Table of Content

1	List of First Semester Course		
Sr. No.	Course	Course Code	Page No.
1.1	Generic Skill	HU11 103	01
1.2	Engineering Chemistry	SC11 109	04
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Course Code	Course Title	C/O	Credits				Examination Scheme					
			TH	TU	PR	Total	TH	TS	PR	OR	TW	Total
HU 11 103	Generic Skills	C	--	02	--	02	--	--	--	50		50

Rationale:

The subject is included under the category of humanities. The role of subject is to make the student aware of its importance in the society, to inform him/her about technical education system, the institute (library, various dept, curriculums etc.), to help him/her with essential etiquettes & manners.

OBJECTIVES: - The Students will be able to,

1. Understand his/her importance in various areas of life.
2. Understand the technical education system property.
3. Know about importance of curriculum, MIS, IS , etc.
4. Carry him/ her in proper manner so that he/she will not inconvenient to others at any place.
5. Develop & adopt self study techniques.
6. Follow rules & regulation strictly & become a low abiding citizen.

Unit No	Contents	Hrs	Marks
1	**Social Aspects:** 1.1 Role of an individual in the family, in the institute, in the society. 1.2 Social responsibilities & rights of an individual. 1.3 Role of a diploma holder in the present day scenario. 1.4 Guest lecture on any of the above topic.	04	08
2	**Technical education in Maharashtra:** 2.1 Definition of technical education its types, structure (ITI, Diploma & Degree). 2.2 Governance in Technical Education.(BTE, Autonomous & private- structure , fees, faculty, exam, evaluation etc.) 2.3 Institutes of Indian standards (BIS & IS) ISO 14000 & ISO 18000 2.4 Guest lecture on Indian standards.	04	08
3	**Awareness of curriculum:** 3.1 Definition of curriculum, steps observed in its construction, 3.2 Objectives, rationale, core subjects, other subjects and its credit. 3.3 Office and its work procedure, sections and their importance, 3.4 Guest lecture on functions of curriculum development .	04	06

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4	**MIS(Management Information System):** 4.1 Definition , its working , applications & relevance in the present day scenario. 4.2 MIS applied to exam section, student registration , subject registration, exam registration. 4.3 Department related applications : Work related to office , library & others.	04	08
5	**Library:** 5.1 Introduction to library, its functioning, its role in an institute, role of a librarian. 5.2 facilities available in library, search facility for books on internet, digital library. 5.3 Two expert lectures by librarian on how to utilize the library to the fullest extent regarding the penalties and Book Bank system.	04	06
6	**Health Awareness and Social mannerism:** 6.1 Introduction to health and hygiene (WHO-definition) Definition, its importance. 6.2 Mannerisms to be followed –in the Institute, in the laboratory , in the corridors, in the classrooms-overall discipline, regarding use of mobiles. 6.3 Seminar culture- definition, etiquettes to be observed while attending seminar , presentation, party in a hotel etc. 6.4 Two guest lectures on seminar culture by hospitality/ event management experts.	04	06
7	**Self Study Techniques :** 7.1 Importance of listening, reading & writing skills for a student. 7.2 Safety precautions related to various laboratories e.g. workshop, electrical & chemistry laboratory. 7.3 Rules to be followed in library-keeping silence In the reading room, use of accession cards, returning the books in time.	04	04

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8	**Banking Practice:** 8.1 Banking procedures, types of accounts, deposits-types, e-banking. 8.2 Guest lecture bank personale.	04	04

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Programme Code : CE/ME/LG/LT											
Course Code : SC 11 109				Course Title : Engineering Chemistry							
Prerequisite : Nil				C / O : Compulsory							
Credits				Duration of Written Examination		Examination Scheme					
TH	TU	PR	TOTAL	TH	TS	TH	TS	PR	OR	TW	TOTAL
4	-	2	6	3 hrs	2 Tests of 1 Hour each	80	20	-	-	50	150
(*) indicates assessment by Internal and External examiners											

Rationale:

Chemistry is a basic science subject which is essential to all engineering courses. It gives knowledge of engineering materials, their properties, related applications and selection of material for engineering applications.

Due to technological progress there are hazardous effect on environment and human life. The core knowledge of environment effects will bring awareness in students about the precautions and preventions to be taken to reduce the ill effect.

