



BHARTI VISHWAVIDYALAYA, DURG

Scheme of Teaching and Examination

Diploma in Electronics & Telecommunication/Computer Science & Engineering

(Group II)

Semester – I, Session - 2021-22

S. No.	Course Code	Course Titles	Scheme of Studies			
			L	P	T	Credit (L + T + P/2)
1	DE00101	Communication Skills – I	2	-	1	3
2	DE00102	Applied Maths – I	2	-	1	3
3	DE00103	Applied Physics	2	-	1	3
4	DE00104	Applied Chemistry	2	-	1	3
5	DE00105	Computer Fundamentals & Applications	2	-	0	2
6	DE00106	Applied Physics (Lab)	-	2	-	1
7	DE00107	Applied Chemistry (Lab)	-	2	-	1
8	DE00108	Computer Fundamentals & Applications (Lab)	-	4	-	2
9	DE00109	Seminar & Technical Presentation (Listening, Reading & Speaking) Skills	-	2	-	1
10	-	Library	-	2	-	-
11	-	Co-curricular & Academic Activity Societies	-	2	-	-
Total			10	14	04	19

L - Lecture

P – Practical

T - Tutorial



Scheme of Teaching and Examination

Diploma in Electronics and Telecommunication/Computer Science & Engineering

(Group-II)

Semester-I, Session - 2021-22

S. No.	Course Code	Course Titles	Scheme of Examination					
			Theory			Practical		Total Marks
			ESE	CT	TA	ESE	TA	
1	DE00101	Communication Skills-I	70	10	20	-	-	100
2	DE00102	Applied Math - I	70	10	20	-	-	100
3	DE00103	Applied Physics	70	10	20	-	-	100
4	DE00104	Applied Chemistry	70	10	20	-	-	100
5	DE00105	Computer Fundamentals & Applications	70	10	20	-	-	100
6	DE00106	Applied Physics (Lab)	-	-	-	35	15	50
7	DE00107	Applied Chemistry (Lab)	-	-	-	35	15	50
8	DE00108	Computer Fundamentals & Applications (Lab)	-	-	-	35	15	50
9	DE00109	Seminar & Technical Presentation (Listening, Reading & Speaking) Skills	-	-	-	-	50	50
Total			350	50	100	105	95	700

ESE: End of Semester Exam, CT: Class Test, TA: Teachers Assessment

Legend:

Lecture (L): □ CI Classroom Instruction (Includes different instructional strategies i.e Lecture and others.)

Practical (P): LI Laboratory Instruction (Includes practical performances in Laboratory workshop, field or other locations using different instructional strategies).

Tutorial (T): Includes sessional work (SW) (assignment, seminar, mini project etc), self-Learning (SL)

Note: Leftover periods/week shall be utilized for Self Learning (SL) purpose.



BHARTI VISHWAVIDYALAYA, DURG

Semester: Diploma 1st sem

Branch: Common to all Branches

Subject: Communication Skills – I

Course Code: DE00101

Total Marks in End Semester Exam: 70

Min. Marks - 28

Unit – 1

English Grammar Sentence–Parts types transformation (Affirmative, Negative and interrogative), Determiners, Tenses, Active and Passive Voice, Prepositions, Subject-Verb Agreement.

Unit – 2

Effective Communication objectives of communication. Elements of communication process, Seven Cs of Communication, Different Communication Skills, Listening Speaking Reading Writing, Effective use of listening, listening versus hearing, Process and Purpose of listening. Techniques of effective listening.

Unit – 3

Short Stories, Selfish Giant-Oscar Wilde A Letter to God-Gregario Lapex Y-Fuentes, An astrologer's Day –R.K. Narayan.

Unit – 4

Suggestive passages for Comprehension, Language of Science, Non-conventional sources of Energy, Our Environment and Entrepreneurship.

Books:

1. English Grammar in Use Murphy Raymond Cambridge Publications 4th Edition.
2. Living English Structure Allen Cambridge Publications Fifth edition (2009).
3. Effective English with CD Kumar, E. Suresh; Sreehari, P.; Savithri, J. Pearson Education, Noida, New Delhi 2009 ISBN: 978-81-317-3100-0.
4. English Grammar at Glance Gnanamurali, M. S. Chand and Co. New Delhi, 2011
5. Communication Skill for Technical Students Somaiya Publication.
6. Elementary English Agarwal N. K. Goyal Brothers Latest Edition.
7. Grammar and Composition A Study Guide on Communication Skills for Technical Students Dr. Sumi Guha Dr. Shameena Bano Prakashan Vaibhav Prakashan 1st Edition, 2020 ISBN - 978-93-89989-25-0.



Open source software and website address:

1. <https://www.englishgrammar.org/>
2. <http://www.englishgrammarsecrets.com/>
3. <https://www.usingenglish.com/handouts/>
4. <http://learnenglish.britishcouncil.org/en/english-grammar>
5. <https://www.englishclub.com/grammar/>
6. <http://www.perfect-english-grammar.com/>
7. <http://www.englishteachermelanie.com/category/grammar/>
8. <https://www.grammarly.com/blog/category/handbook>
9. <https://www.britishcouncil.in/english/learn-online>
10. <http://learnenglish.britishcouncil.org/en/content>
11. <http://www.talkenglish.com/>
12. [language-labsystem.com](http://www.language-labsystem.com)
13. www.wordsworthelt.com



BHARTI VISHWAVIDYALAYA, DURG

Semester: Diploma 1st sem

Branch: Common to all Branches

Subject: Applied Maths – I

Course Code: DE00102

Total Marks in End Semester Exam: 70

Min. Marks - 28

Unit – 1

Algebra

Concept and principles of determinants. Properties of determinants Computation of Mean and R.M.S. Value General equation of second degree, Nature of roots, Quadratic Equation, Formation of Equation Class- I, II, III, IV.

Unit – 2

Differential Calculus

Basic Trigonometry, Multiple and sub multiple angles, Functions and Limits, Independent and dependent variables, Different types of functions, Concept of Limit and its evaluation, Differentiation of elementary functions, Differentiation of Algebraic, Trigonometric, Exponential and Logarithmic functions, Differentiation of sum, product, quotient of two functions.

Unit – 3

Applications of Differential Calculus

Second order derivatives—Second order derivatives (without examples), Equation of Tangent and Normal, Equation of Tangent and Normal for functions of one variable only Maxima and minima, Maxima and minima for functions of one variable only.

Unit – 4

Co-ordinate Geometry

Various forms of straight lines, Co-ordinate systems, slope point form, two point form, Distance between two points, division of a line segment, Two points intercepts form, general form, Perpendicular distance from a point on the line, perpendicular distance between two parallel lines, *Components of Vector.*

Conic sections: Definition, standard forms, General equation, Center and radius of a circle, Focus, axis, directrix, latusrectum and vertex of parabola and ellipse.

UNIT – 5



Fundamentals of Statistics

Frequency distribution and central tendency, Introduction, graphical representation of frequency distribution, Central tendency, mean, median, frequency distribution and mode, Dispersion and deviation, Measure of dispersion, Range, quartile deviation, Standard deviation, root mean square deviation, Variance and coefficient of variance, Variance and coefficient of variance.

