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Programme: Diploma in Civil Engineering (DCE) Semester: I Implemented from: 2017

COURSE CODE	COURSE	G R	TEACHING SCHEME (HRS/WK)				EXAMINATION SCHEME												
			L	T	P	CR	PAP ER HRS	TH		IST	TOTAL		PR		OR		TW		TOTAL MARKS
								Max	Min		Max	Min	Max	Min	Max	Min			
171MA11a	MATHEMATICS-I	B	3	2	0	5	3	80	32	20	100	40					25@	10	125
171PH12	PHYSICS	B	4	0	2	6	3	80	32	20	100	40	25*	10			25@	10	150
171HM13x	COMMUNICATION SKILLS	B	3	2	0	5	3	80	32	20	100	40					25@	10	125
171ME14	ENGINEERING GRAPHICS-I	C	2	0	4	6	3	80	32	20	100	40					25@	10	125
171ME15	BASIC WORKSHOP PRACTICE	C	1	0	3	4											50@	20	50
171CE16	CONSTRUCTION MATERIALS	C	3	1	0	4	3	80	32	20	100	40					25@	10	125
171CE17	COMPUTER APPLICATIONS	A	0	0	2	2							25**	10			25@	10	50
171CE18	HOLISTIC LIVING	M	0	0	2												#		
	TOTAL		16	5	13	32		400		100	500		50				200		750

a-Indicates Mathematics-I is common for Civil, Electrical, Electronics and Mechanical.

x- Indicates Communication Skills is common for Civil, Electrical, Electronics, Mechanical, Textile and Chemical.

Abbreviations: B – Basic; C – Core; A – Applied; M – Management; L – Theory Lecture; T – Tutorial; P – Practical; TH – Theory Paper; IST – In-Semester Test ; PR – Practical Exam; OR – Oral Exam; TW- Term Work. @ : assessment by Internal Examiner, * : Indicates assessment by Internal Examiner, **: Indicates assessment by External and Internal Examiner

-For Non Credit course grades (A-D) to be mentioned in the marksheet based on the continuous assessment.


Curriculum Coordinator


Head
Diploma in Civil Engineering




Dean - Diploma

DIPLOMA PROGRAMME	: DIPLOMA IN CIVIL ENGINEERING
PROGRAMME CODE	: DCE
SEMESTER	: FIRST
COURSE TITLE	: MATHEMATICS I
COURSE CODE	: 171MA11a

TEACHING AND EXAMINATION SCHEME:

TEACHING SCHEME				EXAMINATION SCHEME												
L	T	P	CR	PAPER HRS	TH		IST	TOTAL		PR		OR		TW		TOTAL MARKS
					Max	Min		Max	Min	Max	Min	Max	Min			
3	2	-	5	3	80	32	20	100	40	-	-	-	-	25	10	125

Course Objectives:

1. To teach students basic facts, concepts and principles of Mathematics as a tool to analyze engineering problems.
2. To make students well versed in the prerequisites for further studies in Mathematics and Engineering

Course Outcomes:

Student should be able to

CO1	Apply properties of determinants and matrices to solve simultaneous linear equations.
CO2	Use binomial theorem for expansion and find equation of straight line, under given conditions.
CO3	Use properties and elementary operations of complex numbers to solve the problems.
CO4	Apply basic concepts in trigonometry to solve engineering problems.

Course Content:

SECTION-I								
Unit & Sub-Unit	Topics/Sub-topics	Hours	Marks	C O	R Level	U Level	A Level	
1	Determinants:	6	12	1	40%	40%	20%	
	1.1 Determinant of order three.							
	1.2 Cramer's rule.							
	1.3 Properties of determinants							
2	Binomial Theorem	8	8	2	40%	40%	20%	
	2.1 Concepts of Permutations and Combinations and problems based on ${}^n P_r, {}^n C_r$							
	2.2 Binomial Theorem with positive integral index, general term, Binomial expansion for negative integral and fractional index. .							
3	Straight line	5	8	2	40%	40%	20%	
	3.1 Equations of straight lines in different forms.							



	3.2	Angle between two straight lines, conditions for two parallel and perpendicular straight lines.						
4		Complex Numbers	6	12	3	40%	40%	20%
	4.1	Definition of complex number, Elementary Operations.						
	4.2	Argand's Diagram, Modulus, Amplitude, Polar form of a complex number.						
SECTION-II								
Unit & Sub-Unit	Topics/Sub-topics							
5		Trigonometry	16	28	4	40%	40%	20%
	5.1	Circular measure of an angle, Conversion from degrees to radians and radians to degrees.						
	5.2	Trigonometric ratios of angle in four quadrants.						
	5.3	Compound angle formulae.						
	5.4	Allied angle formulae.						
	5.5	Product formulae, Sum or difference formulae.						
	5.6	Multiple, submultiples angle formulae.						
	5.7	Inverse trigonometric functions.						
	5.8	Properties of triangle: sine rule, cosine rule. (without proof)						
6		Matrices	8	12	1	40%	40%	20%
	6.1	Matrices of order $m \times n$, types of matrices, equality of matrices						
	6.2	Addition and subtraction of matrices, multiplication of matrices						
	6.3	Transpose of matrix, ad joint of matrix, inverse of matrix						
	6.4	Solution of simultaneous linear equations by ad joint method.						
Legends: R- Remember, U – Understand, A – Apply and above levels (Blooms's Revised Taxonomy).								

