve communication skills.

General Objectives:

Students will be able to:

1. Utilize the skills necessary to be a competent communicator.
2. Select and apply the appropriate methods of communication in various situations.

Learning Structure:



Theory

Name of the Topic	Hours	Marks
Topic 01 - Introduction to Communication: **Specific Objective:** ➢ Describe the process of communication. **Contents:** • Definition of communication • Process of communication • Types of communication -- Formal, Informal, Verbal, Nonverbal, Vertical, Horizontal, Diagonal	**06**	**16**
Topic 02 - Effective communication **Specific Objective:** ➢ Identify the principles and barriers in the communication process **Contents:** ❖ Principles of communication. ❖ Barriers to communication a. **Physical Barrier**: ❖ Environmental (time, noise, distance & surroundings), ❖ Personal (deafness, stammering, ill-health, spastic, bad handwriting) b. **Mechanical** : Machine oriented c. **Psychological:** Day dreaming, prejudice, emotions, blocked mind, generation gap, phobia, status inattentiveness, perception. d. **Language** : Difference in language, technical jargons, pronunciation & allusions.	**08**	**20**
Topic 03 - Non verbal & Graphical communication: **Specific Objectives:** ➢ Effective use of body language & nonverbal codes ➢ View and interpret graphical information precisely. **Contents:** 3.1 Non- verbal codes: [08 Marks] • Proxemics, • Chronemics • Artefacts 3.2 Aspects of body language (Kinesics) [10 Marks] • Facial expression • Eye contact • Vocalics, paralanguage • Gesture • Posture • Dress & appearance	**08**	**28**

• Haptics 3.3 Graphical communication [10 Marks] • Advantages & disadvantages of graphical communication • Tabulation of data & its depiction in the form of bar graphs & pie charts.		
Topic 04 - Listening **Specific Objective:** ➢ Effective use of listening **Contents:** • Introduction to listening • Listening versus hearing • Merits of good listening • Types of listening. • Techniques of effective listening.	**02**	**08**
Topic 05 - Formal Written Communication **Specific Objectives:** ➢ Use different formats of formal written skills. **Contents:** • Office Drafting: Notice , memo & e-mail • Job application with resume. • Business correspondence: Enquiry letter, order letter ,complaint letter, adjustment letter. • Report writing: Accident report, fall in production, investigation report. • Describing objects & giving instructions	**08**	**28**
	32	**100**

Skills to be developed in practical:

Intellectual Skills:

1. Analyzing given situation.
2. Expressing thoughts in proper language.

Motor Skills:

1. Presentation Skills focusing on body language.
2. Interpersonal skills of communication

Journal will consist of following assignments:

01: Draw the diagram of communication cycle for given situation.

State the type and elements of communication involved in it.

02: Graphics:- a) Draw suitable bar-graph using the given data.
b) Draw suitable pie-chart using the given data.

03: Role play: Teacher should form the group of students based on no. of characters in the situation. Students should develop the conversation and act out their roles.

04: Collect five pictures depicting aspects of body language from different sources such as magazines, newspapers, internet etc. State the type and meaning of the pictures.

NOTE: The following assignments should be performed by using Language Software.

05 Practice conversations with the help of software.

06 Describe people/personalities with the help of software and present in front of your batch.

07 Prepare and present elocution (three minutes) on any one topic with the help of software.

08 Describe any two objects with the help of software.

Learning Resources:

Sr. No.	Author	Title	Publisher
01	MSBTE, Mumbai.	Text book of Communication Skills.	MSBTE, Mumbai.
02	MSBTE, Mumbai.	CD On Communication Skills	MSBTE
03	Joyeeta Bhattacharya	Communication Skills	Reliable Series
04	Communication Skills	Sanjay Kumar, Pushpa Lata	Oxford University Press

Web Sites for Reference:

Sr. No	Website Address
01	Website: www.mindtools.com/page8.html-99k
02	Website: www.khake.com/page66htm/-72k
03	Website: www.BM Consultant India.Com
04	Website: www.letstak.co.in
05	Website: www.inc.com/guides/growth/23032.html-45k

Course Name : Computer, Electrical and Electronics Engineering Group

Course Code : EE/EP/EJ/EN/ET/EX/EV/IC/IE/IS/MU/DE/ED/EI/IU/CO/CM/IF/CD/CW

Semester : Second

Subject Title : Applied Science (Physics)

Subject Code : 17210

Teaching and Examination Scheme:

Teaching Scheme			Examination Scheme					
TH	TU	PR	PAPER HRS	TH	PR	OR	TW	TOTAL
02	--	02	02	50	25@	--	--	75

NOTE:

- **Two tests each of 25 marks to be conducted as per the schedule given by MSBTE.**
- **Total of tests marks for all theory subjects are to be converted out of 50 and to be entered in mark sheet under the head Sessional Work. (SW)**
- **Applied Science is divided into two parts- Applied Science (Physics) and Applied Science (Chemistry). Theory examination of both parts as well as practical examination of both parts will be conducted on separate days. Sum of theory marks of both parts shall be considered for passing theory examination of Applied Science. Similarly it is also applicable to practical examination. It is mandatory to appear theory and practical examination of both parts. Remaining absent in any examination of any part will not be declared successful for that examination head.**

Rationale:

Applied Physics is the foundation of all core technology subjects. Study of science and technology goes hand in hand. Technical knowledge can be gained more effectively using concepts of Physics. Curriculum of Applied physics includes applications used in the Electronics, Electrical and Computers industry.

Study of various topics like electrical Instruments and condenser enables the students to use various electrical instruments and study their applications. Semiconductor physics makes the students aware of semiconductor devices such as P-N Junction diode, Semiconductor devices are based on transport of charge.

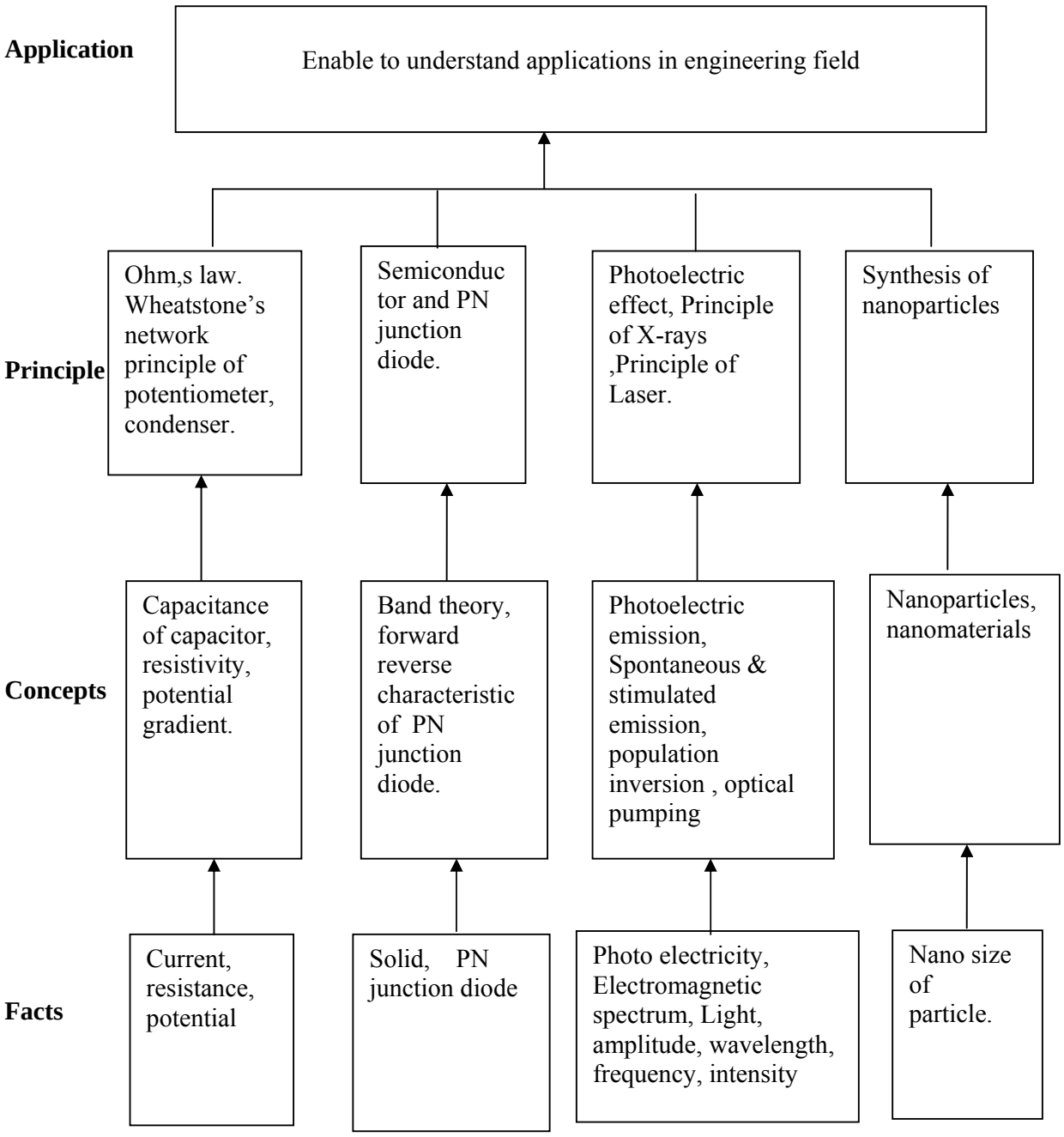
Modern concepts like LASER and nanotechnology make the students to understand various properties and applications. The concept of LASER is beneficial for the students to understand the use of LASER in Fiber optic communication. Commercially lasers are used in sensing devices such as bar code recognition, distance meter (LIDAR), Transmission of optical signal through optical fibres & avoid cross talk .Application of laser namely HOLOGRAPHY is used to store data in ROM Chips. Holograms store large amount of data in 3D form.