Books:

1. Advanced Engineering Mathematics Krezig, Ervin Wiley Publ., New Delhi 2014, ISBN: 978-0-470-45836-5.
2. Advanced Engineering Mathematics H. K. Das S. Chand & Co, New Delhi ISBN: 9788121903455.
3. Higher Engineering Mathematics B. S. Grewal Khanna Publ., New Delhi 2015, ISBN: 8174091955
4. Engineering Mathematics, Volume 1 S. S. Sastry PHI Learning, New Delhi 2009, ISBN: 978-81-203-3616-2
5. Fundamentals of Mathematical Statistics S. C. Gupta S. Chand & Sons 2014

Open source software and website address:

1. www.scilab.org/ -SCI Lab
2. www.dplot.com/ -DPlot
3. www.allmathcad.com/ -MathCAD
4. www.wolfram.com/mathematica/ - MATHEMATICA
5. www.easycalculation.com



BHARTI VISHWAVIDYALAYA, DURG

Semester: Diploma 1st sem

Branch: Common to all Branches

Subject: Applied Physics

Course Code: DE00103

Total Marks in End Semester Exam: 70

Min. Marks - 28

Units, Measurement and Error analysis

Unit of physical quantity, Fundamental and derived unit, Unit system, CGS, MKS and SI, Advantages/ disadvantages of SI unit system, Seven basic and Supplementary units. Dimensional Analysis, Dimensional formula and equations. Applications of Dimensional equations. Numerical problems on Dimensional analysis. Measurement, Accuracy, Precision and Errors, Absolute, Relative and percentage Error. Significant figures and rounding off.

Unit – 2

Motion, Force and General Properties of matter

Motion, Newton's Law of Motion, Equation of Motion, Force, Types of Forces, Conservative and non-conservative forces, Frictional Forces, Limiting static and dynamic friction. Centripetal and centrifugal force and Their illustration. Gravitational Force 'G' and 'g' and their interrelation, Factors affecting 'g', Elasticity, Hooke's law, Elastic limit and elastic fatigue, Moduli of elasticity's, Young's modulus, Bulk Modulus, Shear modulus of rigidity, Surface Tension, Molecular force, Surface energy, effect of temperature, Cohesive and adhesive force Excess pressure and its illustration, rise of liquid in capillary tube, Viscosity Coefficient of viscosity, Newton's law of viscosity Streamline and turbulent flow, Reynolds number, Poiseuille's equation(no derivation of formula), Stoke's law and their applications.

Unit – 3

Optics, optical instruments and optical fibers

Reflection, Reflection of Light, Types of Reflection, Refraction Laws of, Refraction Lenses and combination of lenses, Absolute and relative, refractive index, Refraction through prism, Angle of minimum deviation and its relation, Total internal reflection of light, Critical angle. Applications of TIR, Optical fiber, NA of Optical fiber, Optical instruments, Simple and Compound microscope, Spectrometer, Electromagnetic Spectrum, Pure and Impure spectrum, Visible Range.



Unit – 4

Electrostatics, Magnetism and Current Electricity

Electrostatics: - Electric Charge, Coulomb's Law, Electric Field, Potential, Potential Difference between Two Points, Equip- potential Surfaces, Types of dielectrics and dielectric Strength Capacity, Units, Principle of Capacitor, Factors Affecting Capacity, type of capacitors,

Magnetism: - Magnetic lines of force, lines of induction.

Current Electricity, Resistance, Specific resistance, Series and parallel combination of resistance, Internal resistance of a cell, Potential difference and emf of a cell, Combination of cells in series and in parallel. Simple applications of Wheatstone bridge, Meter Bridge and Potentiometer, Electrical power.

UNIT – 5

Modern Physics

Photoelectric effect, Laws of photoelectric emission, Photoelectric equation and threshold frequency, Photo cell, X-rays Production of X rays, properties & uses, Laser, Spontaneous and stimulated emission, population inversion, pumping scheme and active system Ruby Laser and semiconductor laser, Ultra-sonics, Frequency range, Methods of production Magnetostriction & Piezo electric method, Properties of ultra- sonics, Applications of ultra- sonics.

Books:

1. Fundamentals of Physics Halliday, David; Resnik, Robert and Walker, Jearl John Wiley and sons Tenth edition 2013.
2. The Feynman Lectures on Physics Feynman P. Richar, B. Leighton Robert Sands Matthew Pearson Education India First edition 2012.
3. University physics Young Hugh, Freedman Roger Pearson Education India Thirteenth Edition 2013

Open source software and website address:

1. Some relevant Experiments: <http://cdac.olabs.edu.in>
2. VernierCalipers:<http://www.tutorvista.com/physics/animations/vernier-callipers-animation>



BHARTI VISHWAVIDYALAYA, DURG

3. Screw gauge: www.notesandsketches.co.uk/Measuring_Tools_Small.swf
4. <http://www.stefanelli.eng.br/en/virtual-vernier-caliper-simulator-05-millimeter>.
5. Photoelectric effect: <http://vlab.amrita.edu/?sub=1&brch=195&sim=840&cnt=1>.
6. Deflection magneto meter: http://emvau.vlabs.ac.in/Deflection_Magnetometer/.
7. Laser: <https://spaceplace.nasa.gov/laser/en/>



BHARTI VISHWAVIDYALAYA, DURG

Semester: Diploma 1st sem

Branch: Common to all Branches

Subject: Applied Chemistry

Course Code: DE00104

Total Marks in End Semester Exam: 70

Min. Marks - 28

Unit – 1

Atomic Structure and Chemical Bonding

Atomic Structure Electronic structure of atoms, Discovery of electrons, protons and neutrons. Rutherford model and Bohr's – Burry scheme of distributions of electrons. Heisenberg's uncertainty principle, Quantum numbers, sub energy level Distribution of electrons in sub- shells and concept of Electronic configuration of atoms, Auffbaus's rule, Pauli's exclusion principle. Hund's rule of maximum multiplicity. Chemical Bonding, *Types of Chemical Bonding, and it's Application*, Hydrogen bonding.

Unit – 2

Water Treatment

Hardness: Types of Hardness, Determination of hardness using EDTA method, Hard water Boiler Problems, Boiler corrosion, caustic embrittlement, priming and foaming, scales and sludge's.

Water softening: lime soda process, Hot lime soda process, Cold lime soda process, Zeolite process, I-ion exchange process, Caution exchange An-ion exchange, *Advance Techniques of Softening*, Municipal Water, Treatment, Sedimentation Coagulation Filtration Sterilization BOD & COD

Polymer: Classification of polymer, Types of rubber, Natural and, synthetic, Processing of natural rubber. *Types of Synthetic rubber*, Properties and applications of Buna-N, Neoprene.

Unit – 3

Electrochemistry and Batteries

Conductance: Nature of solute, Nature of solvent, Temperature, Concentration or dilution, Electrical conductance in metals and electrolytes, specific conductance, equivalent conductance, cell constant. Electrodes: Hydrogen electrode, calomel electrode glass electrode.

Batteries: Type of batteries with examples Primary battery, Secondary battery, *Their*



BHARTI VISHWAVIDYALAYA, DURG

Uses, Electrical Insulator and thermocouple alloy, Electrical insulators: Classification and example Thermocouple alloy: Composition and characteristics platinum /rhodium and its application.