List of Assignments/Tutorials:

Sr. No.	Unit	Practical/Assignment	Approx. Hours	CO
1	1	Determinants	2	1
2	5	Circular measure of an angle, Trigonometric ratios	2	4
3	5	Compound angle formulae, Allied angle formulae	2	4
4	5	Product formulae, Sum or difference formulae.	2	4
5	2	Binomial Theorem.	2	2
6	5	Multiple, submultiples angle formulae.	2	4
7	5	Inverse trigonometric functions, Properties of triangle	2	4
8	6	Matrices	2	1
9	3	Straight lines	2	2
10	4	Complex Numbers	2	3



Reference books:

Sr. No.	Author	Title	Publisher and Edition
1	S. P. Deshpande	Mathematics for Polytechnic	Pune Vidyarthi Griha Prakashan.
2	H.K.Dass	Advanced Engineering Mathematics	S.Chand & Company Ltd. Delhi
3	Dr.B.S.Grewal	Higher Engineering Mathematics	Khanna Publishers Delhi



Curriculum Coordinator



Head
Diploma in Civil Engineering



Dean - Diploma

DIPLOMA PROGRAMME	: DIPLOMA IN CIVIL ENGINEERING
PROGRAMME CODE	: DCE
SEMESTER	: FIRST
COURSE TITLE	: PHYSICS
COURSE CODE	: 171PH12

TEACHING AND EXAMINATION SCHEME:

TEACHING SCHEME				EXAMINATION SCHEME												
L	T	P	CR	PAPER HRS	TH		IST	TOTAL		PR*		OR		TW		TOTAL MARKS
					Max	Min		Max	Min	Max	Min	Max	Min			
4	-	2	6	3	80	32	20	100	40	25	10	-	-	25	10	150

*Practical examination will be conducted by internal faculty.

Course Objectives:--

Students should be able to;

- identify different systems of units and convert units from one system to other as well as conversant with practical units.
- understand properties of matter such as elasticity, surface tension and viscosity, concepts, laws and rules used in static and current electricity, principles of heat and thermodynamics and modern physics.
- analyze and use it for solving engineering problems.
- identify the phenomena of interference, diffraction and polarization of light and its industrial applications.
- identify, analyze, discriminate and interpret logical sequence of field problems with the study of physics.

Course Outcomes:

Student should be able to

CO1	Use various systems for measurements and measuring instruments.
CO2	Understand properties of matter, elasticity, viscosity and surface tension, along with relevant formulae, applications and problem solving based on it.
CO3	Understand concepts used in various phenomena of optics, such as wave theory, interference, diffraction, polarization etc., along with their applications and problems based on it.
CO4	Understand principles of heat and thermodynamics, their applications and numerical based on it.
CO5	Understand concepts, laws and rules used in static and current electricity; and apply it to solve problems based on it.
CO6	Understand concepts of modern physics used in X-rays and photoelectric effect, with their applications and problems based on it.

Course Content:

Sem I, DCE(R-2017), VJTI



SECTION-I								
Unit & Sub-Unit	Topics/Sub-topics	Hours	Marks	C O	R Level	U Level	A Level	
1.	Measurements							
	1.1	Need of measurements, requirements of standard unit, CGS, MKS, FPS and SI systems, fundamental and derived quantities/units, dimensions and dimensional analysis, problems	10	12	1	40%	40%	20%
	1.2	Vernier caliper, screw gauge, spherometer. Least counts and range of voltmeter, ammeter and thermometer.						
2.	Properties of matter							
	2.1	Elasticity – elasticity, plasticity, Hooke's law, Young's, Bulk and rigidity modulus, problems, relation between them, Searle's method of determination of Y, ultimate and breaking stress, factor of safety, wire under continuously increasing load.	10	12	2	40%	40%	20%
	2.2	Surface tension – cohesive and adhesive forces, sphere of influence, molecular theory of surface tension, angle of contact, capillarity (formula with derivation), problems						
	2.3	Viscosity – velocity gradient, Newton's law of viscosity, coefficient of viscosity, Stokes' law of viscosity, Stokes' method of viscosity, problems, laminar and turbulent flow, critical velocity, Reynold's number						
3.	Optics							
	3.1	Wave theory – wavefront, wave normal, laws of reflection and refraction, problems, Huygen's principle, dispersion, total internal reflection.						
	3.2	Interference – principle of superposition, constructive and destructive interference, conditions to obtain interference pattern, Young's double slit experiment, derivation of bandwidth, problems.	12	16	3	40%	40%	20%
	3.3	Diffraction – definition, types of diffraction, single slit diffraction pattern, diffraction grating, grating element, grating formula, problems, determination of wavelength of light.						
	3.4	Polarization – polarized and unpolarized light, polarizer, analyzer, optical activity, optical rotation, specific rotation, polarimeter (principle, construction, working and applications)						
SECTION-II								
Unit & Sub-Unit	Topics/Sub-topics							
4	Heat and Thermodynamics	10	12	4	40%	40%	20%	