Nanotechnology will invoke the students to understand the nanoparticles and carbon nanotubes. Power can be transmitted at low voltage levels. Nanosized components show unique properties which are different from larger semiconductor components. These devices have increased data storage capacities of hard disks and led to small & faster microprocessors.

General Objectives: Students will be able to

1. Understand laws and principles of electrical circuits.
2. Classify solids on the basis of semiconductor band theory.
3. Understand principle of Laser and its applications in engineering field.
4. Identify superconductor and its types.
5. Understands applications of nanoparticles in engineering field.

Learning Structure:



Applied Physics (Computer/ Electrical / Electronics Engineering group) Theory:

Topics and contents	Hours	Marks
Topic1] Basic Electric circuits: **Specific objectives** ➢ Calculate basic electric parameters for designing the simple electric circuits. ➢ Use basic electronic components like resistor, capacitor in electronic circuits. ➢ Use various networks such as Whetastone's network , potentiometer ➢ Study principle and applications of condenser **1.1 Simple D.C. electric circuits: [04 Marks]** • Electric current: definition, symbol and unit, Ohm's law: statement, mathematical expression, resistivity: definition, unit, conductivity: definition, unit. **1.2 Wheatstone's network and potentiometer [06 Marks]** • Wheatstone's network, working principle, balancing condition, principle of potentiometer, potential gradient **1.3 Condensers: [06 Marks]** • Capacity of condenser-definition and its unit, definition of 1 farad capacity, principle of condenser, derivation of capacity of parallel plate condenser, statement and derivation of series and parallel combination of condensers.	**12**	**16**
Topic 2] Semiconductor Physics: **Specific objectives** ➢ Differentiate between conductor, semiconductor, insulator ➢ Verify characteristics of P-N junction diode ➢ Study applications of P-N junction diode, photodiode. • Classification of solids on the basis of band theory: forbidden energy gap, conductor, insulator, semiconductor. • Classification of semiconductors, P-N junction diode, forward characteristics of P-N junction diode, reverse characteristics of P-N junction diode, photodiode, its symbol, principle and applications.	**04**	**10**
Topic 3]: Modern physics. **Specific objectives:** ➢ State the concept of photocell ➢ State applications of X - ray ➢ State properties and applications of LASER **3.1 Photo electricity: [06 Marks]** • Photon (quantum), Plank's hypothesis, energy of photon**,** properties of photons. • Photo electric effect: circuit diagram, process of photoelectric emission, definitions:-threshold frequency, threshold wavelength, stopping potential, characteristics of photoelectric effect • Work function, Einstein's photoelectric equation, photo resistor (LDR) - symbol, principle, applications, photoelectric cell:- principle, applications. **3.2 X-rays: [06 Marks]** • Origin of X-rays, production of X-rays using Coolidge's X-ray tube,	**12**	**18**

minimum wavelength of X-ray, properties of X-rays, applications of X- rays: engineering, medical and scientific. **3.3 Laser: [06 Marks]** • Laser, properties of laser, spontaneous and stimulated emission, population inversion, optical pumping. • He-Ne Laser: Principle, construction and working, engineering applications of Laser		
Topic 4] Physics of Nanoparticles: **Specific Objectives** ➢ Study properties of nanoparticals. ➢ Study applications of nanotechnology. • History, nanoparticles, properties of nanoparticles, methods of synthesis of nanoparticles: physical method of synthesis of nanoparticles, engineering applications of nanotechnology.	**04**	**06**
Total	**32**	**50**

Practical:

Skills to be developed

1) **Intellectual Skills-**
   - Proper selection of measuring instruments
   - Verify the principles, laws, using given instruments under different conditions.
   - Read and interpret the graph.
   - Interpret the results from observations and calculations.
2) **Motor** Skills-
   - Handle/operate the instruments.
   - Measuring physical quantities accurately.
   - Observe the phenomenon and to list the observations in a tabular form.
   - Plot the graphs.

List of experiments:

Sr No	Title of Experiment	To be performed by a group of
1	Determine specific resistance by voltmeter ammeter method	4 to5 **students**
2	Verify law of resistances in series by using meter bridge.	4 to5 **students**
3	Verify principle of potentiometer	4 to5 **students**
4	Determine the characteristics of condenser using RC circuit.	4 to5 **students**
5	Verify characteristics of photoelectric cell.	4 to5 **students**
6	Verify characteristics of thermocouple.	4 to5 **students**
7	Plot forward characteristics of P-N junction diode	4 to5 **students**
8	Determine Joule's constant (J) by electrical method.	4 to5 **students**
9	Determine temperature co-efficient of resistance of metal (conductor) using platinum resistance thermometer	4 to5 **students**

Learning resources:

1. Reference Books:

Sr. No.	Title	Author	Publisher
01	Physics	Resnick and Hailday	Wisley Toppan Publishers – England
02	Engineering Physics	B.L. Theraja	S. Chand Publishers – New Delhi
03	Engineering Physics	V. Rajendran	Tata McGraw-Hill Publications
04	Conceptual Physics	P.G.Hewitt	Pearson education (Tenth edition)
05	Physics for Engineers	M.R.Srinivasan	New Age international publishers
06	Physics- Std XI, Std XII	--	HSC board/CBSE Board
07	Engineering Physics	D.K. Bhattachrya A. Bhaskaran	Oxford university press

2. Websites:

http://hyperphysics.phy-astr.gsu.edu/hbase/permot2.html
http://physics.info
http://physics.org
http://about.com
http://classroom.com
http://101science.com

3) Videos:

http://www.youtube.com Laser cutter
http://www.cmslaser.com

4) CD:

Educational Cd of NCERT
Educational cd of Pearson education India

5) PPT:

www.slideshare.nt/donpraju/laser-ppt
www.research.usf.edu/cs/rad/laser-ppt
www.studyvilla.com/laser-ppt-ruby laser
www.courses superconductor.ppt
www.khanacademy.com

Course Name : Electronics / Electrical / Computer Engineering Group

Course Code : EE/EP/EJ/EN/ET/EX/EV/IC/IE/IS/MU/DE/ED/EI/IU/CO/CM/IF/CD/CW

Semester : Second

Subject Title : Applied Science (Chemistry)

Subject Code : 17211

Teaching and Examination Scheme:

Teaching Scheme			Examination Scheme					
TH	TU	PR	PAPER HRS	TH	PR	OR	TW	TOTAL
02	--	02	02	50	25@	--	--	75

NOTE:

- **Two tests each of 25 marks to be conducted as per the schedule given by MSBTE.**
- **Total of tests marks for all theory subjects are to be converted out of 50 and to be entered in mark sheet under the head Sessional Work. (SW)**
- **Applied Science is divided into two parts- Applied Science (Physics) and Applied Science (Chemistry).Theory examination of both parts as well as practical examination of both parts will be conducted on separate days. Sum of theory marks of both parts shall be considered for passing theory examination of Applied Science. Similarly it is also applicable to practical examination. It is mandatory to appear theory and practical examination of both parts. Remaining absent in any examination of any part will not be declared successful for that examination head.**

Rationale:

The contents of this curriculum has four units which provide knowledge of cells and batteries, selection of appropriate materials for engineering applications and methods of protection by metallic and non-metallic coatings. This satisfies the need of the students to cope with the recent use of these materials and processes in their world of work.

Unit of cells and batteries covers working principle of construction, operations and their engineering applications. Now a days there are new electronic devices, gadgets coming up in the market which function on cells and batteries. Study of cells and batteries give complete knowledge of working of reversible and non-reversible cells, their classification, construction, chemical reactions during working and different chemicals used in manufacturing of cells and batteries will help the students to make proper selection in electronic equipments and computer industry.

Study of different polymers, insulators or dielectrics, adhesives and their chemical behavior will be useful in their applications in electrical appliances and electronic industries. Study of corrosion and methods of prevention will make students realize importance of care and maintenance of machines and equipments.

The contents of this subjects are designed to enhance student's reasoning capacity and capabilities in solving challenging problems at various levels of working in the electronic and computer industry.

