Course Name : Diploma in Civil Engineering
Course Code : DCE
Semester : Second
Subject Title : Mathematics-II
Subject Code : 131MA21b

Teaching & Examination Scheme

Teaching Scheme			Paper Hours	Examination Scheme											Total Marks
L	T	P		Theory		Test	Total		Pract		Oral		Termwork		
				Max	Min		Max	Min	Max	Min	Max	Min	Max	Min	
3	2	-	3	80	32	20	100	40	-	-	-	-	25	10	125

Rationale:
The study of mathematics is necessary to develop in the student, the skills essential for studying engineering subjects. The subject is an extension of basic mathematics of first semester which is a prerequisite for engineering studies.

Objective:
1. To lay a strong foundation in study of calculus which is the backbone for study in engineering.
2. To make students well versed in the prerequisites for further studies in mathematics and engineering.

Sr. No.	Contents	L	M
	Section- I		
1	Function : 1.1 Definition of function. 1.2 Types of Functions: Polynomial, constant, explicit function, implicit function, periodic function, even and odd functions, inverse function, exponential function, logarithmic function, composite function. 1.3 Simple problems based on function.	05	10
2	Limits : 2.1 Concept of limit of a function. 2.2 Theorems on limits (Without proof) 2.3 Limits of algebraic, trigonometric functions. 2.4 Standard limits	10	10
3	Derivatives : 3.1 Derivatives of standard functions by first principle. 3.2 Rules of differentiation. 3.3 Derivative of composite function. (chain rule). 3.4 Derivative of implicit function, parametric function. 3.5 Logarithmic differentiation.	11	20

	Section- II		
4	Second ordered derivative.	02	04
5	Applications of derivatives : 5.1 Equation of tangent and normal to the given curve. 5.2 Maxima and minima of function. 5.3 Rate problems.	10	16
6	Partial derivatives: Partial derivatives of first order of functions of two variables.	02	06
7	Vector Algebra : 7.1 Definition of vector, types of vector, vector addition, subtraction, multiplication by scalar. 7.2 Dot product, cross product and their properties.	08	14
	Total	**48**	**80**

Termwork:
Students shall submit at least ten assignments based on the above topics.

Reference books:

1) Basic Mathematics – II by B.M.Patel, J.M.Rawal and others - Nirali Prakashan**,** 6th edition -Jan 2010
2) Mathematics for Polytechnic - S. P. Deshpande- Pune Vidyarthi Griha Prakashan, Revised edition – Aug.2010

Course Name : Diploma in Civil Engineering
Course Code : DCE
Semester : Second
Subject Title : Chemistry
Subject Code : 131CH22

Teaching and Examination Scheme

Teaching Scheme			Paper Hours	Examination Scheme											Total Marks
L	T	P		Theory		Test	Total		P		OR		TW		
				Max	Min		Max	Min	Max	Min	Max	Min	Max	Min	
4	-	2	3	80	32	20	100	40	25@	10	-	-	25	10	150

Practical Examination will be assessed by internal examiner. External examiner not required.

Rationale:–
Chemistry is a basic science subject which is essential to all engineering courses. It gives knowledge of engineering materials, their properties, related applications & selection of materials for engineering applications. It is intended to teach students the quality of water & its treatment as per the requirement, & selection of various construction materials & their protection by metallic & organic coatings. The topics covered will provide sufficient fundamental as well as background knowledge for the particular branch.

Objectives:–
1. To understand mole concept and volumetric analysis.
2. To represent the formation of bonds in molecules.
3. Able to select appropriate materials used in construction.
4. Apply knowledge to enhance operative life span of engineering material & structure by various protective methods.

Sr.No.	Contents	L	M
	Section - I		
1	Solution: Solution, Concentrations of solution: Grams per litre, Percentage by weight or volume, Normality, Morality, Molality, Numericals, Volumetric analysis, Titrations, Acid base titration, Acidimetry, Akalimetry, Redox titration, Iodometric titrations, Complexometric titration, Precipitation titration, Numericals	10	15
2	Ionic Equilibrium: Definitions & theories of acids & bases:Classical theory, Arrhenius theory, Lowry-Bronsted theory,Lewis theory, pH, pOH, pH scale,Numericals, Basicity of an acid and acidity of a base, Numericals of Equivalent weight of acids, bases, Definition of salts & types of salts: Normal, Acidic, Basic, Mixed, Double salts, complex salts	10	10