	4.1	Gas laws – Boyle’s law, Charle’s law, Gay-Lussac’s law, absolute zero, Kelvin scale, work done at constant pressure. Cp, Cv and Mayer’s relation, problems, isothermal, adiabatic, isobaric and isochoric processes.						
	4.2	Expansion and transmission of heat – coefficients of linear, areal and cubical expansion, modes of transmission of heat, laws of thermal conductivity, coefficient of thermal conductivity, Lee’s and Searle’s methods, laws of thermodynamics, problems.						
5	Static and current electricity		12	16	5	40%	40%	20%
	5.1	Static electricity – Coulomb’s law, one coulomb, electric field, electric potential, capacitor, problems						
	5.2	Current electricity – Ohm’s law, one ohm, conductance, resistivity, conductivity, series and parallel combination of resistances, Wheatstone’s bridge, Joule’s law, potentiometer and its applications.						
6	Modern physics		10	12	6	40%	40%	20%
	6.1	X-rays – Coolidge X-ray tube, continuous characteristic and X-rays, problems, properties and applications, Moseley’s law.						
	6.2	Photoelectric effect – Planck’s theory of radiation, Einstein’s photoelectric equation, problems, photocells – photo-emissive, photovoltaic and photoconductive (construction, working and applications)						
Legends: R- Remember, U – Understand, A – Apply and above levels (Blooms’s Revised Taxonomy).								

Notes: This specification table shall be treated as a general guideline and actual distribution of marks may slightly vary from table. But the questions from each topic should be asked as per marks weightage. Numerical questions are to be asked only if specified.

List of Practicals

Sr. No.	Practicals	Approx. Hours	CO
1	Study of vernier caliper and travelling microscope	2	1
2	Study of screw gauge	2	1
3	Determination of viscosity of liquid by Stokes’ method	2	2
4	Determination of wavelength of light using diffraction.	2	3
5	Thermal conductivity of good conductor by Searle’s method	2	4
6	Thermal conductivity of bad conductor by Lee’s method	2	4
7	To verify Ohm’s law.	2	5
8	Use of meter bridge	2	5



9	Comparison of emfs of cells	2	5
10	Measurement of internal resistance of cell	2	5
* Minimum 8 and maximum 12 practicals/experiment sessions to be included in a course in a term			

Text Books:

Sr. No.	Author	Title	Publisher and Edition
1	XIth standard physics book		HSC Board, M.S. / NCERT
2	XIIth standard physics book		HSC Board, M.S. / NCERT


Reference books and Websites:

Sr. No.	Author	Title	Publisher and Edition
1	Halliday D., Resnik R. and Walker	Fundamentals of physics extended	Wiley India, New Delhi, 8 th edition
2	Serway R A and Jewett, Jr. J W	Physics for scientists and Engineers	Cengage learning, New Delhi, 6 th edition
3	Verma H C	Concepts of Physics – Part I and II	Bharti Bhavan, New Delhi


Curriculum Coordinator




Head
Diploma in Civil Engineering


Dean - Diploma

DIPLOMA PROGRAMME	: DIPLOMA IN CIVIL ENGINEERING
PROGRAMME CODE	: DCE
SEMESTER	: FIRST
COURSE TITLE	: COMMUNICATION SKILLS
COURSE CODE	: 171HM13x

TEACHING AND EXAMINATION SCHEME:

TEACHING SCHEME				EXAMINATION SCHEME												
L	T	P	CR	PAPER HRS	TH		JST	TOTAL		PR		OR		TW		TOTAL MARKS
					Max	Min		Max	Min	Max	Min	Max	Min			
3	2	0	5	3	80	32	20	100	40	-	-	-	-	25	10	125

Course Objectives: Cultivating writing skills in students by giving exposure to good language, enhancing the power of expression through vocabulary exercises, improving skills of composition, promoting coherence in thinking, assimilating and reproducing ideas and enabling the students to formulate grammatically correct sentences thereby developing their ability to communicate effectively in industry, professional fields, in academic and social circles.

- In order to develop the writing abilities in students textbooks that give exposure to language have been introduced.
- The tutorials have been incorporated to provide practice to the students to develop writing skills.
- Vocabulary exercises are given to enhance word power while writing.
- Grammar topics are taught by giving sufficient practice material to help them formulate grammatically correct sentences.
- Idioms, phrases and proverbs are introduced in order to acquire fluency and richness to their language while expressing ideas through writing.