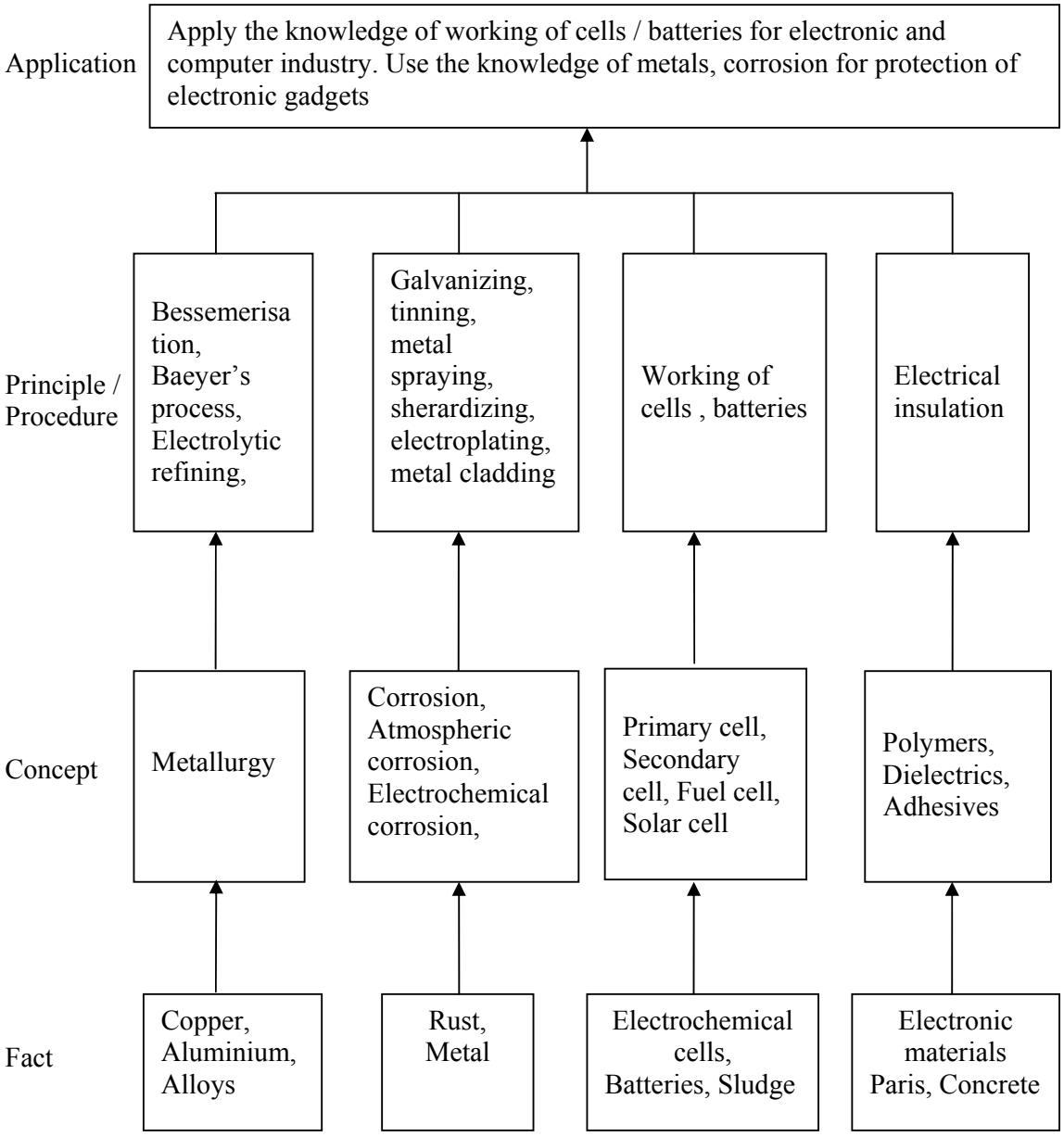
General Objectives:

The student will be able to

1. Select proper type of cell based on the requirement in electronic and computer engineering.

2. Apply knowledge of extraction, properties of copper and aluminium in engineering applications.
3. Know various insulating or dielectric materials used for electronic equipments and computers.
4. Generalize different factors which affect atmospheric as well as electrochemical Corrosion.

Learning structure:



Theory content:

Topics and Contents	Hours	Marks
Topic 1] Metallurgy: **Specific Objectives:** ➢ Describe the extraction processes of copper and aluminium. ➢ State engineering applications of copper and aluminium based on their properties. **1.1 Metallurgy of Copper: [4 Marks]** • Definition of metallurgy. • Extraction process: Ores of copper, extraction of copper from copper pyrite by concentration, roasting, smelting, bessemerisation, electrolytic refining. • Physical, chemical properties – action of air, water, acid, alkali. Applications of copper. **1.2 Metallurgy of Aluminium: [4 Marks]** • Extraction process: Ores of aluminium, extraction of aluminium from bauxite by Bayer's process, electrolytic reduction of alumina, electrolytic refining of aluminium. • Physical, chemical properties–action of air, water, acid, alkali. Applications of aluminium, anodizing of aluminium. **1.3 Solders: [4 Marks]** • Composition, properties and applications of- soft solder, tinmann's solder, brazing alloy, rose metal, plumber's solder.	**08**	**12**
Topic 2] Corrosion: **Specific Objectives:** ➢ Explain Mechanism of atmospheric corrosion and immersed corrosion. ➢ Describe different methods of protection of metal from corrosion **2.1 Corrosion: [6 Marks]** • Definition of corrosion, Types of corrosion. • Atmospheric Corrosion: Definition, mechanism of oxidation corrosion, types of oxide films and their significance, factors affecting rate of atmospheric corrosion. • Immersed Corrosion: Definition, mechanism of immersed corrosion by galvanic cell action- with evolution of hydrogen gas and absorption of oxygen gas, factors affecting immersed corrosion. **2.2 Protection of metals by: [8 Marks]** • Modification of environment, modification of properties of metal, electrochemical protection by sacrificial anodic protection and impressed current cathodic protection, use of protective coatings. • Application of metallic coatings: By galvanising, tinning, metal spraying, electroplating, metal cladding, cementation- sherardizing, chromising, colourising. • Application of non-metallic coatings: paint-definition, characteristics, constituents of paint and their functions.	**10**	**14**

Topic 3] Cells And Batteries: **Specific Objectives:** ➢ Explain the concept of electrochemical cell. ➢ Describe construction and working of different types of cells. **Electrochemical cells/ batteries:** • Basic concepts : Definition of electrolyte, conductivity of electrolytes, Ohm's law, specific conductance, equivalent conductance, cell, battery, electrolytic cell, electrochemical cell, charging, discharging. • Classification of electrochemical cells: Primary and secondary cells. • Primary cells: construction, working and applications of - Dry Cell, Daniel cell, • Secondary cells: construction, working and applications of - Lead-acid storage cell, Ni-Cd Cell • Fuel cell : Definition, construction, working, advantages, limitations and applications of Hydrogen- oxygen fuel cell.	**10**	**16**
Topic 4] Chemistry of Electronic Materials **Specific Objectives:** ➢ State role of polymers in electronic engineering. ➢ Describe applications of dielectrics and insulators in electronic devices. **4.1 Polymers: [4 Marks]** • Definitions, examples and applications of electrically conducting polymers, photoconductive polymers, electrically insulating polymers, liquid crystal polymers(LCP). **4.2 Insulators, Dielectrics and Adhesives: [4 Marks]** • Definition of dielectrics and insulator, Properties of gaseous, liquid and solid insulators , their examples. Properties and applications of- inert gases, silicone fluids, teflon , bakelite, ceramics and glass. • Definition, characteristics, advantages of adhesives, properties and applications of phenol formaldehyde resin, urea formaldehyde resin and epoxy resin.	**04**	**08**
Total	**32**	**50**

Practical:

Intellectual Skills:

1. Select proper equipments and instruments.
2. Interpret the results.
3. Plan the set up of the experiment.
4. Verify the characteristics of materials.

Motor Skills:

1. Measure the parameters accurately.
2. Calibrate the equipments as per the standards.

3. Calculate the results.
4. Measure chemicals accurately.
5. Handle apparatus and various laboratory reagents.
6. Observe the completion of reaction.

List of Experiments:

Sr. No.	Name of the experiment
1	Determine percentage of copper in the given brass alloy or copper ore.
2	Determine percentage of aluminium in aluminium alloy.
3	Determine electrode potential of various metals to study their tendency towards corrosion.
4	Find the relation between loss in weight of aluminium strip in acidic and alkaline medium and rate of corrosion.
5	Determine the strength of given hydrochloric acid solution by titrating it against sodium hydroxide solution by using pH meter.
6	Determine thinner content in oil paint.
7	Determine neutralization point of acetic acid (weak acid) and ammonium hydroxide (weak base) and to calculate normality and strength of acetic acid.
8	Measure the voltage developed due to chemical reactions by setting up a Daniel cell.
9	To prepare urea formaldehyde resin and understand the structure and properties for its applications in engineering.

Learning Resources:

1. Reference Books:

Sr. No.	Author	Name of the Book	Publisher
1	S. S. Dara	Engineering Chemistry	S. Chand Publication
2	Jain and Jain	Engineering Chemistry	Dhanpat Rai and Sons
3	B. Sivasankar	Engineering Chemistry	The McGraw-Hill Companies
4	K. B. Chandrasekhar, U. N. Das, Sujatha Mishra	Engineering Chemistry	SCITECH

2. List of websites, videos and animations :

http://en.wikipedia.org/wiki/conductive_polymer

http://en.wikipedia.org/wiki/waste-management.

http://www.footprints-science.co.uk/Chemistry.htm

.http://www.youtube.com/watch?v=8tqfDE6vqcs&feature=related

http://www.splung.com/content/sid/3/page/batteries

www.teachnet-uk.org.uk/...**Metals**/...**metals**/**Properties**%20of%20**Meta**...

http://www.substech.com/dokuwiki/doku.php?id=full_index_of_articles_on_ceramics

http://www.substech.com/dokuwiki/doku.php?id=full_index_of_articles_on_polymers

http://www.powerstream.com/BatteryFAQ.html

http://physchem.co.za/OB12-sys/batteries.htm#lead-acid (Dry Cell & Lead acid cell)

http://www.kentchemistry.com/links/Redox/flash/RedoxAgentsElectrodesBattery.swf (Battery)

http://www.kentchemistry.com/links/Redox/flash/battery.swf

http://www.kentchemistry.com/links/Redox/flash/halfcells.swf (Voltaic Cell)

http://group.chem.iastate.edu/Greenbowe/sections/projectfolder/animations/ZnCbatteryV8web.html(Dry Cell)

http://www.ausetute.com.au/battery.html (Batteries)

http://www.sherardizing.com/resources/files/9_Sherardizing_Corrosion.pdf (Sheradizing)

http://www.galvanizeit.org/aga/animation/4728?keepThis=true&TB_iframe=true&height=480&width=640 (Galvanizing)

http://www.galvanizeit.org/aga/animation/4728?keepThis=true&TB_iframe=true&height=480&width=640 (Galvanizing)

http://www.ehow.com/list_6725219_different-types-metal-cladding.html (Metal Clading)

http://www.authorstream.com/Presentation/sheelachawla-590475-insulators/ (Insulators)

http://www.sut.ac.th/engineering/metal/pdf/Nonferrous/02_Aluminium%20and%20aluminium%20alloy.pdf

http://www.youtube.com/watch?v=zU5sP64DeYA (Flow chart of extraction of Al)

http://www.youtube.com/watch?v=0Rs4vHo6_oc&feature=related (extraction of Al)

http://www.youtube.com/watch?v=XWGbUYsChOI (extraction of Cu)

fka.ump.edu.my/images/fka/.../5.2%20**Adhesives**.**ppt**

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Course Name : Computer Engineering Group

Course Code : CO/CD/CM/CW/IF

Semester : Second

Subject Title : Programming in 'C'

Subject Code : 17212

Teaching and Examination Scheme:

Teaching Scheme			Examination Scheme					
TH	TU	PR	PAPER HRS	TH	PR	OR	TW	TOTAL
03	--	04	03	100	25#	--	25@	150

NOTE:

- **Two tests each of 25 marks to be conducted as per the schedule given by MSBTE.**
- **Total of tests marks for all theory subjects are to be converted out of 50 and to be entered in mark sheet under the head Sessional Work. (SW)**

Rationale:

In today's information technology era, computer technology plays an important role. Computer applications are all pervasive in day to day life of human being. It become compulsory to all employable to have sound knowledge of how computer works and process data and information.