Unit – 4

Metallurgy

Metallurgy: Mineral, Ore, Gangue, Flux, Slag. *Metallurgical processor iron and Uses.* Metal Alloys: Properties of metals, aluminum, tungsten, platinum nickel. *Uses of Metal Alloys*, Ferrous alloys: Low carbon Medium carbon High carbon steels. Non-ferrous alloy: Brass, Bronze, *Application of Steel*, Tin man Solder Woods metal. Cement: Portland cement, Constituent Setting and Hardening, *Protection of Cement from Corrosion.*

Unit – 5 Fuels and Combustion

Fuel: Calorific value and ignition temperature, classification. Solid fuels: Coal, Classification and composition, proximate analysis, Ultimate analysis, Bomb Calorimeter. Carbonization of coke by Otto Hofmann's oven. Liquid fuels: Fractional distillation of crude petroleum, Boiling range, Composition and properties. Knocking, Cracking, Octane number and Cetane number. Gaseous fuels: Biogas, LPG, and CNG, *Application of Fuel.* Lubricants, Paints and Varnishes: Lubricant-Types, Liquid, Solid, Semisolid Theory of lubrication, Properties of a good lubricant Flash and Fire Point, Pour point and cloud point. *Application of Lubricant, Paints and Varnish, Constituents, Properties and uses.*

Books:

1. Engineering Chemistry, Agarwal, Shikha, Cambridge university press; New Delhi, 2015.
2. Engineering Chemistry Dara, S. S. and Dr. S. S. Umare S. Chand Publication, New Delhi, 2015.
3. Engineering Chemistry, Jain & Jain, Dhanpat Rai and sons; New Delhi, 2015.
4. Engineering Chemistry Dr. Vairam, S. Wiley, India Pvt. Ltd., New Delhi, 2013.
5. Chemistry for Engineers, Agnihotri Rajesh, Wiley India Pvt.Ltd. 2014.

Open source software and website address:



BHARTI VISHWAVIDYALAYA, DURG

1. www.chemguide.co.uk/atommenu.html (Atomic structure and chemical bonding)
2. www.visionlearning.com (Atomic structure and chemical bonding)
3. www.chem1.com (Atomic structure and chemical bonding)
4. <https://www.wastewaterelearning.com/elearning/> (Water Treatment)
5. www.chem1.com/acad/webtext/elchem/ec6.html (Electrochemistry and batteries)
6. [www.em-ea.org/guide%20books/book 2/2.1%20fuels%20and%20combustion.pdf](http://www.em-ea.org/guide%20books/book%202/2.1%20fuels%20and%20combustion.pdf)
(Fuel and Combustion)
7. www.chemcollective.org (Metals, Alloys)
8. www.wqa.org(Water Treatment)



BHARTI VISHWAVIDYALAYA, DURG

Semester: Diploma 1st sem

Branch: Common to all Branches

Subject: Computer Fundamentals and Applications

Course Code: DE00105

Total Marks in End Semester Exam: 70

Min. Marks - 28

Unit – 1

Basics of Computer System

Basic building block of Computer. Central Processing Unit (CPU), Control Unit, Arithmetic logic Unit (ALU), Memory Unit, Input Output Units, Word, ASCII, BCD, EBCDIC, UNICODE Concept of Hardware and Software, System software & Application Software, Operating system Concepts, Purpose and its Functions Operations of Windows OS, Operations of Windows OS, *Operation on* file and folders, Copy file, Rename and Delete of files and folders, Search files and folders, Install Application, Create shortcut of application on the desktop Windows OS Utilities Windows accessories Utilities Control Panel, Taskbar.

Unit – 2

Word Processing

Overview of Word processor, Basics of Font, Casechanging options, working with Text, *Opening and closing documents*, Formatting Paragraphs Lists Setting, Line spacing Page settings, Margins Setting, Header and Footer Spelling and Grammatical checks, Table and its options, Merging and Splitting cells, Inserting Pictures from Files.

Unit – 3

Spread sheet/Data Analysis & Chart Presentation

Introduction to data, cell address, Excel, Data Types, Concept of hyperlink Introduction to Formatting Number, Text, Formatting Date & Time, Formatting Concept of Workbook, *Forward and functions*, Common Excel Functions, Math & Trig Functions such as Sum, Round, Sqrt, Powered. Statistical Function such as Average, Min, Max, etc. Date & Time. Logical Functions such as IN, AND, OR etc. Text Function such as Upper, Lower Types of Graphics, Word Art, Auto Shapes, Images, Introduction to charts, Overview of different types of Charts. Printing in spreadsheet, Print Area, Header & Footer, Page Setup options.



Unit – 4

Multimedia Graphic Presentation

Introduction to Multimedia *and* Graphics. Starting a New Presentation Files, Saving work, Creating new Slides Work with textboxes, Adjusting line spacing, Formatting text boxes, Create new Slides, Introduction to Formatting, Change a slides Layout, Applying a theme, Changing the background, Formatting bulleted and numbered list, Styles Work with Fonts, Change the font, font size, font color, Creating and managing custom font theme & Color, Slides Master, Slide Sorter, Word Arts, Selecting, deleting, moving, copying, resizing and arranging objects, working with drawing tools, Find and replace text, Correcting your spelling, Use Tables Creating a new Table, Work with Video, Link to a video, Size a video, Use Animation, Sound & Effects, Creating hyperlinks, using action buttons.

Unit – 5

Basics of Internet & Cloud Computing

Types of Networks LAN, MAN, WAN Intranet, *Concept of Internet, application of Internet, www, Web browser software*, VPN, Wi-Fi, Bluetooth, switches Brief of Internet Connectivity Devices and Services Dial up, Leased line, DSL Broadband, Modem, Chat, Video conferencing, File Transfer Protocol, Web Browsers URL, Web Site, Search Engines Introduction to Virus& Antivirus Virus & its type, Antivirus Firewall Overview of Cloud Computing and *troubleshooting*.

Books:

1. Computer Fundamentals Goal, Anita, Pearson Education, New Delhi, 2014, ISBN-13: 978-8131733097.
2. Computer Course, Ravi Kant Taxali, Tata McGraw Hills. New Delhi. Year 2014 or latest.
3. Fundamentals of computers, V. Raja Raman, Neeharika Adabala, PHI 6th Edition 2014 or latest.
4. Computer Basics Absolute Beginner's Guide, Windows 10 Miller, Michael, QUE Publishing; 8th edition August 2015, ISBN: 978-0789754516 or latest.
5. The Internet Book, Douglas Comer Prentice Hall, Year 2007 or latest.
6. Microsoft Office 2010: On Demand Johnson, Steve Pearson Education, New



BHARTI VISHWAVIDYALAYA, DURG

Delhi India, -2010. ISBN: 9788131770641 or latest.

7. OpenOffice.org for Dummies Leets, Gurdy, Finkelstein Ellen, Mary Leets Wiley Publishing, New Delhi, 2003 ISBN: 9780764542220 or latest.