Course Outcomes:

Student should be able to

CO1	To acquire the ability to formulate grammatically correct sentences
CO2	To improve power of expression in written communication
CO3	To develop coherence in thinking, comprehending and expressing one's ideas in one's own language

Course Content

SECTION-I								
Unit & Sub-Unit	Topics/Sub-topics	Hours	Marks	CO	R Level	U Level	A Level	
I 1	A) Modern Trailblazers- textbook 1 B) Delights in prose- textbook 2 a) Five to six chapters from the prescribed textbooks b) Power point presentation based on texts as well as drawing parallels from industry c) Inviting speakers from the industry to deliver lectures connected with the topics in the text.	14	22	3	30%	50%	20%	



	2	Word formation from the text. a) Use of technical vocabulary b) correct spellings c) synonyms d) powerful expression	3	3	2	20%	20%	60%
	3 A	Short composition a) Paragraph writing - Coherence - Correct grammar - good vocabulary - proper structure b) Description of an object or a product or a situation. -use of technical words - development of ideas	5	8	3	20%	20%	60%
	3 B	Comprehension passages a) Summarization of passages in one's own words.(Newspaper articles, general articles etc) b) Identifying the theme of the passage precisely and enumerating the sub points	4	7	3	30%	50%	20%
SECTION-II								
Unit & Sub-Unit		Topics/Sub-topics						
II	1	Vocabulary Building a) Synonyms b) Antonyms c) Homophones d) One word substitutes e) Homonyms	5	10	2	20%	40%	40%
	2	A) Application of grammar a) Correction of common errors in English b) Sentence structure B) short official letters a) leave applications b) seeking permission from authority c) grievance letter (campus situations)	4	15	1	30%	50%	20%
	3	Use of refined language a) Idioms b) Proverbs c) Phrases	6	15	2	40%	40%	20%
		TOTAL	48	80				
Legends: R- Remember, U – Understand, A – Apply and above levels (Blooms's Revised Taxonomy).								

Notes: This specification table shall be treated as a general guideline and actual distribution of marks may slightly vary from table. But the questions from each topic should be asked as per marks weightage. Numerical questions are to be asked only if specified.



List of Assignments/Tutorials:

Sr. No.	Practical/Assignment	Approx. Hours	CO
1.	Synonyms	2	CO 2
2.	Antonyms	2	CO 2
3.	Homophones	2	CO2
4.	Homonyms	2	CO 2
5.	One word substitute	2	CO 2
6	Phrases	2	CO2
7	Idioms	2	CO 2
8	Proverbs	2	
9	Sentence structure	2	CO 1
10.	Correction of Errors	2	CO 1
11	Comprehension a) Summarizing PPT Presentation b) Recapping the speech delivered	4	CO 3
12	Composition writing a) short letters	4	CO 3

Text Books:

Sr. No.	Author	Title	Publisher and Edition
1	Board of Editors – Chief Editor- Ajay R. Tengse	Delights in Prose	Orient Black Swan, First edition, 2014
2	Akshay V. Dhote Hitendra V. Dhote	Modern Trailblazers	Orient Black Swan, First edition, 2013


Reference books and Websites:

Sr. No.	Author	Title	Publisher and Edition
1	Oxford	Dictionary	Oxford University
2	Sanghita sen Alankrita Mahendra Priyadarshi Patnaik	Communication Language and Skills	Cambridge university Press, First published, 2015
3	B.V Pathak	English semester I	Nirali Prakashan, Fourth Edition, 2007
4	Green David	Contemporary English Grammar, structure and composition	Macmillan, India, First edition, 2000
5	Raymond Murphy	Essential English Grammar	Cambridge university Press, third Edition, 2011


Curriculum Coordinators




Head
Diploma in Civil Engineering


Dean - Diploma

DIPLOMA PROGRAMME	: DIPLOMA IN CIVIL ENGINEERING
PROGRAMME CODE	: DCE
SEMESTER	: FIRST
COURSE TITLE	: ENGINEERING GRAPHICS-I
COURSE CODE	: 171ME14

TEACHING AND EXAMINATION SCHEME:

TEACHING SCHEME					EXAMINATION SCHEME											
L	T	P	CR	PAPER HRS	TH		IST	TOTAL		PR		OR		TW		TOTAL MARKS
					Max	Min		Max	Min	Max	Min	Max	Min			
2	-	4	6	3	80	32	20	100	40	-	-	-	-	25	10	125

Course Objectives:

The student will able to

- Understand the fundamentals of Engineering Graphics
- Read and interpret object drawings.

Course Outcomes:

Student should be able to

CO1	To understand geometry of shapes, drawing conventions, definitions and drawing procedures.
CO2	To imagine shapes of solid objects in three dimensions and draw their different views.
CO3	To imagine internal details of solid objects from given views and use of drawing conventions.