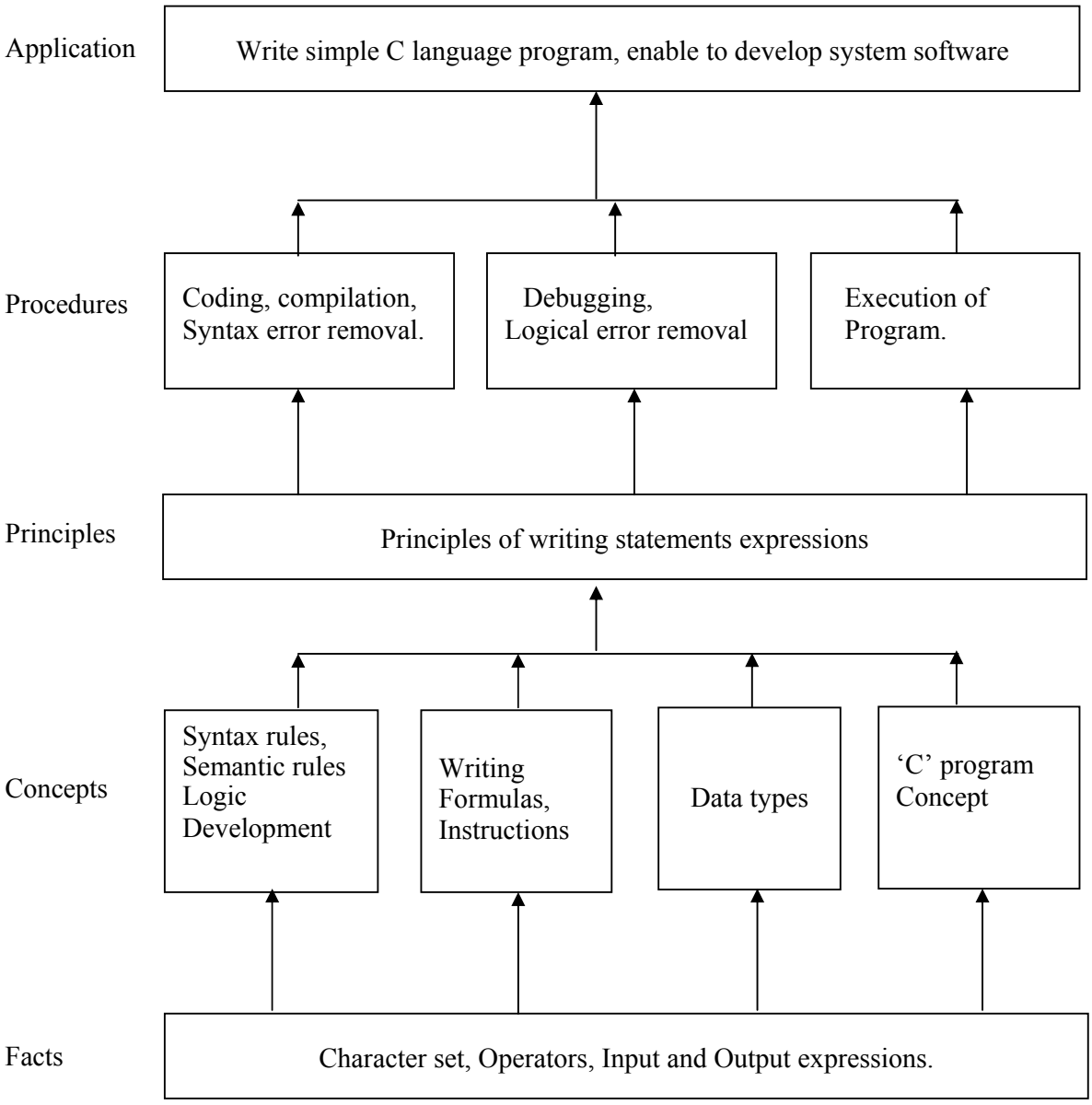
'C' is the most widely used computer language, which is being taught as a core subject. C is general-purpose structural language that is powerful, efficient and compact, which combines features of high-level language and low-level language. It is closer to Man and Machine both. Due to this inherent flexibility and tolerance it is suitable for different development environments. C is still considered as first priority programming language.

This subject covers from the basic concept of C to pointers in C. This subject will act as "programming concept developer" for students. It will also act as "Backbone" for subjects like OOPS, VB, Windows Programming, JAVA, OOMD, etc.

General Objectives: The students will be able to

- Understand the concepts of constants, variables, data types and operators.
- Write algorithm and draw flowchart for a given problem statement.
- Develop programs using input and output operations.

Learning Structure:



Topics and Contents	Hours	Marks
Topic 1: Basics of C **Specific Objectives: -** ➢ State rules for declaration of variables, constants and operators ➢ Write simple program using formatted input and formatted output. **Contents:** ➢ History of C, where C stands ➢ C character set, tokens, constants, variables, keywords , identifiers ➢ C operators- arithmetic, Logical, assignment, relational, increment and decrement, conditional, bit wise, special, operator precedence, C expressions data types ➢ Problem solving techniques : flowchart and algorithm ➢ Formatted input, formatted output instructions.	**08**	**18**
Topic 2: Decision making **Specific Objectives: -** ➢ Write a simple program using decision making, branching statement, looping statement ➢ Describe use of break and continue statement. 2.1 Decision making and branching if-statement – if, if-else, else-if ladder, nested if else, switch case statement, break statement **(14M)** 2.2 Decision making and looping - while, do, do- while statement , for loop, continue statement **(14M)**	**10**	**28**
Topic 3: Arrays and Strings **Specific Objectives: -** ➢ Give syntax of single dimensional, multidimensional array and strings. ➢ Write a program using array and string. 3.1 Arrays Declaration and initialization of one dimensional, two Dimensional and character arrays, accessing array elements. **(10M)** 3.2 Declaration and initialization of string variables, string handling functions from standard library – strlen(), strcpy(), strcat(), strcmp() **(08M)**	**10**	**18**
Topic 4: Functions and Structures **Specific Objectives: -** ➢ State the scope of local and global variable. ➢ Understand the category of function call and function type and write program. ➢ Write and execute the program using command-line argument. ➢ Write a program using structure 4.1 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, command line arguments **(16M)** 4.2 Structures: - Defining structure, declaring and accessing structure members, initialization of structure, arrays of structure. **(8M)**	**14**	**24**

Topic 5: Pointers **Specific Objectives: -** ➢ State the declaration syntax of pointer, pointer initialization ➢ Write the program using pointer arithmetic Understanding pointers, declaring pointer variable, initialization of pointer variable, accessing address of a variable, pointer expressions, Pointers arithmetic	**06**	**12**
Total	**48**	**100**

Practical:

Skills to be developed**:**

Intellectual skills:

- Use of programming language concepts in program implementation.
- Apply appropriate logics to solve given problem.
- Write program using different implementations for the same problem
- Identify different types of errors as syntax semantic, fatal, linker & logical
- Debugging of programs

Motor skills:

- Proper handling of Computer System**.**

List of Practical: At least 4 sample programs on each title

Demo Lectures with power point presentations using LCD projector can be arranged to develop programming concepts of students.

Sr. No.	Title of Experiment	Hours	Programs
01	To draw flowchart and write algorithms for sample program	02	04
02	To write a C program for formatted input and output statements	04	02
03	To write a C program for various operators in 'C'	06	02
04	To write a C program for decision control with if else statements	06	03
05	To write a C program for decision control with switch case statement	06	03
06	To write a C program for Looping statements	08	04
07	To write a C program for single dimensional integer arrays	06	02
08	To write a C program for string functions,	08	02
09	To write a C program for recursive functions	04	02
10	To write a C program using structure	06	02
11	To write a C program for pointers to print values of variables and their addresses	04	02
12	To write a C program to demonstrate the concept of pointer arithmetic.	04	02
13	To write a C program for command line arguments in 'C'.	04	02

Learning Recourses:

1. **Books**

Sr. No.	Name of Book	Author	Edition	Publication
1	Let us 'C'	Kanetkar	3rd	BPB
2	Programming in 'C'	Balgurusamy	5th	Tata Mc-Graw Hill
3	C for beginners	Madhusudan Mothe	1st	SPD

2. **Websites:**

- http://cplus.about.com/od/beginnerctutoriali/a/blctut.htm
- http://computer.howstuffworks.com/c.htm
- http://www.java2s.com/Tutorial/C/CatalogC.htm
- http://www.cprogramming.com/tutorial.html
- http://www.indiastudycenter.com/studyguides/sc/objtest/default.asp

Course Name : Computer Engineering Group

Course Code : CO/CD/CM/CW/IF

Semester : Second

Subject Title : Basic Electronics

Subject Code : 17213

Teaching and Examination Scheme:

Teaching Scheme			Examination Scheme					
TH	TU	PR	PAPER HRS	TH	PR	OR	TW	TOTAL
03	--	02	03	100	--	--	25@	125

NOTE:

- **Two tests each of 25 marks to be conducted as per the schedule given by MSBTE.**
- **Total of tests marks for all theory subjects are to be converted out of 50 and to be entered in mark sheet under the head Sessional Work. (SW)**

Rationale:

In today's world, most of the consumer appliances work with the help of electronic circuits and devices. The foundation for the working of computer or any of its peripherals is electronics.