Open source software and website address:

1. Fundamentals of computers- V. Raja Raman,
Neeharika Adabala https://books.google.co.in/books?id=rGjkbQAAQBAJ&dq=Fundamentals+of++computer&source=gbs_navlinks_s
2. Computer course, Ravi Kant Taxali-
https://books.google.co.in/books/about/COMPUTER_COURSE.html?id=PfHfdSmNBkC&redir_esc=y
3. Computer Fundamentals Tutorials-
https://www.arstecb.com/book_argument/com_fun.pdf
4. Computer fundamentals, P. K. Sinha <http://www.edutechlearners.com/computer-fundamentals-p-k-sinha-free-pdf/>
5. Microsoft office set by step Joan Lambert and Curtis Frye
<https://ptgmedia.pearsoncmg.com/images/9780735699236/samplepages/9780735699236.pdf>
6. Open Office Suit- <http://www.openoffice.us.com/download-openoffice-free.php>
7. MS Office: <https://www.microsoft.com/en-in/learning/office-training.aspx>
8. Open Office Training: <http://www.tutorialsforopenoffice.org/>
9. Star Office- https://s3-ap-southeast-1.amazonaws.com/r4ltue295xy0d/Special_Edition_Using_StarOffice_6_0.pdf
10. Typing Master 10 in English for Windows: <http://www.typingmaster.com/typing-tutor/free-download.html>
11. Hindi Typing Tutor and Master <http://www.hinditypingtutor.com/>



BHARTI VISHWAVIDYALAYA, DURG

Semester: Diploma 1st sem

Branch: Common to all Branches

Subject: Applied Physics Lab

Course Code: DE00106

Max. ESE Marks : 35

Min. Marks : 14

List of Practical:-

1. Vernier calipers: Stainless steel body, Range: 0-150 mm, Resolution: 0.1 mm
2. Screw gauge: Stainless steel spindle and ratchet top brass body with satin chrome finish. Graduated to read up to 25 mm in 0.01 mm divisions with screw pitch of 0.5 mm, ratchet lock nut
3. Speedometer: Brass double disc superior quality, stainless steel legs and screw 1/100 mm pitch each.
4. Pendulum apparatus for determination of 'g': 200 mm diameter metal wheel mounted with fixed stand and a meter scale, stop watch to measure time. steel case fly back action least count 1/10th or 1/5th of second
5. Stoke's Law apparatus: Glass tube (~1-inch diameter and length ~ 1 m) with stand, timer, steel sphere, glass beads
6. Surface tension set up: Travelling microscope with horizontal and vertical movement (LC 0.001 cm), capillary tube, beaker, pin fixed on adjustable stand
7. Glass slab: Rectangular, all sides polished, made from slightly greenish glass free from bubbles, 75*50*18 mm
8. Glass Prism: Equilateral or right angled, from bubble free boro crown glass 38 x 38
9. Ohm's law apparatus: Box type with D.C meter to verify ohm's law with fitted ammeter & voltmeter
10. Post Office Box: Complete set in polished wooden box, Split brass contact blocks holding precision cut, interchangeable plug having molded black fluted tops. Coils of constantan wire with 4 pair of ratio
11. Arms.
12. Meter Bridge (Wheatstone Bridge): Sun mica top, two gap type having lock type terminals with pencil jockey.
13. Deflection magnetometer: Wooden base length~ 1 m, magnetic compass, meter scale and magnets
14. Bar magnet: Alnico size 3"- 4"
15. Potentiometer: 10K Ohm 500mW Linear Slide Potentiometer. About 10 m wire of



BHARTI VISHWAVIDYALAYA, DURG

Manganin and constantan with high resistivity and low temperature coefficient stretched on a wooden board attached with a meter scale and pencil jockey.

16. Photoelectric apparatus: Includes photo cell, light sources, voltmeter, ammeter

17. Diode laser: Power 5 mW, randomly polarized



BHARTI VISHWAVIDYALAYA, DURG

Semester: Diploma 1st sem

Branch: Common to all Branches

Subject: Applied Chemistry Lab

Course Code: DE00107

Max. ESE Marks : 35

Min. Marks : 14

List of Major Laboratory Equipment and Tools:

1. Electronic balance, Scale range of 0.001g to 500g. pan size 100 mm; Response time 3-5 sec.; power requirement 90- 250 V, 10 watt.
2. Nephelometer, Auto-ranging from 20-200 NTU,+/- 2% of reading plus 0.1 NTU, power 220 Volts +/- 10% AC 50 Hz.
3. Conduct meter, Range 0-199.9ms; resolution 0.1ms/0.01ms/0.001ms/0.1 μ s/0.01 μ s; accuracy \pm 0.5% \pm 2 digits.
4. pH meter, Working range 0-14; resolution 0.1/0.01 pH; temperature compensation 0-1000 C.
5. Electric oven, inner size 18''x18''x18''; temperature range 100 to 2500 C. with the capacity of 40lt.
6. Muffle furnace, Temperature up to 9000C, digital temperature controller with an accuracy of +/- 30C.
7. Bomb calorimeter, Measurement unit J/kg, cal/gm, BTU/lb; temp. resolution 0.00010C or better; combustion bomb- halogen and acid resistant stabilized stainless steel; resolution 0.001kcal/gm; measurement range up to 40,000 J/gm.
8. Redwood viscometer-1, Suitable to operate at 220 volts AC mains with tap; stainless steel jet; cup cover; thermometer; electronic digital indicator ; controller etc.
9. Cleveland open cup, apparatus, Energy regulator-to regulate the rate of rise in, temperature; 220V; 50 Hz; single phase; AC supply.
10. Cloud and pore point apparatus, Energy regulator ,to regulate the rate of rise in, temperature,200V,50Hz, single phase, AC supply etc.
11. Fractional distillation assembly, Capacity 1.5 lt.



BHARTI VISHWAVIDYALAYA, DURG

Semester: Diploma 1st sem

Branch: Common to all Branches

**Subject: Computer Fundamental and
Application Lab**

Course Code: DE00108

Max. ESE Marks : 35

Min. Marks : 14

List of Major Laboratory Equipment, Tools& Software

1. Computer Network, LAN Cable, Router, Switch 30*2/Hub
2. Printer, Scanner, Plotter, Modem, Laser Printer, Scanner, Plotter, Modem
3. MS Back Office 2016 or latest, Office suit
4. Typing Master in English for Windows(Free download) Hindi Typing Tutor and Master(Free download), <http://www.typingmaster.com/typing-tutor/free-download.html> <http://www.hinditypingtutor.com/>
5. Open Office Suit Latest, Office suit
6. Internet Connectivity, Broad band/Leased Line
7. Anti-Virus Software & Firewall, Antivirus software And Firewall



BHARTI VISHWAVIDYALAYA, DURG

Semester: Diploma 1st sem

Branch: Common to all Branches

Subject: Seminar & Technical

Course Code: DE00109

Presentation (Listening, Reading & Speaking) Skills

Max. ESE Marks : 50

Min. Marks : 20

Unit – 1

Need of Learning to learn skills (Listening, Reading and Speaking), Methods of good study habits, Practice Loud reading, Practice Active Listening, Practice Speaking in Class (Group Discussion, Extempore, Debate, Role Play etc).

Unit – 2

Characteristics of good oral Presentation Ways of oral presentation Gestures Mannerism during oral Presentation Preparing Successful Presentations Making Effective Use of Visual Aids.

Books:

1. English Grammar in Use, Murphy Raymond, Cambridge Publications, 4th Edition
2. Living English Structure, Allen, Cambridge Publications, Fifth edition (2009).
3. Effective English with CD, Kumar, E. Suresh; Sreehari P.; Savithri J., Pearson Education, Noida, New Delhi, 2009 ISBN: 978-81-317-3100-0.
4. English Grammar at Glance, Gnanamurali, M., S. Chand and Co. New Delhi, 2011, ISBN: 9788121929042.
5. Elementary English Grammar and Composition Agarwal N. K., Goyal Brothers Prakashan, Latest Edition.