3	Atomic Structure and Chemical Bonding Definitions of Elements, atoms, Molecules, Fundamental particles of atom, their mass, charge, location, Definition of atomic number, atomic mass number, Isotopes and Isobars, Electronic configuration based on Hunds Rule, Aufbau's principle, Pauli's exclusion principle (till Atomic no. 30), Definitions: atomic weight, equivalent weights of an element, Molecular weight, Mole in terms of number, mass, volume, Numericals, Determination of percentage composition of an element in a given molecule, Numericals, Chemical bond, octet rule, formation of various types of chemical bonds: Covalent, Ionic, Coordinate covalent bonds along with examples CH_4, H_2, O_2, N_2, NaCl, $MgCl_2$, H_3O^+, NH_4^+, BF_3-NH_3.	12	15
	Total of section I	**32**	**40**
	Section - II		
4	Alloys: Defination, purpose of alloy, Preparation methods, types: Ferrous & Non Ferrous alloy, Ferrous alloy: Steel, Alloy steel, Composition, Properties and uses, Non Ferrous alloy: Alloy of Cu, Zn, Al, Sn, Pb Composition, Properties and uses.	08	10
5	Corrosion : Introduction, Types of corrosion (dry and wet corrosion), Atmospheric corrosion, types of Atmospheric corrosion and their mechanism, oxide films, factors affecting Atmospheric corrosion, electrochemical corrosion, mechanism of electrochemical corrosion, types of electrochemical corrosion, factors affecting, electrochemical corrosion, protective measures against corrosion: coatings (galvanic and zinc, organic coating agents, Electroplating, metal cladding,).	12	15
6	Organic Chemistry and introduction to polymers: Introduction: Types of chemistry, Catenation property of Carbon element, Organic compounds, its properties and applications, Classification: by structure and functional group, Homologous series, Alkanes, alkenes and alkyenes: Definition, General formula, Names and structure of first five members, Isomerism, Properties and Uses. Polymer, Monomer, classification of polymers, Polymerisation, Addition and condensation polymerisation	12	15
Total of section II		**32**	**40**
Total of Section I & Section II		**64**	**80**

List of experiments:-

1. To study the use of indicators, for identification of acid, base and neutral solutions from the given set of solutions.
2. To standardize HCl solution using N/10 Na_2CO_3.
3. To standardize $KMnO_4$ solution using N/10 $C_2H_2O_4$ solution.

4. To determine the amount of copper sulphate in the given solution using $Na_2S_2O_3$ solution.
5. To standardize EDTA solution using N/10 $ZnSO_4$ solution.
6. To standardize $AgNO_3$ solution using NaCl solution.
7. To determine strength of the mixture of H_2SO_4 + $C_2H_2O_4$ using NaOH and $KMnO_4$ solution.
8. To estimate the amount of iron in plain carbon steel alloy.
9. To estimate the amount of copper in Brass alloy.
10. To estimate the amount of zinc in Brass alloy.

Term Work:

Students shall submit the journal for above listed experiments explaining procedure, observations, calculations, result & conclusions.

Learning Resources:

Text Books

1. Essentials of Physical chemistry B. S. Bhal & G. D. Tuli, Edition: 18^{Th} (2010) S Chand Group,New Delhi.
2. Engineering Chemistry Jain & Jain Dhanpat Rai & Co. (Pvt.) Delhi – 110006 Ltd Edition: Fifteenth (2008)

Reference books

A Text Book of Chemistry, Shashi Chawla, Educational & Technical Publishers Dhanpat Rai & Co. (Pvt.) Ltd, Edition: Third (2005)

Course Name: Diploma in Civil Engineering
Course Code : DCE
Semester : Second
Subject Title : Communication Skills- II
Subject Code : 131HM23

Teaching & Examination Scheme

Teaching Scheme			Paper Hours	Examination Scheme											Total Marks
L	T	P		Theory		Test	Total		Pract		Oral		Termwork		
				Max	Min		Max	Min	Max	Min	Max	Min	Max	Min	
3	-	2	3	80	32	20	100	40	-	-	-	-	25	10	125

Rationale:
The main objective of this subject is to enable students to develop effective communication skills. The basic concepts of oral, written and nonverbal communication will train them to become efficient and effective speakers. The study of Body Language will enable them to comprehend the effective use of gestures and posture. The students have been exposed to the Language Skills pertaining to English and principles of written communication will enhance their confidence and make them well versed in technical writing skills. In order to give students a proper exposure to good writing, a text book containing selected passages is introduced. Some inspirational stories and quotes will widen their horizons of knowledge and will also guide them to use these quotes in appropriate context.