Basic Electronics is a core subject which will help in understanding Digital Techniques, Microprocessors, Computer Architecture and Maintenance, Multimedia Technology and Communication Techniques.

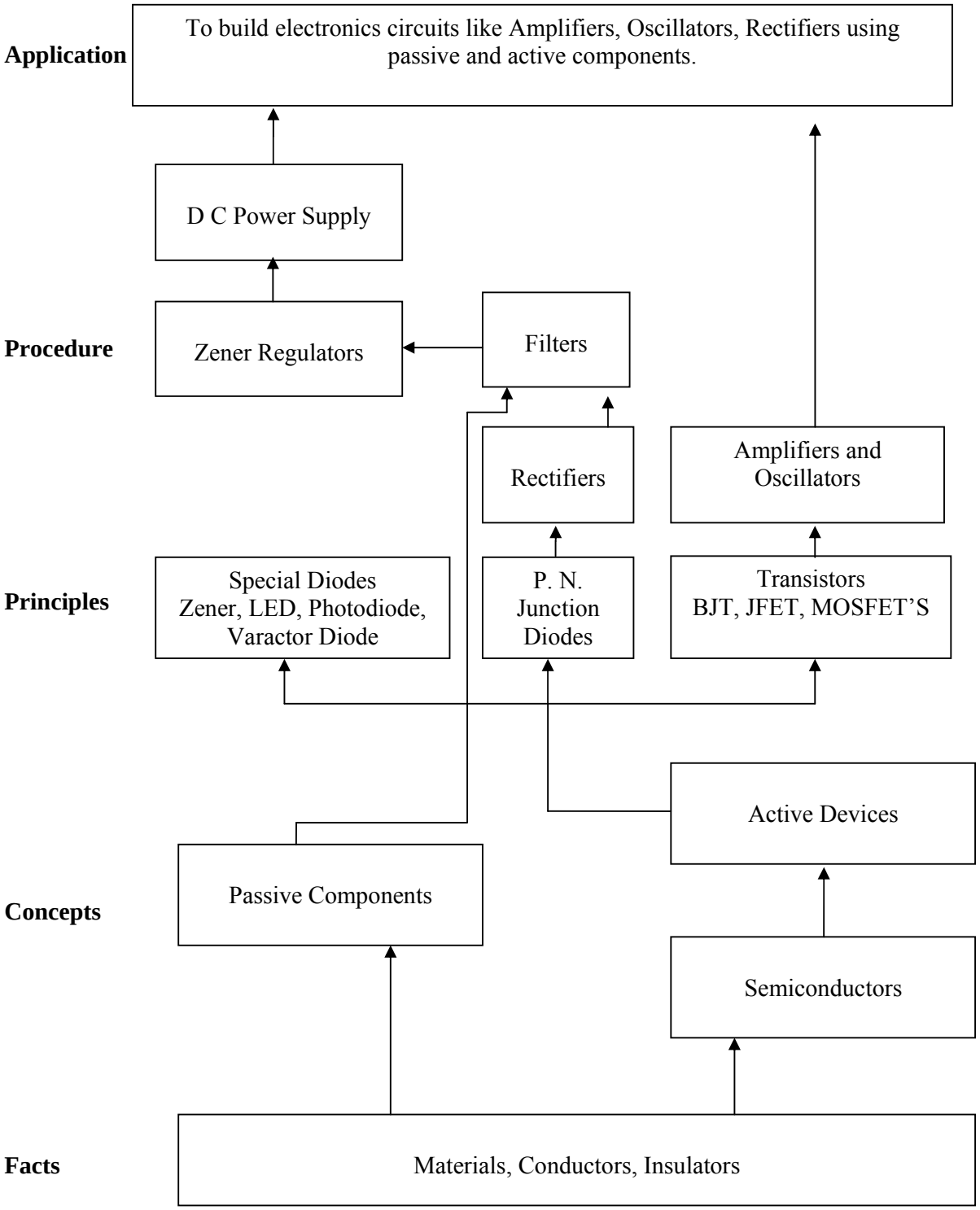
Students will develop proficiency in construction, working principle, characteristics and applications of electronic devices. On completion of learning of this subject, the student will have an insight to identify, assemble and troubleshoot simple electronic circuits**.**

General Objectives:

The student will be able to:

1. Appreciate the importance of electronics in computer systems
2. Understand the application of electronic circuits.

Learning Structure:



Theory

Topic and Contents	Hours	Marks
1. Introduction to Passive Circuit Elements **Specific Objectives:** ➢ **To know Electronics & identify Electronics component.** ➢ **To know active & passive components** ➢ **To know color coding of Resisters.** **Contents:** 1.1 Definition & Introduction to Electronics 1.2 Applications of Electronics: Industrial Applications, Defense, Medical Science, Instrumentation, Communication & Entertainment 1.3 Types of Electronics Components: Active & Passive 1.4 Types of Passive Components, Resistor, Inductors and Capacitors. Resistors – Resistance, Definition, Symbol, Unit, Specifications Classification of Resistors – Fixed, Variable. Resistor color coding Non Linear resistors : LDR, VDR, Thermistors 1.5 Inductors – Inductance , Definition, Symbol, unit, specifications Classification – Fixed and Variable 1.6 Capacitors -Capacitance, Definition, Symbol, Unit, Specifications 1.7 Classification – Fixed and Variable	06	08
2. Semiconductor Diode **Specific Objectives:** ➢ **To describe the working of semiconductor diodes,** ➢ **To know characteristics, applications of semiconductor diodes.** **Contents:** 2.1 Semiconductor Diode: P-N Junction , Concept of Hole, Majority Charge carriers, minority charge carriers, Formation of depletion layer in PN junction, Barrier Voltage, Biasing the P-N Junction – Forward Bias, Reverse bias, PN Junction Diode – Symbol, VI characteristics (Forward and Reverse characteristics), Ideal characteristics Static and Dynamic resistance of a diode, Knee voltage, Diode specifications: Forward voltage, Peak Inverse voltage, Maximum Forward current, Reverse Saturation Current. 2.2 Types of Diodes 2.2.1 Zener Diode- Symbol, Operating Principle, V-I Characteristics, Zener Breakdown Voltage. Zener as a voltage regulator. 2.2.2 Tunnel Diode – Symbol, operating Principle, V-I Characteristics, applications 2.2.3 Light Emitting Diode- Symbol, Operating Principle, V-I Characteristics, applications 2.2.4 Varactor Diode- Symbol, operating Principle, V-I Characteristics, applications 2.2.5 Schottky Diode - Symbol, operating Principle, V-I Characteristics, applications	10	24

3. Rectifiers, Filters and Regulators **Specific Objectives:** ➢ **To Know the need of regulation, Rectifier, Filter.** ➢ **To draw block diagram and to describe the function and working of each block** **Contents:** 3.1 Need for Regulated Power Supply 3.2 Basic Block Diagram of Regulated Power Supply 3.3 Rectifier- Definition , Need for rectification Types of Rectifiers- Half wave Rectifier, Full Wave Rectifier (Centre Tapped and Bridge – Circuit diagram , Operation and input- output Waveforms (No derivations), Definition of Ripple Factor, Efficiency, PIV Comparison of Rectifiers 3.4 Filters- Definition , Need for Filters Types of Filters – L, C, LC, CLC- Circuit Diagram, Principle of working, Input- Output Waveform. Comparison of Filters	08	16
4. Transistors **Specific Objectives:** ➢ **To know the differentiate between Unipolar and Bipolar Transistors.** ➢ **To describe the construction, working, Characteristics, and applications of Transistors.** **Contents:** 4.1 Introduction to Unipolar and Bipolar junction Transistors 4.2 Bipolar junction Transistors – Definition, Types (PNP, NPN) Symbol, Working Principle of NPN transistor, Types of Transistor Configuration – CE, CB, CC (Only circuit Diagrams), Characteristics of CE configuration – Input /Output Characteristics. Identification of Cut off, Active and Saturation Region, Input resistance, Output resistance , Current gain (α and β), Relation between α and β, Transistor Biasing- Need for biasing, DC load line, Q- point, Types of biasing – Voltage divider bias 4.3 Field Effect Transistor- Types (JFET and MOSFET) JFET- N Channel and P channel – Symbol, Construction, working principle. Characteristics of JFET – Drain and Transfer Characteristics FET parameters – DC Drain Resistance, AC drain Resistance, Transconductance, Amplication Factor, Input Resistance, Comparison of JFET and BJT 4.4 MOSFET: Types, Symbol, working principle. 4.5 Applications of BJT, FET and MOSFET.	12	24
5. Amplifiers and Oscillators **Specific Objectives:** ➢ **To know the need of amplifiers, their types, frequency response.** ➢ **To know the need for oscillators, multivibrators and their applications.** **Contents:**	10	24

5.1 Transistor as an amplifier- Single Stage CE amplifier, Circuit Diagram, Function of various components, Frequency and Bandwidth, Definition of Current gain, Voltage Gain and Power Gain, Need for Multi stage Amplifiers, Types of Coupling – RC coupled, Direct Coupled and Transformer Coupled , Two- stage amplifiers, Circuit Diagram and function of each component. Application of each type of multistage Amplifiers 5.2 Oscillators - Need for oscillators , Crystal Oscillator, Circuit Diagram - Operating principle and application 5.3 Transistor as a switch- circuit Diagram, Operation, application Astable Multivibrator using transistors- circuit diagram, operation, application Bistable multivibrator using Transistors- Circuit diagram, working principle and applications		
6. Integrated Circuits **Specific Objectives:** ➢ **To identify ICs** ➢ **To state advantages and limitations of ICs.** **Contents:** 6.1 Introduction to ICs- Classification – Analog and Digital ICs 6.2 Advantages and Disadvantages of ICs	02	04
Total	**48**	**100**

Practical:
Skills to be developed:

Intellectual Skills:

1. Identification & selection of components.
2. Interpretation of circuits.
3. Understand working of rectifier, filter, amplifier & oscillator circuits.