Open source software and website address:

1. <https://www.englishgrammar.org/>
2. <http://www.englishgrammarsecrets.com/>
3. <https://www.usingenglish.com/handouts/>
4. <http://learnenglish.britishcouncil.org/en/english-grammar>
5. <https://www.englishclub.com/grammar/>
6. <http://www.perfect-english-grammar.com/>
7. <http://www.englishteachermelanie.com/category/grammar/>



BHARTI VISHWAVIDYALAYA, DURG

8. <https://www.grammarly.com/blog/category/handbook>
9. <https://www.britishcouncil.in/english/learn-online>
10. <http://learnenglish.britishcouncil.org/en/content>
11. <http://www.talkenglish.com/>
12. [language-labsystem.com](http://www.language-labsystem.com)
13. www.wordsworthelt.com



BHARTI VISHWAVIDYALAYA, DURG

Scheme of Teaching and Examination

Diploma in Electronic & Telecommunication/Computer Science & Engineering

(Group – II)

Semester – II, Session – 2021–22

S. No.	Course Code	Course Titles	Scheme of Studies			
			L	P	T	Credit (L + T + P/2)
1	DE00201	Communication Skills-II	2	-	1	3
2	DE00202	Applied Maths-II	2	-	1	3
3	DE00203	Environmental Engineering & Sustainable Development	2	-	1	3
4	DE00204	Programming in 'C'	2	-	1	3
5	DE00205	Basic Electronics Engineering	2	-	1	3
6	DE00206	Programming in 'C' (Lab)	-	4	-	2
7	DE00207	Basic Electronics Engineering (Lab)	-	4	-	2
8	DE00208	Electronics Work Shop Practice (Lab)	-	2	-	1
9	DE00209	Seminar & Technical Presentation (Personality Development & Leadership) Skills	-	2	-	1
10	-	Library	-	2	-	-
11	-	Co-curricular & Academic Activity Societies	-	2	-	-
Total			10	16	05	21

L - Lecture,

T - Tutorial,

P – Practical



Scheme of Teaching and Examination

Diploma in Electronic & Telecommunication /Computer Science & Engineering

(Group – II)

Semester-II, Session – 2022–23

S. No.	Course Code	Course Titles	Scheme of Examination					
			Theory			Practical		Total Marks
			ESE	CT	TA	ESE	TA	
1	DE00201	Communication Skills-II	70	10	20	-	-	100
2	DE00202	Applied Maths-II	70	10	20	-	-	100
3	DE00203	Environmental Engineering & Sustainable Development	70	10	20	-	-	100
4	DE00204	Programming in 'C'	70	10	20	-	-	100
5	DE00205	Basic Electronics Engineering	70	10	20	-	-	100
6	DE00206	Programming in 'C' (Lab)	-	-	-	35	15	50
7	DE00207	Basic Electronics Engineering (Lab)	-	-	-	35	15	50
	DE00208	Electronics Work Shop Practice (Lab)	-	-	-	35	15	50
8	DE00209	Seminar & Technical Presentation (Personality Development & Leadership) Skills	-	-	-	-	50	50
Total			350	50	100	105	95	700

ESE: End of Semester Exam, CT: Class Test, TA: Teachers Assessment

Legend: PRA: Process Assessment, PDA: Product Assessment

Note:

- i. TA in Theory includes Sessional work (SW) and Attendance (ATT) with weightage of 70% and 30% of total respectively.
- ii. TA in Practical includes performance of PRA, PDA and Viva-Voce with weightage of 50%, 40% and 10% of total respectively.
- iii. 85% attendance is essential in theory & Practical classes to appear in examination.



BHARTI VISHWAVIDYALAYA, DURG

Semester: Diploma 2ND sem

Branch: Common to all Branches

Subject: Communication Skills – II

Course Code: DE00201

Max. ESE Marks : 70

Min. Marks : 28

Unit – 1

English Grammar, Auxiliary Verbs, Modifiers & Adverbial Phrases, Degree, Narration.

Unit – 2

Non-Verbal Communication Static features of Non Verbal Communication – Distance, Posture, Physical contact etc. Dynamic features of Non-Verbal Communication – Mannerism, Head & Hand movement, Eye to Eye contact, Facial expressions, Gestures.

Unit – 3

Paragraph & Letter Writing Paragraph writing. Letter writing Purposes of Letters Characteristics of a Letter Types of Business Letters -Applications for Job & Resume Writing-Letter of Enquiry-Letter for Order Placement-Letter of Complaints.

Unit – 4

Technical Report Writing: Report Writing, Characteristics of a Good Report, Types of Technical Report, General outline of Project Report, Progress Report of any assumed work, **Notice:** Purposes of Notices, Qualities of Notices, Format of Notice, Mail, Purposes of Mail and Format of Mail.

Books:

1. English Grammar in Use, Murphy Raymond, Cambridge Publications, 4th Edition
2. Living English Structure, Allen, Cambridge Publications, Fifth edition(2009)
3. Effective English with CD, Kumar, E. Suresh; Sreehari P.; Savithri, J., Pearson Education, Noida, New Delhi, 2009 ISBN: 978-81-317-3100-0
4. English Grammar at Glance, Gnanamurali M., S. Chand and Co. New Delhi, 2011 ISBN:9788121929042
5. A Course in Technical English, TTTI Bhopal
6. Elementary English Grammar and Composition, Agarwal N. K., Goyal Brothers Prakashan
7. Latest Edition.



8. A Study Guide on Communication Skills for Technical Students, Dr. Sumi Guha, Dr. Shameena Bano, Vaibhav Prakashan, 1st Edition, 2020 ISBN-978-93-89989- 25-0

Open source software and website address:

1. <https://www.englishgrammar.org/>
2. <http://www.englishgrammarsecrets.com/>
3. <https://www.usingenglish.com/handouts/>
4. <http://learnenglish.britishcouncil.org/en/english-grammar>
5. <https://www.englishclub.com/grammar/>
6. <http://www.perfect-english-grammar.com/>
7. <http://www.englishteachermelanie.com/category/grammar/>
8. <https://www.grammarly.com/blog/category/handbook>
9. <https://www.britishcouncil.in/english/learn-online>
10. <http://learnenglish.britishcouncil.org/en/content>
11. <http://www.talkenglish.com/>
12. [languageabsystem.com](http://www.languageabsystem.com)
13. www.wordsworthelt.com



Semester: Diploma 2ND sem

Branch: Common to all Branches

Subject: Applied Maths – II

Course Code: DE00202

Max. ESE Marks : 70

Min. Marks : 28

Unit – 1

Matrix

Introduction, Definition, Special Matrix, Addition and Subtraction of Matrix, Multiplication of Matrix, Transpose of a Matrix, Symmetric & Skew Symmetric Matrix, Ad-joint of a Square Matrix, Inverse of Matrix, Solution of simultaneous Linear equations, Rank of Matrix, Consistency of Linear System of Equations

Unit – 2

Integral Calculus

Simple Integration: Rules of integration and integration of standard functions, Methods of Integration: Integration by substitution, Integration by parts and Integration by partial fractions.