This subject will generate curiosity of carrying out further development in engineering fields.

Objectives:

The students will be able to

1. Draw the orbital configuration of different element.
2. Represent the formation of molecules schematically.
3. Describe the mechanism of electrolysis.
4. Indentify the properties of metal and alloy related to engineering applications.
5. Identify the properties of non-metallic materials related to engineering application.'
6. Compare the effects of pollutants or environments and to suggest preventive measure and safety.

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Section I (40 Marks)

Contents:	Hrs.	Marks
1. Atomic Structure 1.1. Defination of atom, fundamental particles of atom their charge, mass, symbol and location atomic number and atomic mass number and their relation. 1.2. Isotopes and Isobars their examples and distinction. 1.3. Bohr's theory, definition of orbit and orbitals their distinction, shape of the orbitals. 1.4. Filling up of the orbital by Aufbau's principle, Hund's rule electronic configuration upto atomic number 30 1.5. Defination and types of valency (Electro-valency and Covalency) octet and duplet rule. 1.6. Formation of electrovalent and covalent compound eg- Nacl, $Cacl_2$, Mgo, $Alcl_3$, Co_2, H_2O, Cl_2, NH_3, C_2H_4, N_2, C_2H_2. 1.7. Distinction between electrovalent & covalent compound.	6	8
2 Electrochemistry 2.1. Defination of Ion distinction between atom an Ion. Defination of Ionization and electrolytic dissociation. 2.2. Arrhenius theory of Ionization, degree of ionization, factor affecting degree of ionization. 2.3. Mechanism of electrolysis, primary and secondary reaction at cathode and Anode. Electrolysis of C_4SO_4 solution by using Cu electrode and platinum electrode. Electrolysis of Nacl solution and fused Nacl by using carbon electrode. 2.4. Faraday's first and second law of electrolysis and numericals. Applications of electrolysis - such as electroplating and electro refining. 2.5. Primary and Secondary cell and their examples. Construction and working of Dry cell and Lead Acid storage cell.	8	8
3 Water 3.1. Defination of Hard water and Soft water. Impurities present in natural water (suspended, dissolved, colloidal biological) Types of Hardness of water. (Temporary & Permanent hardness) unit of hardness. 3.2. Bad effect of Hard water for domestic (cooking, drinking, bathing, washing) purposes. 3.3. Bad effect of Hard water (Textile, dying, sugar, bakeries) in Industrial purposes. 3.4. Scale of sludge formation in boiler their disadvantages and removal. 3.5. Treatment of water by permufit process and Ion exchange process. Treatment of water for drinking purpose. **3.6.** PH- Scale definition of PH, Numbericals on PH applications of PH such as corrosion of bridges, Electroplating, sewage treatment, city water supply.	8	10

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4. Metals and Alloys 4.1. Occurrence of Metals, Defination of metallurgy, mineral, ore, gangue, flux, slag. 4.2. Mechanical properties of metal such as Hardness, Toughness, Ductility, Malleability, Strength, Tensile strength, Merchantability, Weld ability, Forging Soldering Castability. 4.3. Stages of extraction of metal form its ore in details i.e. crushing, concentration, reduction, refining. 4.4. Physical properties and applications of some commonly used metal such as Fe, Cu, Al, Cr, Ni, Sn, Pb, Zn, Co, Ag, W Alloys :- 4.5. Defination of alloy purposes making alloy, preparation of alloys by Fusion method, classification of alloy such as ferrous alloy and Non-Ferrous alloy. 4.6. Ferrous Alloy – Composition, preparation and uses of - heat resisting steel, High speed steel, shock resisting steel, magnetic steel, stainless steel, tool steel. 4.7 Non-Ferrous Alloy – Composition, preparation and uses of – copper – Brass, Bronze, Aluminium Duralumin Solder – Wood's metal, Bearing alloy – Babbitt metal.	5	8
5. Corrosion 5.1. Defination of corrosion, Types of corrosion, Atmospheric corrosion and Electrochemical (Immersed) corrosion. 5.2. Mechanism of Atmospheric corrosion, and electrochemical corrosion. 5.3. Protection of metal by metallic coating by Hot dipping (Galvanizing and tinning) sherardizing, spraying, electroplating. 5.4. Organic coating (painting and varnishing)	5	6