Course Content:

SECTION-I								
Unit & Sub-Unit	Topics/Sub-topics		Hours	Marks	CO	R Level	U Level	A Level
1	Drawing Instruments & their uses		4	10	1	30	30	40
	1.1	Letters & Numbers (Single stroke Vertical)						
	1.2	Convention of Lines & it's applications						
	1.3	Geometrical Constructions involving construction of tangential arcs						
2	Engineering Curves		6	14	1	40	30	30
	2.1	Ellipse by following Methods 1. Arcs of Circles Method 2. Concentric Circles method 3. Rectangle/Oblong Method 4. Eccentricity Method						



2.3	Parabola by following Methods 1. Eccentricity Method 2. Rectangle Method						
2.4	Hyperbola by Eccentricity Method Rectangular Hyperbola						
2.5	Cycloid (Starting Point of the curve to be the point of contact at the beginning)						
2.6	Involute of a circle (Full Involute only) Involute of a regular polygon						
2.8	Helix on a cylinder						
3	Projections of Points & Straight Lines Reference Planes of projections – HP, VP & PP Orthographic Projections of Points, Projections of Straight Lines with lines inclined to both the reference planes. (Lines to be considered in first quadrant only. Simple problems excluding HT & VT of a line)	6	16	2	40	30	30
SECTION-II							
Unit & Sub-Unit	Topics/Sub-topics						
4	Projections of Planes Projections of circular, square, rhombus, triangular, regular pentagonal & hexagonal plane surfaces with surfaces inclined to one reference plane & perpendicular to other. (excluding side view)	4	10	2	40	30	30
5	Orthographic Projections Simple Orthographic and Sectional Orthographic Projections of simple machine parts .(Full Section in one view)	10	30	3	40	30	30
6	Introduction to Computer Drafting Introduction to different commands in the drawing software	2	-	3	30	30	40
Legends: R- Remember, U – Understand, A – Apply and above levels (Blooms’s Revised Taxonomy).							

Notes: This specification table shall be treated as a general guideline and actual distribution of marks may slightly vary from table. But the questions from each topic should be asked as per marks weightage. Numerical questions are to be asked only if specified.



List of Practicals/Assignments/Tutorials:

Sr. No.	Unit	Practical/Assignment	Approx. Hours	CO
1	A	Three sheets on problems from geometrical constructions, lettering & types of lines	10	1
	B	Five Sheets on the topic of Engineering Curves.	20	1
	C	Four Sheets on Projections of Points & Projections of Straight Lines.	10	2
	D	Three Sheets on Projections of Planes.	10	2
	E	Five Sheets on the topic of Orthographic Projections.	10	3
2		Demonstration of drafting software to the students.		

Note - The students should workout the problems on the following topics preferably on quarter imperial drawing sheets during the practical.

Text Books:


Sr. No.	Author	Title	Publisher and Edition
1	N.D.Bhatt	Engineering Drawing	Charotar Publishers 53 rd Edition 2014
2	S.T.Ghan, M.V.Rawalani	Engineering Drawing	Nirali Publications Edition -2014/1

Reference books and Websites:

Sr. No.	Author	Title	Publisher and Edition
1	D.A.Jolhe	Engineering Drawing	TATA McGraw Hill- 2008
2	K.R.Mohan	Engineering Graphics	Dhanpatrai Publishing Co. 1 st Edition-2009


Curriculum Coordinator


Head
Diploma in Civil Engineering


Dean - Diploma



DIPLOMA PROGRAMME	: DIPLOMA IN CIVIL ENGINEERING
PROGRAMME CODE	: DCE
SEMESTER	: FIRST
COURSE TITLE	: BASIC WORKSHOP PRACTICE
COURSE CODE	: 171ME15

Teaching & Examination Scheme: -

Teaching Scheme				Paper Hours	Examination Scheme										Total Marks	
L	T	P	CR		Theory		Test	Total		P		O		TW		
					Max	Min		Max	Min	Max	Min	Max	Min	Max		Min
1	-	3	4	-	-	-	-	-	-	-	-	-	-	50	20	50

Course Objectives:

1. To lay a strong foundation in study and practice of basic workshop processes which is the backbone of Engineering.
2. To make students well versed to identify, select and use various marking, measuring, holding, striking and cutting tools & equipments.

Course Outcomes:

Student should be able to

CO1	Learn types of engineering material and their properties.
CO2	Operate, control different machines and equipments.
CO3	Inspect and produce the job as per specified dimensions.
CO4	Adopt safety practices while working on various machines.

Course Content:

Unit & Sub-Unit	Topics/Sub-topics	Hours	Marks	CO	R Level	U Level	A Level
1	ENGINEERING MATERIALS:	2	8	1	40	30	30
1.1	Introduction.						
1.2	Different types of ferrous and non-ferrous materials.						
	1.3 Properties of Engineering materials.						
2	CARPENTRY SHOP:	3	8	3	40	30	30
2.1	Introduction.						
2.2	Various types of woods.						
	2.3 Different types of tools, machines and accessories.						
3	FITTING SHOP:	3	8	3	40	30	30
3.1	Introduction						
3.2	Various marking, measuring, cutting,						



		holding and striking tools.						
	3.3	Different fitting operation like chipping, filing, right angle. marking, drilling, tapping etc.						
	3.4	Working Principle of Drilling machine, Tapping dies, its use.						
	3.5	Safety precautions and safety equipments.						
4		WELDING SHOP:						
	4.1	Introduction.						
	4.2	Types of welding, ARC welding, Gas welding, Gas Cutting.						
	4.3	Welding of dissimilar materials, Selection of welding rod material, Size of welding rod and work piece.	3	9	4	40	30	30
	4.4	Different types of flame.						
	4.5	Elementary symbolic representation.						
	4.6	Safety precautions in welding, safety equipments and its use in welding processes.						
5		SMITHY SHOP						
	5.1	Introduction.						
	5.2	Different forging processes like shaping, caulking, fullering, setting down operations etc.	3	9	2	40	30	30
	5.3	Safety precautions and safety equipments.						
6		LATHE:						
	6.1	Introduction.						
	6.2	Various operations performed on Lathe machine.	2	8	4	40	30	30
	6.3	Main parts of Lathe machine.						
Legends: R- Remember, U – Understand, A – Apply								