Effective communication skills through enhanced language learning can motivate students to prosper in different spheres of life. The innovative learning strategies will enable students to improve their pronunciation, diction and become confident speakers. The listening skills will help them to comprehend the content and enhance their analytical skills. The development of speaking skills will improve their power of expression and instill assertiveness and confidence within them. Students will also become proficient in their conversational skills by learning correct usage of words and developing neutral accent. This will prepare them for larger responsibilities in their professional field where communication is a part and parcel of life. Eloquent speech, effective presentation and perfect articulation of ideas can leave a lasting impression and make one successful in personal and professional life.

Objectives:

1. To facilitate learner friendly atmosphere and train students to eliminate stage fear and fear of foreign language through active participation in activities
2. To train students to focus, absorb, comprehend and reproduce the key concepts
3. To acquire neutral accent and communicate fluently and confidently without the influence of mother tongue.
4. To understand and use the basic concepts of communication and speak and write effectively.
5. Instill self-confidence and presence of mind through impromptu activities.
6. Drafting effective letters in the proper format.
7. Develop scientific curiosity in students through topics like scientific queries and the universe and to develop in them scientific bent of mind.

Learning Structure

Application:
Enabling students to become eloquent speakers and efficient listeners through enhanced communication learning . Using appropriate oral, written and non-verbal skills.

Procedure:
1. Technique of providing responses to short and long questions
2. Principles governing the appropriate use of non verbal and oral skills
3. Technique of effective listening , speaking and comprehension .

Principles:
1. Principles of comprehending the basic of communication
2. Principles of appropriation and contextualization of the use of body language
3. Principles of drafting coherent, logical and simple sentences

Concepts:
1. Concept of spoken, written and non-verbal types of communication
2. Concept of Body Language and spoken communication through presentations
3. Formats of letters, reports and technical descriptions.

Facts:
1. Theory of communication skills
2. Theory of Body Language
3. Formats of letters: official letters pertaining to day- to -day situations and campus related situations.

Content: Theory
Section I

Name of Topic	L	M
Communication Skills-II (TEXT) compiled by Mrs. R. Thomas (4 or 5 chapters giving exposure to good English and 4 or 5 topics related to communication-process , types , body language and barriers) • Testing grasp of the matter and expression in 2 0r3 sentences .1. Definition, Communication Cycle/process .2. The elements of communication: .3. Definition of communication process .4. Stages in the process: defining the context, knowing the audience, designing the messages, encoding, selecting proper channels, transmitting, receiving, decoding and feedback .5. Introduction to effective oral communication .6. .Communication Barriers and how to overcome them, knowing the audience, structuring the messages, selecting proper channels, minimizing barriers and facilitating feedback 2.1 Success stories to motivate students and character building to inculcate work ethics and values.		15

• Descriptive answers to test the grasp of the matter and ability to express • composition		15 10
Total of Section I	48	**40**

Section II

Sr.No	Topic	Marks
1	Reporting skills • Converting a conversation into a narration • Correcting grammatical errors in the given passage • Active and passive voice	15
2	Narration and Summarization • Explaining proverbs in one's own words • Preparing a précis	10
3	Technical Writing • Description of objects • Description of process	15
	Total	40
	Total of Section I & II	**80**

Enhanced Language learning through language laboratory

Concept:

1. Concept of oral skills
2. Concept of listening skill

Sr.No	Topic	
1	Listening Skills • Introduction to listening skills, listening to recorded text, speeches of famous Indian orators and answering questions • Listening to conversations and panel discussions and encouraging students' comments. • Introduction to phonetics ; listening to the correct articulation of words • Recording and listening to one's own voice	
2	Speaking Skills • Extempore • Role play and video recording	

	• Mock interviews • JEST a minute • Technical quiz (to update knowledge in their respective discipline) • Correction of commonly mispronounced words • Conversation through role play to un*- • derstand barriers • Explaining proverbs orally in one's own words • .Power point presentation on technical topics	
3	Reading Skills • Techniques of reading – silent reading and reading aloud • Summarization –oral summary Reading Passages • Pause • Diction • Enunciation • Voice modulation • Accent • pitch	

Term work :

Testing student's receptive and reading skills.