Section II		
Contents:	**Hrs.**	**Marks**
6. Lubricant 6.1. Defination of Lubricant and Lubrication, Types of Lubricant (solid, semisolid, liquid), Function of Lubricants. 6.2. Types of Lubrication – Fluid Film, Boundary and extreme pressure lubrication. 6.3. Characteristics of lubricants – Physical characteristics– Viscosity, viscosity index, oiliness volatility, flash point, fire point, cloud point and pour point. Chemical characteristics– Acidity/Neutralization number, Emulsification, Saponification value. 6.4. Selection of lubricant for machine working under different condition.	6	6

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7. Fuel 7.1. Defination of fuel, classification of fuel and their examples essential characteristics of fuel, characteristic properties of good fuel. 7.2. Solid fuel – types of coal, analysis of coal – proximate and ultimate analysis. 7.3. Liquid fuel – Petroleum, Refining of Crude Petroleum, products obtained by fractional distillation their properties and application. 7.4. Conventional and Non-conventional Fuel (gaseous fuel) LPG, CNG, Biogas. 7.5. Comparison between solid, liquid and gaseous fuel.	**6**	**8**
8. Paint and Varnishes 8.1. Defination of paint characteristics of good point. 8.2. Constituents of pains and their functions. 8.3. Methods of application failure of paint film Remedy to prevent failure. 8.4. Defination of varnish, characteristics of good varnish types of varnish – oil and spirit varnish. 8.5. Distinction between paint and varnishes.	**6**	**8**
9. Non-Metallic Engineering Materials **Plastics :** 9.1. Importance of Plastic ; Defination of polymer and monomer, polymerization. 9.2. Formation of plastic by – Addition and condensation method. Types of plastics – Thermosetting and Termosoftening plastic their distinction. 9.3. Compounding of plastic by – Fillers, plasticizer, Accelerator, pigment and their function. 9.4. Properties and Engineering application of plastics. **Elastomers (Rubber) :-** 9.5. Natural Rubber drawback of natural rubber, valcansation of rubber. 9.6. Synthetic Rubber – properties and applications of synthetic rubber. 9.7. Ceramics : Defination, properties and engg. application, types – structural ceramics facing material special ceramics. 9.8. Refractories :- Defination properties and uses of fire clay, bricks, silica bricks.	**10**	**12**
10. Environmental Effect :- (Awareness Level) 10.1. Defination of pollution and pollutant causes of pollution. 10.2. Types of pollution – Air and Water Pollution their causes, effect and control method. 10.3. Soil, Sound Pollution their causes effect and control method. 10.4. Deforestation, Ozone depletion, green house effect, preventive environmental management (PEM) activity.	**4**	**6**

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List of Practical:

1. Tour of chemistry laboratory &safety measures
2. Qualitative Analysis of salts of metals such as , , Cu, Sn, Fe, Al, Cr, Ni, Zn, Mn, Ca, Ba, Mg, NH_4, K, Na (Any three)
3. To find the electrochemical equivalent of copper by electrolysis and to verify Faraday's 1st law of Electrolysis.
4. Determine conductivity of different electrolytes by using conductometer
5. Determination of pH value of unknown solutions .
6. To estimate the chloride content, I n given water sample.
7. To determine the degree of hardness in terms of ppm of $CaCO_3$, given water sample by EDTA method.
8. To estimate percentage of iron in iron alloy by redox titration method.
9. Preparation of chart of composition, properties, uses of metal and alloys.
10. To find Acid value / neutralization number of given lubricant.
11. To determine the viscosity of oil lubricant using by using Ostwald's viscometer.
12. Estimate of moisture content in coal by proximate Analysis.
13. Formation of phenol formaldehyde resin.

References:

Sr.No.	Author	Title	Publication
1	V. P. Mehta	Polytechnic Chemistry	Jain Brothers, New Delhi
2	P. C. Jain & Monica Jain	Applied Chemistry	Dhanpat Rai and Sons, New Delhi
3	M. M. Uppal	Engineering Chemistry	Khanna Publisher, Delhi
4	J. C. Kurlacose J. Jairam	Chemistry in Engineering and Technology Volume I and II	Tata Mc Graw Hill.