List of Practicals:

Sr. No.	Practical	Approx. Hours	CO
1	CARPENTRY SHOP: Demonstration of different wood working tools / machines. Demonstration of different wood working processes, like planing, marking, chiseling, grooving, turning of wood etc. One simple job involving any one joint like mortise and tenon, dovetail, bridle, half lap etc.	9	1
3	SMITHY SHOP: Demonstration of different forging tools and Power Hammer. Demonstration of different forging processes like shaping, caulking, fullering, setting down operation etc. One job like hook peg, flat chisel or any hardware item.	9	2
4	FITTING SHOP: Demonstration of different fitting tools and drilling machines and power tools.	12	2




	Demonstration of different operations like chipping, filing, drilling, tapping, cutting etc. One simple fitting job involving practice of chipping, filing, drilling, tapping, cutting etc.		
5	WELDING SHOP: Demonstration of different welding tools / machines. Demonstration of Arc Welding, Gas Welding, Gas Cutting and rebuilding of broken parts with welding. One simple job involving butt and lap joint.	6	2

Reference books :

Sr. No.	Author	Title	Publisher and Edition
1	K.C.John	Mechanical Workshop Practice	PHI Learning Pvt Ltd, EEE 2010
2	B.S. Raghuwanshi	Workshop Technology	Dhanpat Rai and sons, New Delhi, 9 th Edition, 2002
3	S.K. Hajra Chaudhary	Workshop Technology Vol I & II	Media Promoters and Publisher, New Delhi. 8 th edition , 1986


Curriculum Coordinator


Head
Diploma in Civil Engineering


Dean - Diploma



DIPLOMA PROGRAMME	: DIPLOMA IN CIVIL ENGINEERING
PROGRAMME CODE	: DCE
SEMESTER	: FIRST
COURSE TITLE	: CONSTRUCTION MATERIALS
COURSE CODE	: 17ICE16

TEACHING AND EXAMINATION SCHEME:

TEACHING SCHEME					EXAMINATION SCHEME											
L	T	P	CR	PAPER HRS	TH		IST	TOTAL		PR		OR		TW		TOTAL MARKS
					Max	Min		Max	Min	Max	Min	Max	Min			
3	1	0	4	3	80	32	20	100	40	--	--	--	--	25	10	125

Course Objectives:

This course is intended to teach the students various construction materials, properties, testing, manufacturing methods and their suitability.

Course Outcomes:

After completion of the course the student will be able to

CO1	State the sources, composition & properties of vast variety of construction materials.
CO2	Compare different construction materials.
CO3	Identify selection, testing, storing & use of various materials in civil engineering project.
CO4	Know the manufacturing methods of different construction materials.
CO5	Know field tests for assessing required quality of construction materials.

Course Content:

SECTION-I								
Unit & Sub-Unit	Topics/Sub-topics	Hours	Marks	CO	R Level	U Level	A Level	
1	Introduction:							
1	1.1 Building Materials: Physical and mechanical properties.							
	1.2 Building Stones: Origin, Uses of stones, Characteristics of good Building stone, Properties and Testing of stone, Quarrying & Dressing of stones, Selection of stones, Common building stones, Application of stones,	06	11	1,3	40%	40%	20%	
2	Aggregate & Lime							
	2.1 Aggregate: Classification of Aggregates, Properties and Uses	04	09	1,3	30%	50%	20%	
	2.2 Lime: Sources, Properties, Classification, Slacking of Lime, Storage of Lime.							
3	Brick and Cement							
	3.1 Brick: Manufacturing, Classification, Characteristics of good brick, Conventional size in practice & standard IS size, Field Tests on Bricks, Bricks used	10	14	2,4,5	30%	50%	20%	