Unit – 3

Applications of Integral Calculus

Definite Integration, Simple examples, Properties of definite integral (without proof) and simple examples, Applications of integration: Area under the curve, Area between two curves.

Unit – 4

Differential equations

Differential equations of first order and first degree, Concept of differential equation, Order, degree and formation of differential equation, Solution of differential equation, Variable separable form, Homogeneous Differential Equations, Linear differential equation.

Unit – 5

Numerical Solutions of Equations

Introduction of algebraic and transcendental equations, Bisection method, Regula Falsi method, Newton Rapson's method, Introduction to Numerical integration, Trapezoidal rule, Simpson's one third rule, Simpson's three eighth rules.



Books:

1. Advanced Engineering Mathematics, Krezig, Ervin Wiley Publ., New Delhi, 2014, ISBN: 978-0-470-45836-5.
2. Advanced Engineering Mathematics, H. K. Das, S. Chand & Co, New Delhi, ISBN: 9788121903455.
3. Higher Engineering Mathematics, B. S. Grewal, Khanna Publ., New Delhi, 2015, ISBN: 8174091955.
4. Engineering Mathematics, Volume – 1, S. S. Sastry, PHI Learning, New Delhi, 2009, ISBN: 978-81-203-3616-2.
5. A text book of Engineering Mathematics, Dutta, D, New age International publications, New Delhi, 2006, ISBN: 978-81-24-1689-3.
6. GettingStarted with MATLAB-7, Pratap Rudra, Oxford University Press, New Delhi, 2009, ISBN: 0199731241.

Open source software and website address-

1. www.scilab.org/ -SCI Lab
2. www.dplot.com/ -DPlot
3. www.allmathcad.com/ -MathCAD
4. www.wolfram.com/mathematica/ - MATHEMATICA
5. www.easycalculation.com



Semester: Diploma 2ND sem

Branch: Common to all Branches

Subject: Environmental Engineering and Course Code: DE00203

Sustainable Development

Max. ESE Marks : 70

Min. Marks : 28

Unit – 1

Water pollution and Air pollution

Introduction to environment and environment pollution, Water pollution Introduction, sources of water pollution, *Hydrosphere, Natural water* classification of water pollutants and adverse effect of water pollution, control of water pollution, Physical and chemical standard of domestic water as per Indian standard. Air pollution Introduction, *Atmospheric composition, Energy balance* Sources of air Pollutants, classification of air Pollutants, Effect of air pollution on human, plant, and animal, Air monitoring system and air pollution control.

Unit – 2

Soil, Noise, Thermal and Nuclear pollution

Soil and soil profile, soil pollution introduction, *Lithosphere*, sources of soil pollution, adverse effect of soil pollution, control measures of soil pollution, Noise pollution introduction, measurement of noise and acceptable noise level, sources of noise pollution, effect of noise pollution, control of noise pollution. *Difference between sound and noise* Thermal pollution introduction, effects of thermal pollution causes and control. Radioactive pollution introduction, sources of radioactive pollution, adverse effects of radioactive pollution, control of radioactive pollution.

Unit – 3

Sustainable Development and Clean technologies

Sustainable Development: Concept of sustainable development, *Elements of sustainable development* Natural resources, a-biotic and biotic resources, Principles of conservation of energy and management, Need of Renewable energy, Growth of renewable energy in India.

Clean Technologies Introduction: Clean technology, Types of Energy, Conventional Energy Sources, Non-conventional Sources of Energy, Recycling pollution control.

Solar Power: Features of solar thermal and PV systems, Types of solar cookers and solar water heaters, Hydel Energy and its advantages, Wind energy –advantages. Biomass energy,



Types of Biomass Energy Sources, Energy content in biomass of different types of Biomass conversion processes.

Unit – 4

Environment Impact Assessment (EIA)

Public Participation in EIA, *Object of EIA*, *Component of EIA*, EIA documentation, Case studies on EIA, EIA scope & steps, EIA process, EIA report *and documentation*, EIA Gazette notification, EIA action plan, EIA implementation, EIA directives follow-ups.

Unit – 5

Social Issues and the Environment

Water conservation, *Objective of water conservation*, *Methods*, Rain water harvesting, Watershed management, Acid rain *Causes and sources* and its effect, Climate change, Greenhouse effect, Depletion of Ozon layer, and effect of Ozon layer depletion, Global warming and measures against global warming.

Solid waste management: causes, effects and control measures of urban and industrial waste, importance of 3R's in waste management. *Pyrolysis* Environment protection Act 1986: importance and objective

Books:

1. Environmental studies, Dr. Suresh K. Dhameja, S. K. Kataria and sons, 2012.
2. Energy, Environment Ecology & Society, Dr. Surinder Deswal, Dhanpat Rai & sons, 2014.
3. Environment & Ecology, Dr. Piyush Kant Pandey, Sun India Publication, 2009.
4. Energy and sustainable development, P. S. Ramakrishnan, National Book Trust, 2014.
5. Our Environment (Hindi Textbook), M. K. Goyal, Agrawal publications, Agra, 2013.

Open source software and website address:

1. www.nptel.ac.in
2. <https://swayam.gov.in>



Semester: Diploma 2ND sem

Branch: Common to all Branches

Subject: Programming in 'C'

Course Code: DE00204

Max. ESE Marks : 70

Min. Marks : 28

Unit – 1

Introduction to 'C' Programming

History of C, Definition, Characteristics. Program logic development Algorithm- Definition, Characteristics pseudo Codes, Symbols of Flowchart, Limitation of flowchart, Basic structure of 'C' Program with examples. Data Concepts- Character set, C Tokens, Data Types- data type conversion, Operators and its types. Input/output Functions- printf(), scanf(), getch(), putchar(), getchar().

Unit – 2

Decision making and branching statements

Introduction of decision making statements in 'C', Decision making with IF statement, Simple IF statement, The IF.... ELSE statement, Nesting of IF.... ELSE statement, The ELSE IF ladder, The Switch statement, The ? : Operator, GOTO statement. Program related decision making.

Unit – 3

Structured loop control statements

Introduction, the WHILE Statement, the DO...WHILE Statement, The FOR statement, The BREAK and CONTINUE statement. Input- paten printing programs.

Unit – 4

User-defined Function

Concept and need of functions, Types of function, Library functions: Math functions, String handling functions, other miscellaneous functions.

Unit – 5

Single Dimensional Array in 'C'

Declaring and initializing One-Dimensional Array, Type of array, Array Operations- Insertion, Searching, deletion, string operation, Concatenation of two strings, Pointer: definition, array with pointer, chain pointer.



Books:

1. Programming in ANSI C, E. Balaguruswami, Tata McGraw-Hills publication, Latest Edition.
2. Programming with ANSI and Turbo C, Ashok N. Kamthane, Pearson publication, Latest Edition.
3. Let us 'C', Yashavant Kanetkar, BPB publications, Latest Edition.

Open source software and website address:

1. 'C' programming: <http://www.programiz.com/c-programming>
2. 'C' programming Language: <http://www.w3schools.in/c-programming-language/intro/>
3. 'C' Language: beginnersbook.com
4. Learn 'C' online: <http://www.learnonline.com>



Semester: Diploma 2ND sem

Branch: Common to all Branches

Subject: Basic Electronics Engineering

Course Code: DE00205

Max. ESE Marks : 70

Min. Marks : 28

Unit – 1

Semiconductor Diode

pn-Junction diode: working, formation of depletion layer, construction, symbol and equivalent circuits of pn- Junction diode. Barrier potential voltage, forward and reverse biasing, V-I characteristics of diode, Diode current equation, Static and Dynamic resistance, Diode. Diode capacitance, other diode like LED, photo diode , verector diode.