Assignments:

1. Listening comprehension (2hours)
2. Conversation sessions-enacting from newspaper report (4hrs)
3. Barriers that hinder a particular communication situation(1 hr)
4. Developing a story based on a proverb/ spin a yarn-(2hrs)
5. Speech sessions(3 hrs)
6. Description of objects and process (4 hrs)
7. Reading sessions –(2 hrs)
8. Conversational Skills: Role Plays (6 hrs)
   Students are going to perform the role on any 6 situations, given by the teacher.
9. Dialogue writing for the given situations. (2 hrs-2 assignments
10. Newspaper Report Writing (6 hrs- 2 assignments)
    Write any two events from the newspaper as it is.
    Write any two events on the given situations by the teacher.

Skills to be developed:

Intellectual Skills:
1. Skills of Speaking in correct English
2. Compiling information and summarizing

3. Understanding the barriers in communication

Motor Skills:

1. Use of appropriate body language
2. Use of appropriate medium for communication
3. Assessing audience

Listening Skills:

1. Skills of listening and Comprehension

Learning Resources:

Text Book: Communication Skills II- Compiled by Mrs. Thomas, H&M Dept

Reference Books: Books for reference:

1.Communication Skills for Engineers, Sunita Mishra and Muralikrishna , Pearson, New Delhi,First edition,2006
2.Technical Communication, Raman Meenakshi, OUP, India, Second impression,2004
3.Cliffs TOEFL, Pyle Michael,BPB publications,First edition,1992
4.Developing Communication Skills, Mohan Krushan, Banerji Meera, Macmillan, India, 1st Edition,,2000
5. Communication Skills, Bhattacharya Joyeeta, Reliable Skills, Mumbai,1st Edition, 2003
6. Eveyones Guide to Effective Writing, JAyakaran, Apple Publishing,1st edition,2001.

Course Name : Diploma in Civil Engineering
Course Code : DCE
Semester : Second
Subject Title : Computer Applications
Subject Code : 131CE24

Teaching & Examination Scheme

Teaching Scheme			Paper Hours	Examination Scheme											Total Marks
L	T	P		Theory		Test	Total		Pract		Oral		Termwork		
				Max	Min		Max	Min	Max	Min	Max	Min	Max	Min	
-	-	2	-	-	-	-	-	-	25	10	-	-	25	10	50

Practical Examination will be assessed by internal & external examiner.

Rationale:
Computer plays a very important role in human lives. Computers are now affecting every sphere of human activity and bringing about many changes in industry, government, education, scientific research, law and even in arts like music and painting. Student will understand the use of Microsoft office.

Objectives:
The student will able to

- Understand the components of computer system.
- Use of Microsoft office.
- Format data & sheet structure using formula & functions.
- Data manipulations.
- Present any topic by using power point.

List of Practicals:

Sr.No.	Contents
1	Practice session for MS Word.
2	Basic knowledge of computer hardware & operating systems.
3	Study of MS Office standard tool bars.
4	Entering / Editing in MS Excel. • Solve any problem based on formatting the cell content, setting the alignment & setting the number of decimal places. • Preparation of marksheet & result analysis.
5	Formatting Data & sheet Structure • Solve any problem based on conditional formatting.
6	Data manipulations. • Problem based on data sorting using filter option.
7	Problem based on what if analysis using scenario option.
8	Create chart for population, rainfall, marks obtained , profit & loss etc. by using Line chart, Bar chart, Pie chart, XY Scatter chart
9	Preparation of presentation using power point (5-8 slides) based on any

	topic. Students shall also learn to insert videos, jumping slides to improve presentation.

Term Work: Students should submit the practical journal along with the printouts of assignments conducted during the practicals.

Text Books:-

1. Introduction to computing systems, by Patt and Patel, Tata McGraw- Hill Publishing Company.
2. Simple dose of computers MS Excel 2000 Beginners by Arun Soni, Publications- Navdeep.
3. Simple dose of computers MS Excel 2000 Advance Level by Arun Soni, Publications- Navdeep.