Motor Skills:

1. Ability to draw the circuits
2. Ability to measure various parameters.
3. Ability to test the components using multimeter.
4. Ability to read data sheets of components.
5. Follow standard test procedures.

List of Practicals:

1. Forward & Reverse characteristics of diode.
2. Forward & Reverse characteristics of zener diode.
3. Study of Rectifiers (Half wave & Full wave) & Filters(Capacitor & Inductor Filter)
4. Input & output characteristics of transistor in CE mode.
5. Characteristics of FET.
6. Characteristics of UJT.
7. Load & Line regulation characteristics of Zener Diode Regulator.
8. Frequency response of single stage RC coupled amplifier.
9. Determine waveforms of LC & RC oscillator circuits.

Learning Resources:
Books:

Author	Title	Edition	Year of Publications	Publisher & Address
R.S. Sedha	A textbook of Applied Electronics	1st Edition	Reprint 2009	S. Chand
Ghatak	Basic Electronics	1st Edition	2011	Pearson
Charles Patt	Make Electronics	1st Edition	2011	O REILLY
Salivahanan & N. suresh Kumar	Electronic Devices and Circuits	2nd	2011	Tata Mc Grawhill

Course Name : All Branches of Diploma in Engineering and Technology.

Course Code : AE/CE/CH/CM/CO/CR/CS/CW/DE/EE/EP/IF/EJ/EN/ET/EV/EX/IC/IE/IS/ ME/MU/PG/PT/PS/CD/CV/ED/EI/FE/IU/MH/MI

Semester : Second

Subject Title : Engineering Mathematics

Subject Code: 17216

Teaching and examination Scheme

Teaching Scheme			Examination Scheme					
TH	TU	PR	PAPER HRS	TH	PR	OR	TW	TOTAL
03	01	--	03	100	--	--	--	100

NOTE:

- **Two tests each of 25 marks to be conducted as per the schedule given by MSBTE.**
- **Total of tests marks for all theory subjects are to be converted out of 50 and to be entered in mark sheet under the head Sessional Work. (SW)**

Rationale:

This subject is an extension of Basic mathematics of first semester and a bridge to further study of applied mathematics. The knowledge of mathematics is useful in other technical areas.

Differential calculus has applications in different engineering branches. For example concepts such as bending moment, curvature, maxima and minima.

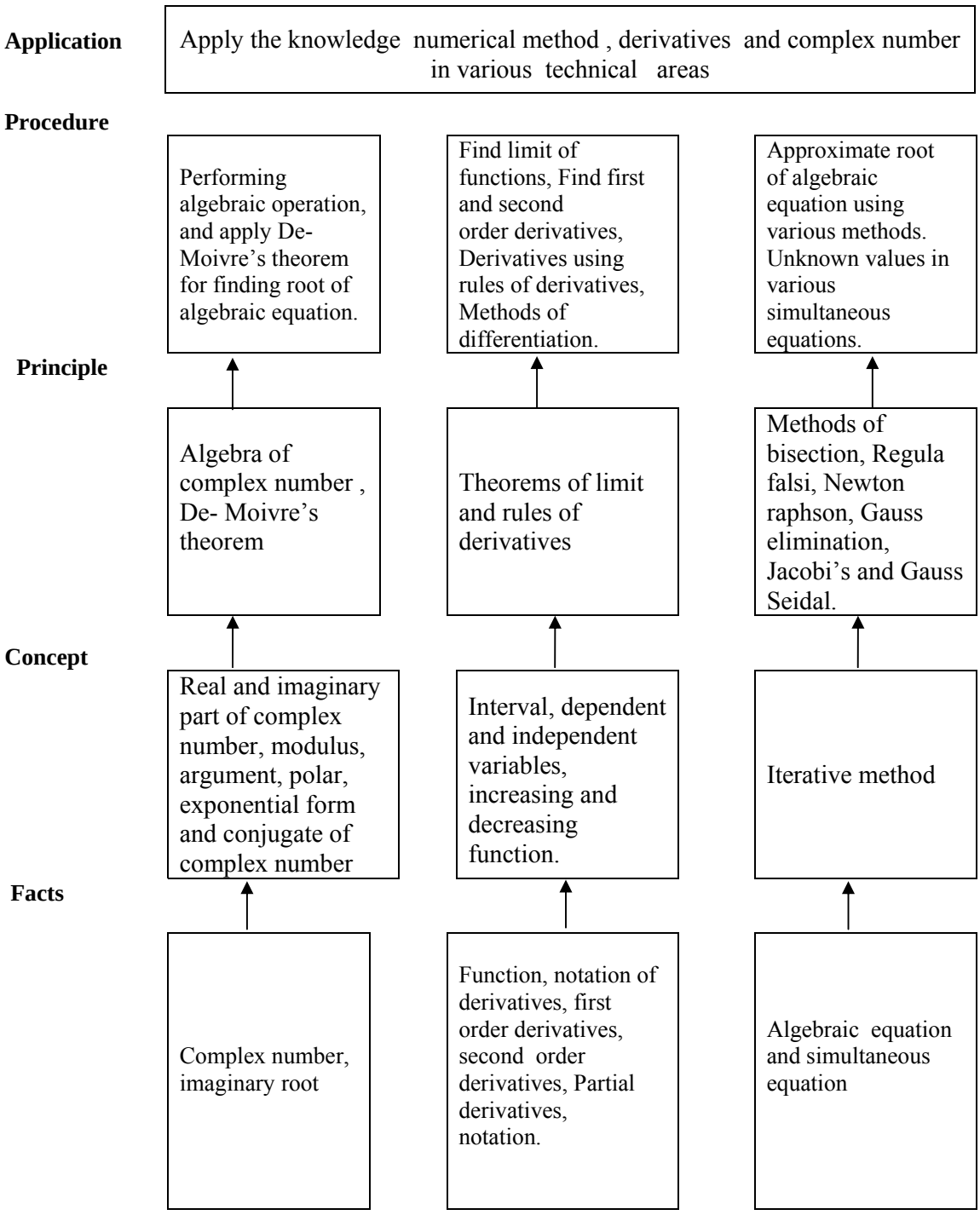
Numerical methods are used in programming as an essential part of computer engineering. For solution of problems in electrical circuits and machine performances complex number is used engineering mathematics lays the foundation to understand technical principles in various fields.

General objectives:

Student will be able to

1) Use complex numbers for representing different circuit component in complex form to determine performance of electrical circuit and machines.
2) Apply rules and methods of differential calculus to solve problems.
3) Apply various numerical methods to solve algebraic and simultaneous equations.

Learning Structure:



Content Theory:

Topic	Hours	Marks
Topic 1 - Complex number		
1.1 Complex number ---------- 14 **Specific objectives :** ➢ Find roots of algebraic equations which are not in real. • Definition of complex number, Cartesian, polar and exponential forms of complex number. • Algebra of complex number such as equality, addition, subtraction, multiplication and division. • De- Moivre's theorem with simple examples. • Euler's form of circular functions, hyperbolic functions and relation between circular and hyperbolic functions.	**08**	**14**
Topic 2 - Differential Calculus		
2.1 Function ---------- 14 **Specific objectives :** ➢ Identify the function and find the value of function. • Definition of function, range and domain of function. • Value of function at a point. • Types of functions and examples.	**08**	**58**
2.2 Limits ---------- 20 **Specific objectives :** ➢ To evaluate limit of function. • Concept and definition of limit. • Limits of algebraic, trigonometric, logarithmic and exponential functions with examples.	**08**	
2.3 Derivatives ---------- 24 **Specific objectives :** ➢ Find the derivatives by first principle. ➢ Solve problems using rules and methods of derivatives • Definition of derivatives, notation, derivatives of standard function using first principle. • Rules of differentiation such as, derivatives of sum or difference, product, and quotient with proofs. • Derivative of composite function with proof (Chain rule) • Derivatives of inverse trigonometric functions using substitution • Derivatives of inverse function. • Derivatives of implicit function. • Derivatives of parametric function. • Derivatives of one function w.r.t another function. • Logarithmic differentiation. • Second order differentiation.	**12**	
Topic 3 - Numerical Method		
3.1 Solution of algebraic equation ---------- 14 **Specific objectives :** ➢ Find the approximate root of algebraic equation. • Bisection method • Regula falsi method • Newton Rapshon method	**06**	**28**

3.2 Numerical solution of simultaneous equations ---------- 14 **Specific objectives :** ➢ Solve the system of equations in three unknowns. • Gauss elimination method • Jacobi's method • Gauss Seidal method	**06**	
Total	**48**	**100**

Tutorials:

1) Tutorial are to be used to get enough practice.
2) In each tutorial make a group of 20 student students and for each group minimum 10 problems are to be given.