Unit – 2

Rectifiers and Filters

Need for rectification, rectifier Parameters, PIV, Ripple factor, Efficiency, Peak Inverse Voltage (PIV), Transformer Utilization Factor (TUF) of rectifiers, Types of rectifier: Half Wave Rectifier, Full Wave rectifier, Center taped and Bridge type full wave rectifier Filter Circuits: L-filter, C-filter, LC- filter, CLC- filter , Ripple factor with filter ,Comparison of all rectifiers, Block diagram of D.C. power supply

Unit – 3

Diode Circuits

Zener diode: working, construction and equivalent circuits of Zener diode, Zener and avalanche breakdown phenomenon, Zener diode as voltage regulator, Charterstics.

Clipper: Function of clipper circuit, circuit diagram, types of clipper :positive and negative clipper Circuits , Series and Parallel clipper.

Clamper: Function of clamper, types of clamper, positive and negative clamper circuits. Applications of clipper and clamper circuit.

Unit – 4

Bipolar Junction Transistor (BJT) and Field effect transistor (FET)

BJT: Working, types of BJT ; NPN and PNP, construction and operation of NPN and PNP transistor, base width modulation Modes of operation: active, saturation and cutoff, current amplification factor β and α relation between α , β and γ . Transistor biasing: need for biasing,



types of biasing, base resistor biasing, base collector biasing, voltage divider biasing, thermal runaway Transistor configurations: Common Emitter (CE), Common Base (CB) and Common Collector (CC) configuration circuit, working and input and output characteristics, gain, amplification factor

Field Effect Transistor (FET): Working, construction, input and output characteristics, drain current, pinch-off voltage, FET as VDR, Comparison between BJT and FET.

Unit – 5

Introduction to Operational Amplifier (Op-Amp)

Basics of differential amplifier, Working principle, input and output characteristics, amplifier, different modes of operation,

Basics of Op-Amp: OP-AMPIC-741, functional block diagram, Ideal characteristics, virtual ground, configurations of working: inverting and non-inverting, parameters: I/O resistance, gain, slew rate, bandwidth, power, various IC packages, identification of specifications from data sheet Applications op-amp: Summing, multiplier, and divider amplifier, integrator and differentiator, Log and Anti-Log amplifier, instrumentation, oscillators. Typical values of parameter for IC $\mu A741$.

Books:

1. Basic Electronics & Linear Circuits, Bhargava N. N.; Kulshreshtha D.C.; Gupta S. C., Tata McGraw Hill; New Delhi, IInd edition, 2013, ISBN13: 9789383286607 .
2. Integrated Electronics Millman Jacob; Halkias Christo; Parikh Chetan D., Mcgraw Hill Education, India, IInd edition, 2011 ISBN: 9780070151420, 0070151423.
3. Op-amps and linear Integrated circuits, Gayakwad Ramakant A., PRENTICE HALL, India, 4th edition, 2002, ISBN- 13: 978-8120320581.
4. Linear Integrated circuits and Applications, Bakhshi U. A.; Godse A.P. and Bakshi A. V., Technical Publications, Pune, India SECOND edition, January 1, 2011, ISBN-13: 978-9350380055.
5. Electronic Devices and Circuit Theory, Boylestead Robert; Neshelsky Louis, Pearson Education, New Delhi, 10th edition, 2009, ISBN: 978-8131727003.
6. Electronics Principles, Malvino Albert; David Paul, McGraw Hill Education, New Delhi, ISBN: 978-0070634244.



7. Principles of Electronics, Mehta, V. K.; Mehta, Rohit S. Chand and Company, Ram Nagar, New Delhi-110 055,504, 2014, ISBN: 9788121924.
8. Basic Electronic Engineering, Baru V.; Kaduskar R.; Gaikwad S. T., David Paul, Dream tech Press, New Delhi, Education, New Delhi, 2015, ISBN: 9789350040126.

Open source software and website address:

1. <http://www.learnerstv.com/video/Free-video-Lecture-5079-Engineering.htm>
2. <https://www.allaboutcircuits.com/textbook/semiconductors/chpt-2/bipolar-junction-transistors>
3. <http://nptel.ac.in/courses/117103063/>
4. <https://www.youtube.com/watch?v=c1TA0pONnMs>
5. Clipper and Clamper:-<https://www.youtube.com/watch?v=rkP3xmDF1oA>
6. Clamper:- <http://ee.eng.usm.my/eeacad/arjuna/Electronic%20device%20lecture4.pdf>



Semester: Diploma 2ND sem

Branch: Common to all Branches

Subject: Programming in 'C' Lab

Course Code: DE00206

Max. ESE Marks: 35

Min. Marks : 14

List of Programs:

1. Write a program in 'C' to swap two numbers using third variables.
2. Write a program in 'C' to swap two numbers without using third variables.
3. Write a program in 'C' to convert a given number of days in terms of years, weeks and days.
4. Write a program in 'C' to check whether the given alphabet is vowel or not.
5. Write a menu driven program in 'C' to create calculate factorial, factors of number and palindrome of number.
6. Write a menu driven program in 'C' to convert Binary Number into Decimal and vice-versa.
7. Write a menu driven program in 'C' to print full pyramid and Floyd's triangle.
8. Write a program in 'C' to print even and odd values in a given range.
9. Write a program in 'C' to find the reverse of given number.
10. Write a program in 'C' to check whether the given number is palindrome or not.
11. Write a Program in 'C' using function to count of prime numbers between a given intervals.
12. Write a program in 'C' to Calculate power of a given number using user-defined function.
13. Write a program in 'C' to calculate a square root of a given number using user-defined function.
14. Write a program in 'C' to find Greatest Common Divisor of given numbers using function.
15. Write a menu driven program in 'C' to calculate area of triangle, circle, and rectangle.
16. Write a program in 'C' to search a given number in one dimensional array.



Semester: Diploma 2ND sem

Branch: Common to all Branches

Subject: Basic Electronics Engineering (Lab)

Course Code: DE00207

Max. ESE Marks: 35

Min. Marks : 14

List of Programs:

1. Test the performance of PN-Junction diode in the Forward and reverse biased condition.
2. Test the performance of the given LED Diode.
3. Test the performance of the given Photo Diode.
4. Test the input and output waveform of Half Wave Rectifier without filter with filter.
5. Test the input and output waveform of full Wave center tapped rectifier without filter and with filter.
6. Test the input and output waveform of full Wave Bridge Rectifier without filter and with filter.
7. Test the performance of Zener diode.
8. Test the output of the given Zener voltage regulator.
9. Test the output waveform of Positive Clipper and Negative Clipper.
10. Test the output waveform of Positive Clamper and Negative Clamper.
11. Determine the current gain of CE configuration with the help of input output characteristics of CE Configuration.
12. Determine the current gain of CB configuration with the help of input output characteristics.
13. Determine the current gain of CC configuration with the help of input output characteristics.
14. Build and test the operation of BJT as a switch.
15. Bias the given NPN transistor in the active region by
16. Voltage divider biasing method.
17. Test the performance of the given FET.
18. Test the performance of the given Op-Amp IC in Inverting mode.
19. Build and test Op-Amp based summing amplifier.
20. Test the output of non-inverting amplifier.
21. Test the performance of Op-Amp based integrator and Differentiator circuit.