		on site – Fly Ash bricks & Concrete Blocks- Lightweight autoclaved aerated concrete blocks.						
	3.2	Cement: Manufacturing (flow chart – wet & dry process) . Chemical constituent of cement, Properties, Field Testing of cement ,Storage of cement						
4		Paints and Varnishes						
	4.1	Paint: Definition, Characteristics of an ideal paint, Various types of Paints- Aluminum Paint, Cement Paint, Enamel Paint, Anti-Corrosive Paint, Oil Paint, Emulsion Paint and Plastic Paint.	04	06	1,3	40%	40%	20%
	4.2	Distemper: Types and uses.						
	4.3	Varnishes: Types and uses.						
SECTION-II								
Unit & Sub-Unit	Topics/Sub-topics							
5	Ferrous & Non Ferrous Metals							
	5.1	Ferrous Metals: Ferrous Metal: Introduction to Iron, Pig iron, Wrought Iron, Cast Iron. Rusting and Corrosion.	05	08	2,3	40%	40%	20%
	5.2	Non Ferrous Metals: Properties, uses of Aluminum, Copper, zinc, Lead, Nickel, Tin.						
6	Wood and Wood based products							
	6.1	Timber: Use of timber in different parts of the building, Characteristics of good timber. Seasoning of timber, Defects in Timber.						
	6.2	Wood based products: Veneers, Plywood, Fibre Board, Particle board, and Block board, Batten Board and Lamin Board, Application of wood based products.	08	14	3,5	40%	40%	20%
	6.3	Bamboo and Ballis: Properties and uses of Bamboos and Ballis.						
7	Glass and Plastics							
	7.1	Glass: Classification, commercial forms and uses.	05	08	2,3	40%	40%	20%
	7.2	Plastic: Types of plastics, Application of plastics						
8	Pozzolanas							
	8.1	Introduction: Definition, Introduction, Classification, Activity of Pozzolanas.	06	10	1,3	30%	50%	20%
	8.2	Various Pozzolanas: Fly ash, Ground blast furnace slag, Silica Fume, Rice Husk ash.						
Legends: R- Remember, U – Understand, A – Apply and above levels (Blooms’ Revised Taxonomy).								



SUGGESTED SPECIFICATION TABLE WITH HOURS (Theory)

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Introduction	6	40%	40%	20%	11
II	Aggregate & Lime	4	30%	50%	20%	9
III	Brick and Cement	10	30%	50%	20%	14
IV	Paints and Varnishes	4	40%	40%	20%	6
V	Ferrous & Non Ferrous Metals	5	40%	40%	20%	8
VI	Wood and Wood based products	8	40%	40%	20%	14
VII	Glass and Plastics	5	40%	40%	20%	8
VIII	Pozzolanas	6	30%	50%	20%	10
TOTAL		48	290	350	160	80

Legends: R = Remember; U = Understand; A = Apply and above levels (Bloom's revised taxonomy)

Notes: This specification table shall be treated as a general guideline and actual distribution of marks may slightly vary from table. But the questions from each topic should be asked as per marks weightage. Numerical questions are to be asked only if specified.

List of Practicals/Assignments/Tutorials:

Sr. No.	Unit	Assignments	Approx. Hours	CO
1.	1	Building materials and stones.	2	1,3
2.	2	Aggregate and Lime.	2	1,3
3.	3	Brick and Cement	2	2,4,5
4	4	Paint and Varnishes	2	1,3
5	5	Ferrous and Non-Ferrous metals	2	2,3
6	6	Wood and Wood based products	2	3,5
7	7	Glass and Plastics	2	2,3
8	8	Pozzolanas	2	1,3

* Minimum 8 and maximum 12 practical's/experiment sessions to be included in a course in a term

Text Books:

Sr. No.	Author	Title	Publisher and Edition
1.	R.K. Rajput.	Engineering Materials	Publisher: S Chand & Company Ltd, New delhi-110055 Edition: 5 th , 2015
2.	S.C. Rangwala	Engineering Materials	Charotar publishing house private Ltd, Anand 38801, Gujarat India. Edition: 43 rd , 2016.

Reference books and Websites:

Sr. No.	Author	Title	Publisher and Edition
1.	S.K.Duggal	Building Materials	Publisher: New Age International (P) Ltd, New Delhi 110002. Edition: 4 th , 2016
2.	IS Codes		Bureau Of Indian Standards
3.	Websites: a) https://en.wikipedia.org/wiki/List_of_building_materials b) http://www.understandconstruction.com/building-materials.html		


Curriculum Coordinator


Head
Diploma in Civil Engg.


Dean - Diploma



DIPLOMA PROGRAMME	: DIPLOMA IN CIVIL ENGINEERING
PROGRAMME CODE	: DCE
SEMESTER	: FIRST
COURSE TITLE	: COMPUTER APPLICATIONS
COURSE CODE	: 17ICE17

TEACHING AND EXAMINATION SCHEME:

TEACHING SCHEME				EXAMINATION SCHEME												
L	T	P	CR	PAPER HRS	TH		IST	TOTAL		PR		OR		TW		TOTAL MARKS
					Max	Min		Max	Min	Max	Min	Max	Min			
-	-	2	2	-	-	-	-	-	-	25 ^{YA}	10	-	-	25 ⁰	10	50

Course Objectives:

The student will able to

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

Course Outcomes:

Student should be able to

CO1	Able to identify and define the components of computer system.
CO2	Able to use word software to prepare report.
CO3	Able to prepare power point presentation effectively.
CO4	Able to prepare excel worksheets for basic data interpretation by using formulae and functions.

Notes: This specification table shall be treated as a general guideline and actual distribution of marks may slightly vary from table. But the questions from each topic should be asked as per marks weightage. Numerical questions are to be asked only if specified.