List of Tutorials:

Sr No.	Topic for Tutorial
1	Complex number (Examples based on algebra of complex numbers)
2	Complex number (Examples based on De Moivre's theorem and Euler's formulae)
3	Function
4	Limit (algebraic and trigonometric functions)
5	Limit (logarithmic and exponential functions)
6	Derivatives by first principle
7	Derivatives (Examples based on formulae of standard functions and rules)
8	Derivatives (Examples based on methods of differentiation)
10	Solution of algebraic equations
11	Solution of simultaneous equations

Learning Resources:

1) Books:

Sr. No.	Title	Authors	Publication
1	Mathematics for polytechnic	S. P. Deshpande	Pune Vidyarthi Griha Prakashan, Pune
2	Calculus : Single Variable	Robert T. Smith	Tata McGraw HILL
3	Advanced Engineering mathematics	Dass H. K	S. Chand Publication New Delhi
4	Fundamentals of Mathematical Statistics	S. C. Gupta and Kapoor	S. Chand Pablication New Delhi
5	Higher Engineering Mathematics	B. S .Grewal	Khanna publication New Delhi
6	Applied Mathematics	P. N. Wartikar	Pune vidyarthi Griha Prakashan, Pune

2) Websites: www.khan academy

Course Name : All Branches of Diploma in Engineering and Technology

Course Code : AE/CE/CH/CM/CO/CR/CS/CW/DE/EE/EP/IF/EJ/EN/ET/EV/EX/IC/IE/IS/ ME/MU/PG/PT/PS/CD/CV/ED/EI/FE/IU/MH/MI/DC/TC/TX

Semester : Second

Subject Title : Development of Life Skills

Subject Code : 17010

Teaching and Examination Scheme:

Teaching Scheme			Examination Scheme					
TH	TU	PR	PAPER HRS	TH	PR	OR	TW	TOTAL
01	--	02	--	--	--	25@	--	25

Rationale:

Globalization has emphasized the need for overall development of technician to survive in modern era. Soft skills development in addition to technical knowledge; plays a key role in enhancing his/her employability.

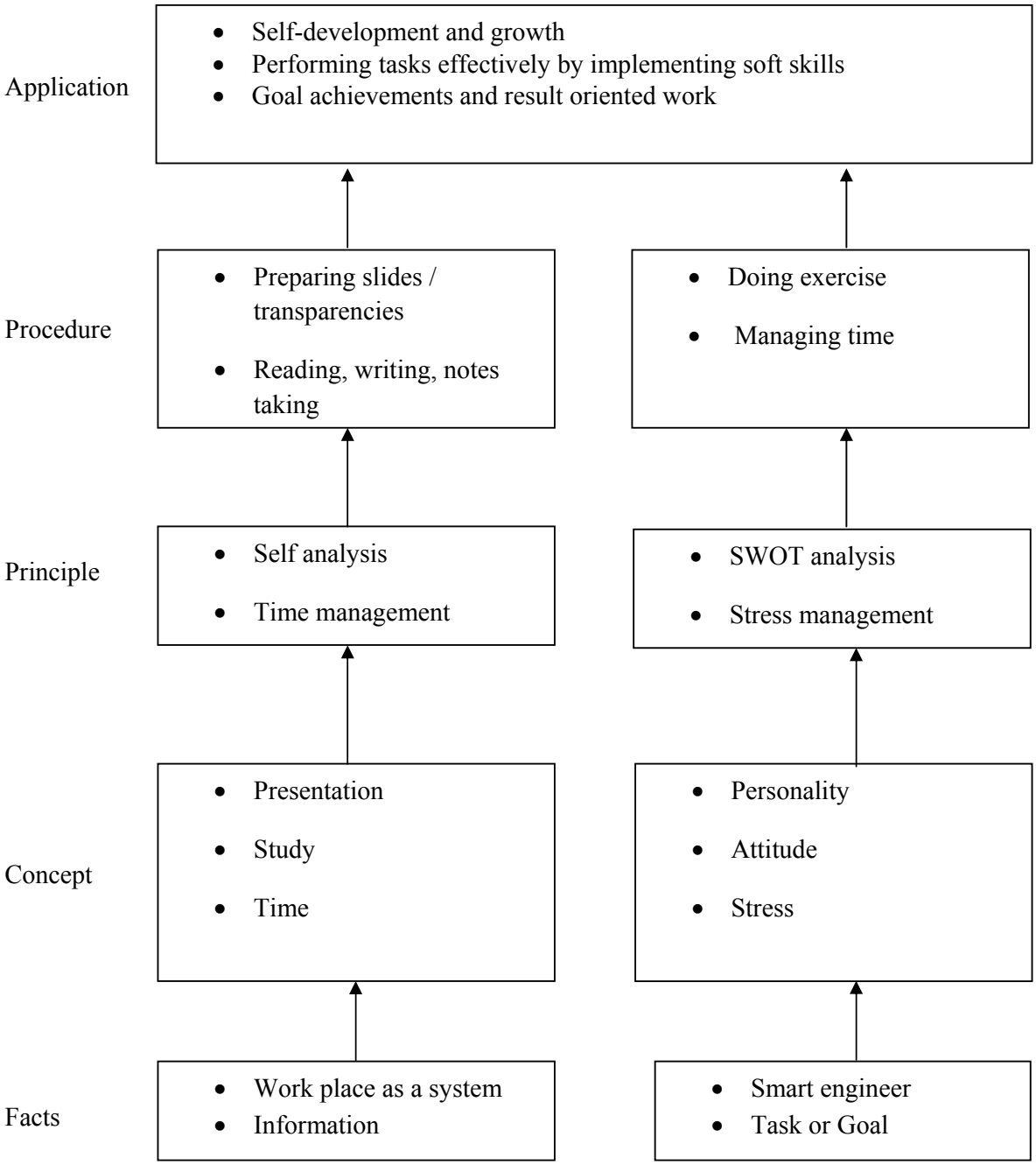
This subject aims to provide insights into various facets of developing ones personality in terms of capabilities, strengths, weakness, etc as well as to improve reading, listening and presentation skills. Also in this age fierce competition, the time and stress management techniques will immensely help the technician to live happy and purposeful life.

General Objectives:

After studying this subject, the students will be able to:

1. Understand and appreciate importance of life skills.
2. Use self-analysis and apply techniques to develop personality.
3. Use different search techniques for gathering information and working effectively.
4. Improve the presentation skills.

Learning Structure:



Theory:

Topic and Contents	Hours
TOPIC 1: SELF ANALYISIS Specific Objectives: ➢ To introduce oneself. Contents: 1.1 Need of Self Analysis 1.2 Attitude and types (positive, negative, optimistic and pessimistic) Guidelines for developing positive attitude.	02
TOPIC 2: STUDY TECHNIQUES Specific Objectives: ➢ To identify different process and strategies. ➢ To improve reading, listening and notes taking skills. Contents: 2.1 Learning strategies 2.2 Learning process 2.3 Organization of knowledge 2.4 Reading skills 2.5 Listening skills 2.6 Notes taking 2.7 Enhancing memory	03
TOPIC 3: INFORMATION SEARCH Specific Objectives: ➢ To search information as per the need. Contents: 3.1 Sources of information 3.2 Techniques of information search (library, internet, etc)	02
TOPIC 4: SELF DEVELOPMENT Specific Objectives: ➢ To set primary goals using SMART parameters. ➢ To Priorities the work effectively. ➢ To cope up with stress effectively. Contents: 4.1 Goal setting and its importance. 4.2 Characteristics of Goal setting (**SMART- S**pecific, **M**easurable, **A**ttainable, **R**ealistic, **T**ime bound) 4.3 Time Management - Importance, prioritization of work, time matrix, time savers, and time wasters. 4.4 Stress Management - Definition, types of stress, causes of stress, managing stress, and stress busters.	05
TOPIC 5: PRESENTATION TECHNIQUES Specific Objectives: ➢ To plan for presentation. ➢ To prepare contents for presentation. Contents:	02

5.1 Importance of presentation. 5.2 Components of effective presentation (Body language, voice culture , rehearsal, etc) 5.3 Preparing for presentation. 5.4 Use of audio/video aids. (audio, video, transparency's, PowerPoint presentations, etc) 5.5 Performing presentation (Seminars, paper presentations, compering, etc)	
TOPIC 6: GROUP DISCUSSION Specific Objectives ➢ To understand the concept of group discussion ➢ To know the purpose of group discussion Contents 6.1 Group discussion concept and purpose 6.2 Method of conduction	**02**
Total	**16**

Practical:
Skills to be developed:

Intellectual Skills:

Student will be able to

- Develop ability to find his capabilities.
- Select proper source of information.
- Follow the technique of time and stress management.
- Set the goal.

Motor Skills:

Student will be able to

- Follow the presentation of body language.
- Work on internet and search for information.
- Prepare slides / transparencies for presentation.

List of Practicals/activities:

1. Giving self introduction. Observe the demonstration of self introduction given by the teacher and prepare a write up on the following points and introduce yourself in front of your batch in 5 minutes
   - Name
   - Native place
   - Background of school from where he / she passed
   - Family background

- Hobbies / salient achievements / idols if any for self development
- Aims of life as an Engineer

2. Provide responses to the questions based on the moral story given in the assignment.
3. Judge your attitude by responding to the tests given in the assignment and write comments on your score.
4. Read any chapter from the subject of Engineering Physics / Engineering Chemistry and identify facts, concepts, principles, procedures, and application from that chapter
5. Participate in the panel discussion on techniques of effective learning and provide the responses to the questions.
6. Access the book on Biography of Scientists/Industrialist/Social leader/Sports Person from library. Read the book and note the name of author, publication, year of publication, and summarize the highlights of the book.
7. Prepare notes on given topic by referring to books / journals / websites.
8. Prepare 8 to 10 power point slides based on the notes prepared on the above topic. Present the contents for 10 minutes Group wise(Group will be of 4 students)

Note – Subject teacher shall guide the students in completing the assignments based on above practical.