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Programme Code: CE/ME									
Course Code: SC11116		Course Title: **Basic Mathematics**							
Compulsory / Optional: **Compulsory**									
Teaching Scheme and Credits				Examination Scheme					
TH	TU	PR	Total	TH	TS	PR	OR	TW	Total
3	1	--	4	80*	20	--	--	--	100

Rationale: The subject intends to teach students basic facts, concepts, principle & procedure of mathematic as a tool to analyze Engineering problems & as such lays down foundation for understanding the engineering & core technology subjects

Objectives:

The Students will be able to ,

1. Understand basic facts of mathematics about the field analysis of any Engineering Problem.
2. Know the standard ways in which the problem can be approached.
3. Apply basic concepts to engineering problem.

Section I		
Contents:	**Hours**	**Marks**
1. **ALGEBRA** :	32	40
Logarithms: 1.1 Definition 1.2 Laws of logarithms . 1.3 Simple examples based on laws 2.1 Change of base rule.unknowns.	04	04
2. **Determinants:** 2.2 Definition 2.3 Expansion of determent of order 2&3 2.4 Crammer's rule to solve simultaneous equations in 2 unknowns. 2.5 Crammer's rule to solve simultaneous equations in 3 unknowns.	04	04
3. **Matrices:** 3.1 Definition of a matrix of order m x n 3.2 Types of matrices 3.3 Algebra of matrices - equality, addition, subtraction ,multiplication & scalar multiplication. 3.4 Transpose of matrix. 3.5 Minor , co-factor of an element.	13	16

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4.1 Adjoint & inverse of a matrix by adjoint method.		
4. Binomial Theorem: **4.1** Definition of factorial notation **4.2** Meaning of ${}^{n}c_{r}$ & ${}^{n}p_{r}$. **4.3** Statement of Binomial Theorem. **4.4** General term formula. **4.5** To find term independent of x , coefficient of x^r & middle term/terms. **4.6** Approximation formula.	06	08
5. Partial Fractions: **5.1** Definition of proper, improper & partial fractions . **5.2** To find out the partial fractions when: i) Denominator contains linear non repeated roots. ii) Denominator contains linear but repeated roots. iii) Denominator contains quadratic but non repeated roots.	05	08

Section II		
Contents:	**Hours**	**Marks**
6. Trigonometry • Trigonometric ratios of any angle, fundamental identities. • Trigonometric ratios of allied angles, compound angles, multiple angles (2A, 3A), Sub multiple angles. • Sum and Product formulae • Inverse Circular function (definition and simple problems).	11	12
7. Co-ordinate Geometry:	13	16
7.1 Points & Distances : • Distance formula, section formula ,mid-point formula & centroid of a triangle. • Area of a triangle & Collinearity.	03	04
7.2 Straight line: • Slope & intercept of straight line. • Equation of straight line in slope point form, slope intercept form, two point form, two intercept form, normal form, general equation of straight line. • Angle between 2 straight lines condition of parallel &perpendicular lines.	05	08

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• Intersection of two lines. • Length of perpendicular from a point on the line & perpendicular distance between parallel lines. 7.3 Circle: • Equation of circle in standard form, Centre – radius form, Diameter form, two intercept form. General equation of a circle & its centre radius.	05	04
8. Mensuration 8.1 Area of plane figures , all types of triangles , quadrilateral , circles , parabola , ellipse and hyperbola and their parts. 8.2 Volume Volume of solid regular prism, cylinder , pyramid , cone sphere and frustum of a cone & pyramid. 8.3 Trapezoid rule & Simpson's $1/3^{rd}$ Rule for area and volume.	05	08
9. Graph Trignometric graph , Straight line graph by using determination	03	04

Sr.No.	Author	Title	Publication
1	S.P. Deshpande	Mathematics for polytechnic students	Pune Vidyarthi Graha Prakashan
2	H. K. Das	Mathematics for polytechnic students (Volume I)	S.Chand Prakashan
3	G. V. Kumbhojkar	Companian to basic maths	Phadke Prakashan
4	N. Raghvendra Bhatt Late Shri R Mohan Singh	Applied Maths	Tata McGraw Hill Publication