List of Practicals

Sr. No.	Practical/Assignment	Approx. Hours	CO
1	Practice session for Word software	4	CO2
2	Basic knowledge of computer hardware & operating systems.	3	CO1
3	Study of different Office tool bars.	3	CO2
4	Entering / Editing in Excel. <ul style="list-style-type: none"> Solve any problem based on formatting the cell content, setting the alignment & setting the number of decimal places. Preparation of mark sheet & result analysis. 	6	CO4
5	Formatting Data & sheet Structure <ul style="list-style-type: none"> Solve any problem based on conditional formatting. 	2	CO4
6	Data manipulations. <ul style="list-style-type: none"> Problem based on data sorting using filter option 	4	CO4
7	Problem based on what if analysis using scenario option	2	CO4
8	Create chart for population, rainfall, marks obtained , profit & loss etc. by using Line chart, Bar chart, Pie chart, XY Scatter chart	4	CO2,C O4
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.	4	CO3

Text Books:

Sr. No.	Author	Title	Publisher and Edition
1	Arun Soni,	Simple dose of computers MS Excel 2000 Beginners	Navdeep
2	Arun Soni,	Simple dose of computers MS Excel 2000 Advance Level	Navdeep.

Reference books and Websites:

Sr. No.	Author	Title	Publisher and Edition
1	Patt and Patel	Introduction to computing systems	Tata McGraw- Hill Publishing Company.


Curriculum Coordinator


Head
Diploma in Civil Engineering


Dean - Diploma



DIPLOMA PROGRAMME	: DIPLOMA IN CIVIL ENGINEERING
PROGRAMME CODE	: DCE
SEMESTER	: FIRST
COURSE TITLE	: HOLISTIC LIVING
COURSE CODE	: 17ICE18

TEACHING AND EXAMINATION SCHEME:

TEACHING SCHEME					EXAMINATION SCHEME												
L	T	P	CR	PAPER HRS	TH		IST	TOTAL		PR		OR		TW		TOTAL MARKS	
					Max	Min		Max	Min	Max	Min	Max	Min				
0	0	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71

Course Objectives: Students should be able to

- To understand the social ethics.
- To promote the cause of intelligent art of living a healthy, peaceful, spiritual, value based life of moral values.
- To manifest the inner divinity & spiritual energies of human kind.

Course Outcomes:

After completion of the course the student will be able to

CO1	Gain knowledge about the basic technique & practice of yoga, including instruction in breath control, meditation & physical postures.
CO2	Gain an intellectual & theoretical understanding of principles embodied in yoga sutras.
CO3	Develop physical competency & mental concentration.
CO4	Increase efficiency, concentration, inner power & enhance the spiritual power for improving learning skills.

Course Content:

SECTION-I							
Unit & Sub-Unit	Topics/Sub-topics	Hours	Marks	C O	R Level	U Level	A Level
I	Historical background & Yoga	22		1,2	40%	20%	40%
1	1.1						
	1.2						
	1.3						
	1.4						
	1.5						
	1.6						
	1.7						
	1.8						



		strength of immune system.					
	1.9	Bandhas & Mudras					
	1.10	Depth of perception & expansion of awareness					
	2	Meditation & its techniques	10		1,3	40%	20%
2	2.1	Concept of meditation			4		40%
	2.2	Necessity of meditation					
	2.3	Benefits of meditation- bodily benefits, Mental benefits, value based society, spiritual growth, trusting, happy & content society.					
	2.4	Meditative postures & kinds of meditation					
		TOTAL	32				

Legends: R- Remember, U – Understand, A – Apply and above levels (Blooms’s Revised Taxonomy).

List of Practicals/Assignments/Tutorials:

Holistic Living course will be taken by concerned expert in the field relevant to performance / performing practices.

1. Students will be performing practice sessions covering above topics.
2. Live demonstration along with content delivery sessions will be conducted.
3. The lecture room / Hall separately will be assigned batch wise as per time table for boys & girls depending upon relevant topics.
4. The materials / items required e.g. yoga matt need to be brought by students only for particular topics.

Following listed sessions need to be organized for the students delivered by an expert in the field.

Sr. No.	Unit	Practicals / Assignments	Approx. Hours	CO
1	1.2	Yoga , Yoga in Vedas and its principles	2	1,2
2	1.5	Pranayama: Breath control, Breath & postures, rhythmic breathing.	4	1,2
3	1.5	Suryanamaskara	2	
4	1.6	Controlling the body, Mechanism of body: Kriyas & its high therapeutic value.	4	1,2
5	1.7	Aasanas	4	1,2
6	1.9	Bandhas & Mudras	4	1,2
7	2.4	Meditative postures & kinds of meditation	10	1,2,3

Text Books:

Sr. No.	Author	Title	Publisher and Edition
1.	M.R.Yardi, Bhandarkar	The Yoga Sutra of Patanjali	Oriental Research Institute, Pune.
2.	Iyenger	Light on Yoga	Knopf Publication Group.




Reference books and Websites:

Sr. No.	Author	Title	Publisher and Edition
1.	Gopal Usha	Yogasan (in Hindi)	Sports Publication
2.	George Feuerstein	The Yoga Tradition	Hohm press

<http://www.healthy-holistic-living.com>


Curriculum Coordinator


**Head
Diploma in Civil Engineering**


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