References:

MSCIT book published by Govt. of Maharashtra.

Course Name : Diploma in Civil Engineering
Course Code : DCE
Semester: : Second.
Subject Title : Engineering Mechanics
Subject Code : 131SE25

Teaching & Examination Scheme

Teaching Scheme			Paper Hours	Examination Scheme											Total Marks
L	T	P		Theory		Test	Total		Pract		Oral		Termwork		
				Max	Min		Max	Min	Max	Min	Max	Min	Max	Min	
3	-	2	3	80	32	20	100	40	-	-	-	-	25	10	125

Rationale:
This course in Engg.Mechanics is designed to cover the applications of the principles of mechanics of engineering in general and Civil engineering in particular. This deals with static forces on the structures and bodies in motion and principles of equilibrium.
The laboratory work covered under this course will provide suitable learning experiences to develop the desired abilities, skills and attitude to analyze and solve the problems encountered in Civil Engineering.

Objectives:
Students will be able to
1. Resolve the forces.
2. Find the resultant of given force system.
3. Find the reactions of beam.
4. Find the center of gravity of composite solids.
5. Find M.A, V, R efficiency and establish Law of Machine.

Sr. No.	Contents	L	M
	Section I		
A)	**Statics:**		
1	Fundamental concepts: Statics, Dynamics, Kinematics, Kinetics, Concept of force system of forces: Co-planar Concurrent, parallel, Principle of transmissibility of a force.	02	03
2	Resolution and Composition of forces: Resolution of a force, concept of a moment of a force, laws of moments and couples, Composition of co-planar, concurrent, non-concurrent, parallel forces, Resultant of a general system of co-planer forces.	07	13
3	Equilibrium: Definition, Relation between resultant & equilibrant, condition of equilibrium, Types of support-conditions, roller, hinge & fixed. Free body diagram, simply supported & over hanging beams	07	9

4	Plane Truss*:* Forces in the members of plane truss using method of sections, Center of gravity and centroid: Definition centroid of regular plane area and their combinations, Center of gravity of simple solids: Cube, Cylinder, Prism, Sphere, Cone and their combination	08	15
	Total of Section I	**24**	**40**
	Section II		
5	Graphic Statics: Representation of a force, Bow's Notation, Space Diagram, Force diagram, Funicular polygon, Condition of equilibrium, Reaction of beams subjected to uniformly distributed and concentrated loads, forces in members of a truss, centroid of a plane area.	05	7
6	Friction*:* Laws of friction, terms used: Co-efficient of friction, angle of friction, repose, equilibrium of bodies on level and inclined planes.	05	7
B)	**Kinematics:**		
1	Projectile: Review of rectilinear motion, Motion of projectile, Time of flight, Maximum height and horizontal range, relation between angle of projection and range, maximum horizontal range.	03	7
2	Angular Motion*:* Definition, Angular displacement, Angular velocity, Angular acceleration, Tangential and Radial components equations of circular motion, Relation between rectilinear and circular motion super elevation.	04	6
C)	**Kinetics**		
1	Work, Power and Energy*:* Definition of terms, form of energy, law of conservation of energy, Relation between force, mass & acceleration and its application.	03	6
2	Simple Mechanics*:* Definition of terms used: mechanical advantage, velocity ratio, efficiency, friction in the machine , law of machine, conditions of the reversibility, study of simple machines : simple screw jack, axle and wheel, differential axle and wheel, worm and worm wheel, single purchase crab.	04	7
	Totyal of section II	**24**	**40**
	Total of section I & II	**48**	**80**

Term Work:

Sr.No.		Name of Experiments	Hours
A	Note- Two half-imperial size drawing sheets in the graphic static with minimum five problems out of the following:		
	1	Resultant of concurrent forces.	
	2	Resultant of parallel forces	

	3	Resultant of non-concurrent, non-parallel forces.	
	4	Reactions of a simply supported beam.	
	5	Equilibrium of bodies.	
	6	Forces in members of truss.	
	7	Centroids of plane areas	
B	Laboratory journal containing minimum five experiments out of the following:		
	1	Law of polygon of forces	
	2	Forces in members of a roof truss.	
	3	Forces in jib crane.	
	4	Simple screw jack.	
	5	Single purchase crab.	
	6	Worm and worm wheel.	
	7	Differential axle and wheel	
		Total	**32**

Text Books:

Applied mechanics by S. B. Junnarkar, edition 17th,Revised, 2010, publisher- Charotar Publishing House Pvt. Ltd. 17th

Reference Books:

Fundamentals of Applied Mechanics by Dadhe, jamdar and Walawalkar, editiobn 2006, Publishwer - Sarita prakashan.