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PROGRAMME TITLE: CE/ME

Course Code	Course Title	C/O	Pre-requisite	Credits				Examination Scheme					
				TH	TU	PR	Total	TH	TS	PR	OR	TW	Total
HU 11 118	Communication Skills	C	---	2	-	-	2	80	20	-	-	-	100

1. Theory paper duration 3 hrs.
2. Theory paper assessment is internal and external.
3. The assessment of practical, oral, term, work is internal except mark (*).
4. (*) The assessment is internal and external.
5. C = Compulsory, O = Optional

Rationale:

English is the global language today. The basic knowledge of this language is essential for every one. It is necessary for the Engineering and Technology related students to cope up with the challenges of the modern world with the help of English. The major part of their work experience needs certain knowledge of this language. At worksite, on the shop floor or fields, they might be required to take the instructions from superiors and to pass them on to subordinates. To write letters, circulars, memos, notice and reports will be an important task for them. While designing the curriculum of communication skills and communication practice the probable needs of the future technicians are kept in view.

Objectives:

The students will be able: to understand the communication technique, to use the basic concepts and principles of communication theory effectively in an organized set up, to give positive feedback in various situations by using appropriate body language and avoid the barriers for effective communication and to write the various types of letters, reports and office drafting in the proper format.

Section I		
Contents:	**Hours**	**Marks**
1 Introduction to communication 1.1. Communication Cycle 1.2. Communication Event 1.3. Concept of communication process 1.4. Stages of communication cycle 1.5. Selection of proper channel for communication.	04	12

2 Types of Communication Definition,advantages&limitations of- 2.1 Formal Communication 2.2 Informal Communication 2.3 Verbal Communication 2.4 Non-verbal Communication 2.5 Vertical Communication 2.6 Diagonal Communication 2.7 Horizontal Communication 2.8 Grapevine Communication	04	12
3 Non-verbal/Graphical Communication : 3.1 Non Verbal Communication 3.2 Aspects of body language 3.3 Interpreting Visuals	08	16
Section II		
Contents:	**Hours**	**Marks**
4 Communication for technical students: 4.1 Levels of communication- Extra- personal, intrapersonal, interpersonal, organizational, mass communication. 4.2 Importance of technical communication. 4.3 Technology based communication tools- Mobile, telephone and voice mail, computer, laptop, notebook, internet.	06	16
5 Formal Written Skills : 5.1 Office Drafting 5.2 Job Application with Resume 5.3 Business Correspondence 5.4 Report Writing	10	24

Reference Books:

Sr.No.	Author	Title	Publication
1	Meenakshi Raman Sangita Sharma	Communication Skills	Oxford Higher Education
2	Homai Pradhan D.S.Bhende Vijaya Thakur	Business Communication	Himalaya Publishing House
3	Curriculum Development Centre	A Course in Technical English	Somaiya Publications Pvt.Ltd.
4	MSBTE	A Textbook in communication Skills.	MSBTE

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Computer Fundamentals

Programme Code : **CO**											
Course Code : **CO 11 201**				Course Title : **Computer Fundamentals**							
Compulsory/Optional : **Compulsory**											
Credits				Duration of Written Examination		Examination Scheme					
TH	TU	PR	TOTAL	TH	TS	TH	TS	PR	OR	TW	TOTAL
-	-	4	4	-	-	-	-	-	-	50	50
(*) indicates assessment by Internal and External examiners											

Rationale

A course designed to assure a basic level of computer applications literacy to include word processing, spreadsheet, presentation software, database, LAN, e-mail, and Internet utilization. It also covers application software like MS-Office, which helps for documentation, calculation, presentation purpose etc.