Learning Resources:
Books:

Sr. No.	Author	Name of Book	Publication
1	Richard Hale and Peter Whitlam	Target setting and goal achievement	Kogan Page
2	Andrew Bradbury	Successful Presentation Skills	The Sunday Times – Kogan
3	Ros Jay and Antony Jay	Effective Presentation	Pearson – Prentice Hall
4	Subject Experts - MSBTE	Handbook on Development of Life Skills	MSBTE
5	Nitin Bhatnagar and Mamta Bhatnagar	Effective Communication and Soft Skills	Pearson
6	D. Sudha Rani	Business Communication and Soft Skills	Pearson
7	Barak K Mitra	Personality Development and Soft Skills	Oxford University Press
8	Dr. T. Kalayani Chakravarti and Dr. Latha Chakravarti	Soft Skills for Managers	biztantra

Course Name : Computer Engineering Group

Course Code : CO/CD/CM/CW/IF

Semester : Second

Subject Title : Web Page Designing

Subject Code : 17013

Teaching and Examination Scheme:

Teaching Scheme			Examination Scheme					
TH	TU	PR	PAPER HRS	TH	PR	OR	TW	TOTAL
01	--	02	--	--	50@	--	--	50

Rationale:

E-commerce is the buzz word in the business sector all over the world. World Wide Web is the basic technology for e-commerce and HTML is the medium for creating web pages. This subject aims at designing and developing web pages. It also serves as a prerequisite for Scripting Technology subject.

Objective:

Students will be able to

a) Design and write code using HTML and CSS coding.
b) Write code for validation at client side using JavaScript.
c) Design and create static website.

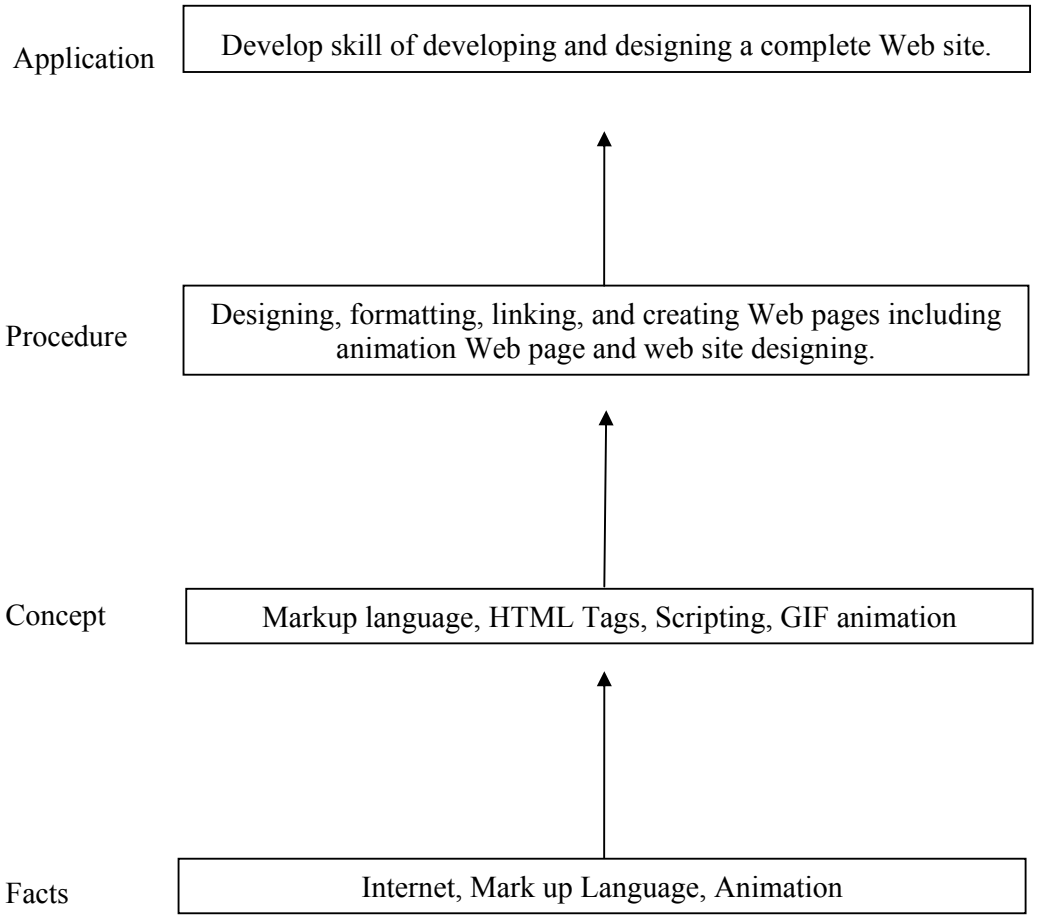
Intellectual Skills:

a) To create effective web pages using various HTML tags.
b) Understand of CSS for effective formatting web pages.
c) To Embed images and animation files.
d) To Understand concepts of client side validation.

Motor Skills:

a) Surfing different types of web sites.
b) Students will be able to design and develop static web sites using HTML tags and CSS.
c) Implement scripts

Learning Structure:



Contents:

Name of the Topic	Hours
1. **INTRODUCTION TO WWW** **Objectives:** ➢ **To understand Browsers & Web Servers** ➢ **To understand structure of HTML document** • Information about Web Browsers, Web Servers and types of sites • Introduce Web page structure and basic structure tags: !DOCTYPE, HTML, HEAD, TITLE, BODY with attributes.	01
2. **BLOCK LEVEL TAGS AND HORIZONTAL RULES** **Objectives:** ➢ **To understand basic tags used in HTML Document** • Headings, Paragraphs, Breaks, Divisions, Centered Text, Block Quotes, Preformatted text, Address, HR tag.	01
3. **TEXT LEVEL TAGS AND SPECIAL CHARACTERS** **Objectives:** ➢ **To understand tags & special character used in HTML Document** • Bold, Italic, Teletype, Underline, Strikethrough, Superscript, Subscript DIV tag	01
4. **LISTS** **Objectives:** ➢ **To understand list types** • Ordered Lists, Unordered Lists, Definition Lists, Nested Lists.	01
5. **URL AND ANCHOR TAG** **Objectives:** ➢ **To understand types of linking** • URL : Types of URLs, Absolute URLs, Relative URLs • Anchor Tag: Linking various documents for internal and external links. Marquee Tag.	01
6. **IMAGES, COLORS AND BACKGROUNDS** **Objectives:** ➢ **To understand Image formats** • IMG tag and different Image formats, colors and backgrounds.	01
7. **TABLE** **Objectives:** ➢ **To understand different Table tags & attributes** • TABLE tag with attributes. TABLE, TR, TH, TD tags. border, cell spacing, cell padding, width, align, bgcolor attributes.	01
8. **FRAMES** **Objectives:** ➢ **To understand Frame attributes** • Types of Frames with their attributes Creating frames: FRAMESET tag – rows, cols attributes,	01

FRAME tag –name, frame border, margin height, margin width, src, resize, scrolling attributes. Use of NOFRAMES tag, Frame targeting.	
9. **FORMS** **Objectives:** ➢ **To understand Forms attribute and methods.** • Creating basic form: FORM tag, action and method attributes. • Form fields: Single line text field, password field, multiple line text area, radio buttons, and check boxes. • Pull down menus: SELECT and OPTION tags. • Buttons: submit, reset and generalized buttons.	01
10. **STYLE SHEETS** **Objectives:** ➢ **To understand different Style Sheets Rule and types.** • Introduce Style Sheets with different types. • 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.	02
11. **CLIENT SIDE SCRIPTING AND JAVA SCRIPT** **Objectives:** ➢ **To understand about the client side Scripting.** • Embedding JavaScript in HTML document. Embed tag, 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,	02
12. **ANIMATION** **Objectives:** ➢ **To understand about the gif animator** • Creating a gif animation using gif animator. • Controlling gif animation through internal setting of gif animator. • Creating banner using gif animation.	01
13. **PUTTING IT ALL TOGETHER: HOSTING THE WEBSITE** **Objectives:** ➢ **To understand how to publish the websites** Publishing the site, Outsourcing web hosting, Virtual Hosting	02
TOTAL	16

List of Practical:

Sr. No.	Title of Experiment	No. of Hours
1	Write a HTML code for creating Web page using structure tags for displaying "Welcome to HTML" message.	02
2	Create a web page for displaying a paragraph using Block level, HR tags, Text level tags and special characters.	02
3	Create a web page for implementing different types of Lists.	02
4	Create a web page to link web page in the same directory, different directory, in a subdirectory of a parent directory, any other directory, and link to Email ID.	02
5	Create a web page for changing colors of links using BODY tag attributes.	02
6	Create a web page using IMG tag implementing various attributes, implementing image as a button and setting image as background.	02
7	Create a web page implementing all formatting and table tags.	02
8	Create a web page for students Registration form using FORM tags.	02
9	Create a web page for demonstration of CSS applying Internal/External/ Inline style.	02
10	Write a java script for validation of phone No./ Acc. No.	02
11	Creating a gif animation using gif animator.	02
12	Creation of Web Site: Mini project containing minimum Ten web pages on any one Following list containing images ,colors & background, frames ,tables, forms, CSS . 1. Web site for Computer Department/ Information Technology Department. 2. Web site for any Vehicle Showroom. 3. Web site for Travel and Tourism Agency. 4. Web site for any Sport.(Ex. Cricket, Tennis etc.) 5. Any other suggested topic by subject teacher.	08

Learning resources:

1. Books:

Sr. No	Author	Title of the Book	Publication
01	Thomas Powell	HTML and XHTML – The complete reference	Tata McGraw Hill, New Delhi.
02	Robbins	Learning Web Design	O'Reilly
03	Dick Oliver	SAMS Teach Yourself HTML & CSS in 24 Hours	Pearson Education Publication
04	Anne Bohem	HTML,XHTML and CSS	Murach's Publication

2. Web Sites:

1. http://www.w3schools.com/html
2. http://www.html.net/
3. http://www.2createawebsite.com
4. http://webdesign.about.com

Guidelines for Effective teaching:

- Focus should be given on latest technological WEB developments
- The subject teacher should have practical approach for teaching this subject.
- The teachers have to perform every practical before conducting it in laboratory.

List of Machines and Equipments:

Hardware Tools:

a) Computer systems

b) Printer