Course Name : Diploma in Civil Engineering
Course Code : DCE
Semester : Second
Subject Title : Basic Workshop Practice- II
Subject Code : 131ME26

Teaching & Examination Scheme

Teaching Scheme			Paper Hours	Examination Scheme											Total Marks
L	T	P		Theory		Test	Total		Pract		Oral		Termwork		
				Max	Min		Max	Min	Max	Min	Max	Min	Max	Min	
-	-	2	-	-	-	-	-	-	-	-	-	-	50	20	50

Rationale:

Mechanical / Electrical / Electronics / Civil / Textile Manufacturing / Technical Chemistry Engineering Diploma student is expected to know basic workshop practice like, Fitting, plaining, marking, chiseling, grooving, turning of wood. Various basic operations on Lathe machine like metal cutting, facing, Drilling, Tapping. The students are required to identify, operate and control various machines. The students are required to select and use various tools and equipments related to sheet metal processes.

Objectives:

The student will able to

- Know basic workshop processes.
- Read and interpret job drawing.
- Identify, select and use various marking, measuring, holding, striking and cutting tools & equipments.
- Operate, control different machines and equipments.
- Inspect the job for specified dimensions.
- Produce jobs as per specified dimensions.
- Adopt safety practices while working on various machines.

Syllabus for Practicals

Practicals

Sr.No.	Details Of Practical Contents
01	Metal Turning**:** Demonstration of Lathe machine. Demonstration of various parts of Lathe machine. One simple job involving plain turning
02	Wood Turning: Demonstration of different wood working processes, like plaining, marking, chiseling, grooving, turning of wood etc. One simple job involving turning, step turning, ball turning operation on wood.

03	Sheet Metal Shop: Demonstration of different sheet metal tools / machines. Demonstration of different sheet metal operations like sheet cutting, bending, edging, end curling, lancing, soldering and riveting. One simple job involving sheet metal operations and soldering and riveting
04	Fitting Shop: Demonstration of different fitting tools and drilling machines and power tools.. One simple fitting job involving practice of chipping, filing, drilling, tapping, cutting etc.

Text Books:

1. Mechanical Workshop Practice-K.C.John-PHI Learning Pvt Ltd. EEE 2010

Reference Books:

1. B.S. Raghuwanshi- Workshop Technology – Dhanpat Rai and sons, New Delhi, Ninth Edition 2002
2. S.K. Hajra Chaudhary- Workshop Technology Vol I & II – Media Promotors and Publisher,New Delhi. Eighth Edition 1986

Course Name : Diploma in Civil Engineering
Course Code : DCE
Semester : Second
Subject Title : Engineering Graphics- II
Subject Code : 131ME27

Teaching & Examination Scheme

Teaching Scheme			Paper Hours	Examination Scheme											Total Marks
L	T	P		Theory		Test	Total		Pract		Oral		Termwork		
				Max	Min		Max	Min	Max	Min	Max	Min	Max	Min	
2	-	3	-	-	-	-	-	-	50	20	-	-	50	20	100

Practical Examination will be assessed by internal & external examiner.

Rationale:
This subject is in continuation with the subject Engineering Graphics – I and deals with the topics of Projections & Sections of solids, Development of lateral surfaces, Reading Orthographic Projections, Isometric drawings & free hand sketches.

An introduction to computer drafting & its application in the Orthographic & Sectional Orthographic Projections & Isometric drawings will be useful in the existing and changing technological requirements of the modern world.

This course aims at building the foundation for further courses in drawing and other allied subjects.

Objectives:
The student will able to

- Understand the fundamentals of Engineering Graphics
- Read and interpret object drawings.
- To develop ability to handle and use drafting software.