Objectives:
The students will be able to

- Identify the major hardware components of a computer system,& their relationship.
- Demonstrate an understanding of computer systems.
- Identify specific operating systems and their purposes, features, and how they relate to application software.
- Demonstrate an understanding of Computer Networks.
- Prepare Excel Sheet, Charts
- Prepare power point presentation
- Create Database in Ms-Access.
- Create their own email account for sending and receiving mail

Topic No	Contents	Hours	Marks
	SECTION-I	32	NA
1.0	**Introduction to Computer System** 1.1 Evolution of Computer & Generation of Computer 1.2 Functional block diagram of computer 1.3 Characteristics of computer 1.4 Terminology :- Hardware, Software, firmware 1.5 Peripherals : Keyboard, monitor, printer, Scanner 1.6 Functional elements of computer 1.7 Memory :RAM, ROM, Magnetic Disk, Floppy Disk, CD, DVD, Pen drive ,USB Drive , Portable Disk 1.8 Introduction to operating system 1.8.1 What is operating system? 1.8.2 Need of OS? Types of operating system 1.8.3 Functions of operating system Booting Concepts, booting procedure, command, interpreter	06	
2.0	**Working with Windows 2007/08 or Latest** 2.1Introduction of windows O/S , start menu icons, start button, Task bar, starting and Running multiple programs, moving, minimizing, maximizing and resizing windows and window shut down. 2.2 Using my computer: To view CD, DVD Read/Write contents, using pen drive, changing the icon arrangement, copying a file, to drag and drop, deleting a file. 2.3 Windows explorer: Copy, move, delete files creating folder, copy and paste. 2.4 Find Utility: To search file by name. 2.5 Control panel: Purpose, changing date and time, choosing background, getting on line help, and installation of software. 2.6 Accessories: Paint, Calculator, Notepad 2.7 Introduction to Antivirus	08	
3.0	3 **Introduction to Computer Network & Internet** 3.1 Introduction to Networking 3.2 Components of Networking 3.3 Types of Network 3.4 Application of Computer Network Using a browser, Using search engine, Creating an Email account, Sending / Receiving mail with Attachments 3.5 Social Networking	08	

15

4.0	**Microsoft word** 4.1 Introduction to Microsoft word: Introduction to toolbar, advantages and features of Ms word. 4.2 Working with word document. 4.2.1 Edit menu: go to, replace, find, select all, and cut, copy, paste. 4.2.2 View: document and map, header and footer, all tool bars. 4.2.3 Insert: hyperlink, foot note, end note, comment, picture, chart, date and time, page number, etc… 4.2.4 Format: tab setting, font, borders and shedding, bullets and numbering, background, etc… 4.2.5 Tools: printing envelopes and labels, mail merge, etc… 4.2.6 Table: draw table, insert table, formula, convert, sort, etc… 4.2.7 Window: use of split. **4.3** Printing Document 4.3.1 Page Setup 4.3.2 Page Formatting 4.3.3 Mirror Margin 4.3.4 Line Numbers 4.3.5 Print Preview 4.3.6 Printing Document	10	

Topic No	Contents	Hours	Marks
	SECTION-II	32	NA
5.0	**Microsoft Excel**	12	
	Introduction to Microsoft Excel: Advantages of Microsoft excel, Features of Microsoft excel		
	5.2 Working with worksheet: Entering data, Creating a series, Editing worksheet.		
	5.3 File handling.		
	5.3.1 Saving a new unnamed document		
	5.3.2 Saving a named work book		
	5.3.3 Closing a work book		
	5.3.4 Creating a new work book		
	5.3.5 Opening an existing work book		
	5.4 Creating formulas and auditing work sheet.		
	5.4.1Creating formula		
	5.4.2Creating a simple worksheet		
	5.4.3Creating auto sum method		
	5.4.4Automatic calculation method		
	5.5 Formatting worksheet		
	5.5.1Text, number, currency, date and time		
	5.5.2Alignment and orientation		
	5.5.3 Font, font size, text color.		
	5.5.4 Border.		
	5.6Printing workbook		
	5.6.1 Page set up		
	5.6.2 Page formatting.		
	5.6.3 Margins		
	5.6.4 Header and footer		
	5.6.5 Sheet		
	5.6.6 Print preview		
	5.6.7 Making final formatting adjustments		
	5.6.8 Printing a work sheet.		
	5.7 Concept of Macro		
	5.7.1 Creation of Macro		
	5.7.2 Run created macro		
6.0	**Microsoft Power Point**	10	
	6.1Introduction to Microsoft PowerPoint:		
	6.1.1 What is the use of PowerPoint?		
	6.1.2 What is slide show?		
	6.2 Starting PowerPoint.		
	6.2.1 Understanding the PowerPoint Window, Title bar, and Menu bar.		
	6.2.2Using Toolbars, Rulers, status bar		
	6.2.3Using basic drawing tools, using auto shape tools, inserting text into object		
	6.3 Understanding the various views in power point.		
	6.3.1 Slide view		
	6.3.2 Outline view		

	6.3.3 Slide sorter view 6.3.4 Notes page view 6.3.5 Slide show view. 6.4 Changing Font color and applying effects. 6.4.1 Font color. 6.4.2 Line style, Dash style, Arrow style 6.4.3 Using lines style, dash style, and arrow for objects. 6.4.4 Applying color fill, Gradient effect, Texture effect, Pattern effect, Picture effect. 6.4.5 Applying shadow effect, Applying 3d effect. 6.5 Slide Transition 6.6 Custom animation. 6.6.1 Slide objects without animation. 6.6.2 Animation orders, Timing. 6.6.3 Start animation On mouse click or Automatically 6.7 Power point presentation Methods: 6.7.1 using Auto Content Wizards 6.7.2 Using Template method 6.7.3 Using Blank Presentation method		
7.0	**Microsoft Access** 7.1 Introduction to Ms-Access 7.1.1 How to create table in Ms-Access? 7.1.2 How to Create a database? 7.2 Operation on Table Queries: Select, Insert ,Delete, Add, Update 7.3 Import report from Excel to MS Access and view.	10	

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List of Practicals:

1	Creating files, icons and folders.
2	Study of Notepad, Calculator window.
3	Study of Ms-Word Window.
4	Preparation of BIO-DATA using Ms Word.
5	Study of printing Documents in Ms Word.
6	Preparation of application.
7	Preparation of student information table.
8	Use of Mail Merge to send and receive Mail.
9	Prepare an Excel-sheet for storing students data having following columns- First name, Last-named, Address, Phno.,Email_id, SSC percent., Cell no, Dept.
10	Create a following chart using Excel Student Name | Percentage | Grade Calculate the grade of students by using following conditions. • If the percentage is more than or equal to 85 the grade is "excellent" • If the percentage is more than or equal to 70 the grade is " distinction" • If the percentage is more than or equal to 60 the grade is " first class" • If the percentage is more than or equal to 50 the grade is "second class" • Otherwise the grade is "fail"
11	. Prepare an Excel sheet which has company sales figures for 12 months as column and branches as rows. Using formula find Total sale in every month and total sale for every branch.
12	. Prepare an Excel sheet for payroll System. Calculate HRA as =10% of basic. Calculate DA =15% of basic. Calculate Conv=5% of basic. Calculate total as = basic salary +HRA+DA+conv. Calculate PF as =5% of total. Calculate designation as = if the employees net salary is more than 5000/- his designation is 'Executive' otherwise he is 'Clerk'.
13	Prepare a power point presentation to Display objectives and contents of the Subject "Computer Fundamentals".
14	Prepare a power point presentation to display information of our institute.
15	Prepare a power point presentation to display information of your department.
16	Study of Ms-Access
17	Study of various table Operations in Ms-access.

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Reference Books:

Sr. No.	Book Title	Author	Publication
01	MS Office 2007/2010	Courter & Marquis	BPB Publication

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Programme Code : **Mechanical Engineering / Civil Engineering**											
Course Code : **ME 11 202**						Course Title : **Engineering Drawing - I**					
Prerequisite : **Nil**						C / O : **Compulsory**					
Credits				Duration of Written Examination		Examination Scheme					
TH	TU	PR	TOTAL	TH	TS	TH	TS	PR	OR	TW	TOTAL
2	-	4	6	4 hrs	2 Tests of 1.5 Hour each	80	20	-	-	50	150
(*) indicates assessment by Internal and External examiners.											

Rationale:

Engineering drawing is the graphical language. Engineers, designers, planners, supervisors and technician to express their thoughts, ideas and concepts use it. Engineering drawing offers students an insight into the methods of exploring engineering problems. Its imbibe the principles of accuracy and exactness with regard to the information necessary for the production of an engineering component. Finally, it develops the engineering imagination that is so essential to the creation of successful design.

The expression by drawing is very accurate, precise and brief. At a glance, one can understand detailed description of any part to be manufactured or an electric circuit or building construction details. For all technicians thorough understanding of principles of engineering drawing is essential.