Syllabus

Sr.No	Contents	Hrs
1	Projections of Solids: Projections of solids with axis inclined to one reference plane & parallel to other reference plane (Solids – prisms, pyramids, cylinder, cone & cube)	6
2	Sections of solids: Sections of solids by different auxiliary (Straight) cutting planes perpendicular to one reference plane, True shape of section. (Solids with axis perpendicular to one reference plane.) (No problems with given true shape of section)	5
3	Development of lateral surfaces of cut solids : Development of lateral surfaces of solids cut with straight cutting plane only (No problems on reverse development).	5
5	Pictorial Views:	5

	Isometric Projections and Isometric Views. (No problems with circular slots on inclined surfaces)	
6	Reading of Simple Orthographic Projections: Missing Views including Sectional Views of simple machine parts .(Full Section in one view)	7
7	Machine Elements: Free hand sketching. I.S. Convention for internal & external threads, single start threads, hexagonal & square-nuts , bolts & washers; Set screws, conventions for drilled through & blind holes, tapped holes.	2
8	Introduction to Computer Aided Drafting : Introduction to different commands in the CAD software.	2

Practicals

The students should workout the problems on the following topics on quarter imperial drawing sheets during the practicals.

1. Two sheets on Projections of solids.
2. Two sheets on problems Sections of solids.
3. Two sheet on problems on development of surfaces.
4. Two Sheets on Isometric Projections.
5. Three sheets on problems from reading orthographic projections.
6. One sheet on free hand sketches.

Term Work:

Students shall submit drawing sheets drawn during the practicals as a term work as mentioned above.

Text Book:

1. Engineering Drawing : N.D.Bhat, Charotar Publishers,49th Edition 2010
2. Engineering Graphics & Engineering – S.T.Ghan, M.V.Rawalani- Nirali Publications-seventh Edition -2009

Reference Books:

1. Engineering Drawing- D.A.Jolhe - TATA McGraw Hill- 2008
2. Engineering Graphics- K.R.Mohan – Dhanpatrai publishing co.-First edition-2009
3. Engineering Drawing- S. Chand Co., R. K. Dhawan Reprint 2010
4. Engineering Drawing -Amar Pathak Dreamtech Press, 2010

Course Name : Diploma in Civil Engineering
Course Code : -
Semester : sem I to VI
Subject Title : Student Centered Activity / Test

Teaching & Examination Scheme

Teaching Scheme			Paper Hours	Examination Scheme											Total Marks
L	T	P		Theory		Test	Total		PR		OR		TW		
				Max	Min		Max	Min	Max	Min	Max	Min	Max	Min	
-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-

Rationale:–

A fresh student needs lot of help about institute and its working. During the subsequent years there is a need of general development of personality, in addition to educational progress. During later part of course, a student needs to prepare for future career. Due to globalization and competition in the industrial and service sectors; the selection for the job is based on campus interviews or competitive tests. While selecting candidates a normal practice adopted is to see general confidence, ability to communicate and attitude, in addition to basic technological concepts.

The purpose of introducing 'Student Centered Activity (SCA)' is to provide opportunity to students to undergo activities which will enable them to develop confidence on various fronts as stated above.
Following activities can be planned in the form of lectures, notes, presentations and group visits etc:

1. Introduction to institute and related activities –
    a. Introduction to institute infrastructure and facilities
    b. General conduct and discipline
    c. Anti-ragging act
    d. functions of student counseling cell
    e. medical help center
    f. library procedures
    g. NCC activity
    h. Gymkhana activities
    i. cultural events
    j. scholarship issues
    k. hostel and mess functions
    l. railway concession
    m. academic calendar
    n. registration process
    o. examination rules

p. malpractices in exams and punishments

2. Expert lectures on
    a. Introduction to E-learning sources
    b. Use of E-library
    c. Use of internet for career and personality development
    d. Preparations for seminars on technical topics
    e. Group discussion techniques
    f. General mannerisms and personality development
    g. Interview techniques
    h. Career guidance and related counseling.
    i. Health, yoga and mediation

These activities are planned in different semester so that there will be increased participation of students in learning process.
SCA will exist till the start of Monday Tests ie till first 8 weeks.

Objectives:

The Student will be able to:

1. Acquire information from different sources
2. Prepare notes for given topic
3. Present given topic in a seminar
4. Interact with peers to share thoughts
5. Take the advantages of E-learning sources

Procedure:

Students will be taken in groups to various places with instructors. Will be attending expert lectures as and when planned. View slide shows, get information through handout and notes, refer notices etc