Powerful CADD equipments in hands of the engineers will train in design and drafting can result in greater productivity, better response to changing needs and results into more competitive work force.

Objectives:

The students will be able to

- Effectively use drawing instruments for enhancing speed and accuracy in drawing.
- Draw orthographic views of complicated components.
- Draw isometric view of components with taper and slots.
- Develop the imagination and importance of accuracy and precision
- Appreciate use of computers in drafting.

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Section –I (Marks 40)		
Contents:	**Hrs.**	**Marks**
1. Introduction to Drawing Instruments 1.1 Drawing instruments and their specifications. 1.2 Types of letters and lines. 1.3 Simple geometrical constructions, e.g. polygons, tangential exercises. Redrawing figures using above geometrical construction. 1.4 Locus problems on simple link mechanisms	**03**	**12**
2. Engineering curves 2.1 Construction of ellipse by Concentric Circles Method, Arcs of Circles Method and Oblong Method. 2.2 Construction of Parabola and Hyperbola by directrix focuses method. 2.3 Construction of involute of polygon and circle. Construction of cycloid, epicycloids, hypocycloid and helix.	**06**	**12**
3. Orthographic projection 3.1 First and third angle of projection method and their convention. 3.2 Conversion of pictorial view into orthographic views, with sections. 3.3 Dimensioning technique as per I. S. and use of scales	**07**	**16**

Section –II (Marks 40)		
Contents:	**Hrs.**	**Marks**
4. Projection of lines, planes and solids. 4.1 Projections of lines and planes inclined to one plane only (limited to first quadrant), 4.2 Projections of solids such as pyramid, prism, cone and cylinder with plane of axis inclined to one reference plane only.	**06**	**16**

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5. Isometric view 5.1 5.1 Importance of Isometric Views 5.2 Concept of four centre method and iso-scale. 5.3 Concept of isometric view and isometric projection. 5.4 Demonstration of drawing an isometric view and isometric projection with curved, inclined and sloped surface. 5.5Isometric projection with holes and slots on inclined or sloped surface.	**06**	**16**
6. Freehand sketches Freehand sketches of the following components: 6.1 Different types thread forms. 6.2 Different types of nuts, bolts and screws. 6.3 Different types of nuts, bolts and screws	**03**	**08**
7. Introduction to AUTOCAD software Demonstration of AUTOCAD software. Drafting of 2D figures (draw command, modify, display command and miscellaneous).	**01**	**-**

List of practicals:-

Sheet 1 :- Drawing types of lines, problems on redraw based on geometrical construction and Locus problems on simple link mechanisms.

Sheet 2 :- To Draw ellipse by combination of any two methods, to draw Parabola or Hyperbola by directrix focus method, to draw of involutes of polygon or circle, to draw of cycloid and helix.

Sheet 3 :- orthographic projection of objects using first angle method of projection. Minimum 2 problems.

Sheet 4 :- orthographic projection with section of objects using first angle method of projection. Minimum 2 problems.

Sheet 5 :- Projections of lines and planes (two problems each).

Sheet 6 :- projection of solids using first angle method of projection.(3 problem)

Sheet 7:- To draw Isometric planes, isometric projections with isometric scale.(two objects)

Sheet 8 :- To draw Isometric views of objects including slots, holes and sloping faces.(two objects)

Sheet 9:- Different types thread forms, Different types of nuts, bolts and screws, Types of Locking devices to avoid loosening of nut and bolts and Butt and lap riveted joints.

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REFERENCES:

Sr. No.	Author	Title	Publication
1	K. Venugopal	Engineering Drawing & Graphics	New age International (P) Pvt. Ltd. Publication , Mumbai, Maharashtra
2	P. J. Shah	Engineering Graphics	S. Chand publication.Mumbai,Maharashtra
3	K. L. Narayanan and P. Kannanan	A Text book of Engineering Graphics	Scitech Publication Pvt. (I) ltd., Chennai.Tamilnadu
4	N.D. Bhatt	Elementary Engineering Drawing	Charoter Publishing House, Anand ,Gujrat

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यंत्र अभियांत्रिकी विभाग
शासकिय तंत्रनिकेतन, मुंबई-५१.

Principal
Government Polytechnic, Mumbai-51