Semester: Diploma 2ND sem

Branch: Common to all Branches

Subject: Electronic Workshop Practice

Course Code: DE00208

Max. ESE Marks: 35

Min. Marks : 14

List of Major Laboratory Equipment and Tools:

1. Fire extinguisher, Mechanical foam type fire extinguisher with ISI mark (9 litter, B and C type fire)
2. Fire extinguisher, A, B, C portable type fire extinguisher with ISI mark. (2Kg)
3. Multimeter, Analog and Digital AC Voltage : 0-400 V, DC Voltage : 0-24 V AC Current : 0-100 A, DC Current : 0-20 A Resistance : 0 – 1 k ohm
4. Digital Multimeter, Digital Multimeter 3 and ½ digit with component tester
5. Cathode ray oscilloscope, (CRO), 50MHz, Dual trace, Dual beam, Inbuilt +-5 V supply, Component tester, Function Generator
6. Function Generator, 0-2 MHz with Sine, square and triangular wave output with variable frequency and amplitude.
7. Soldering Gun, Soldering Gun: 40Watts, Holding stand, Temperature Control, Power cord
8. Soldering Iron, Soldering iron, Flux for soldering and Solder filler material.
9. De-soldering Gun, De-soldering Gun: 80 Watts, output voltage 35 V
10. Consumable components, Resistors, Rheostat, Wire wound resistor, Carbon Film resistor, Carbon composition resistor capacitors, Paper Capacitor, Electrolytic Capacitor, Ceramic capacitor, Polyester Capacitor, Gang capacitor Diodes, Transistors, ICs, IC Sockets, General Purpose PCBs of different size, LEDs, Relays, Switches, Connectors, potentiometer fixed and variable, Connecting Wires, Soldering metal, Soldering Flux, De-soldering mesh.
11. Hand tool, Wire Cutter, Wire Stripper, screw driver, hammer, saw.

Books:

1. Introduction to Basic Manufacturing Process & Workshop Technology, Singh, Rajender, New Age International, New Delhi, 2nd Edition , Reprint2014, ISBN:978-81-224-3070-7.
2. Electronic Components Handbook, Vol-1, Lewis M. Clement, Keith Henney,



BHARTI VISHWAVIDYALAYA, DURG

Craig Walsh, Literary Licensing, LLC, Edition: 2013, ISBN: 9781258554682, 1258554682.

3. Principles of Electronics, Mehta V. K.; Mehta, Rohit S. Chand and Co. Ram Nagar, New Delhi-110, 055, 11th Edition, 2014, ISBN-13-9788121924504.
4. Electrical engineering materials and semiconductor devices, Gupta J. B., & Gupta, Renu.
5. S. K. Kiatar & sons, 2013, ISBN- 978-93-5014-300-1 or Latest edition.
6. Handbook of Electrical Engineering, Bhatia, S. L., Khanna Publication, 2012, or Latest edition.



Semester: Diploma 2ND sem

Branch: Common to all Branches

Subject: Seminar & Technical

Course Code: DE00209

Presentation (Personality Development & Leadership) Skills

Max. ESE Marks: 50

Min. Marks : 20

Unit – 1

Concept and meaning of personality, Characteristics/Qualities, Factors influencing personality, Need for desirable personality, Posture and Health, Good Health diet, Exercise, Personal Cleanliness, Sleep and Rest, Use of Cosmetics, Dress Code, Eye-Contact.

Unit – 2

Skills for a good Leader, Different Leadership Styles: Autocratic, Democratic, Ethical, Transformational, Team Leadership, Necessity of Team Work, Personally, Socially, Professionally and Educationally.

Unit – 3

Weighing Positives & Negatives in Group Discussion, Do's and Don'ts of Group Discussion, Initiating, continuing and concluding a Group Discussion, Principles of Time Management, Criteria governing Time Management, Prioritizing work.

Books :

1. How to achieve success and happiness, Beau Norton, Create Space Independent, Publishing Platform, Latest edition.
2. Living English Structure, Allen, Cambridge Publications, Fifth edition(2009).
3. The Quick and Easy Way to Effective Speaking, Dale Carnegie, Amazing Reads, 23 January 2018.
4. English Grammar at Glance, Gnanamurali, M., S. Chand and Co. New Delhi, 2011 ISBN: 9788121929042.
5. Elementary English Grammar and Composition, Agarwal N. K., Goyal Brothers Prakashan, Latest Edition
6. Covey Sean, Seven Habits of Highly Effective Teens, Covey Sean, Fireside Publishers, 1998.



7. How to win Friends and Influence People, Carnegie Dale, Simon & Schuster, New York 1998.
8. Thomas A Harris, I am ok, You are ok, Thomas A Harris, New York-Harper and Row, 1972
9. Emotional Intelligence, Bantam Book, 2006, Daniel Coleman, Bantam Book, 2006
10. Chanakya's 7 Secrets of Leadership, Pillai Radhakrishnan, Jaico Publishing House, ISBN: 9788184954012, 8184954018

Open source software and website address:

1. <https://www.englishgrammar.org/>
2. <http://www.englishgrammarsecrets.com/>
3. <https://www.usingenglish.com/handouts/>
4. <http://learnenglish.britishcouncil.org/en/english-grammar>
5. <https://www.englishclub.com/grammar/>
6. <http://www.perfect-english-grammar.com/>
7. <http://www.englishteachermelanie.com/category/grammar/>
8. <https://www.grammarly.com/blog/category/handbook>
9. <https://www.britishcouncil.in/english/learn-online>
10. <http://learnenglish.britishcouncil.org/en/content>
11. <http://www.talkenglish.com/>
12. [language-labsystem.com](http://www.language-labsystem.com)
13. www.wordsworthelt.com

Scheme of Teaching and Examination

Diploma in Computer Science & Engineering

Semester – III, Session – 2021–22

S. No.	Course Code	Course Titles	Scheme of Studies			
			L	P	T	Credit (L + T + P/2)
1	DE01301	Operating System with Linux	3	0	0	3
2	DE01302	Scripting Language (Python)	2	0	0	2
3	DE01303	Data Structure	3	0	0	3
4	DE01304	E – Commerce	2	0	0	2
5	DE01305	Digital Electronics	2	0	1	3
6	DE01306	Operating System with Linux (Lab)	0	4	0	2
7	DE01307	Scripting Language (Python) (Lab)	0	4	0	2
8	DE01308	Data Structure (Lab)	0	4	0	2
9	DE01309	Digital Electronics (Lab)	0	2	0	1
10	DE01310	NSS / SPORTS / YOGA / TECHNICAL PRESENTATION / LIBRARY ACTIVITIES	AS PER BHARTI VISHWAVIDYALAYA MINUTES 08 HOURS ARE ALLOCATED TO MENTIONED ACITIVITES			
Total			12	14	1	20

L - Lecture,

T - Tutorial,

P - Practical

Scheme of Teaching and Examination

Diploma in Computer Science & Engineering

Semester – III, Session - 2021-22

S. No.	Course Code	Course Titles	Scheme of Examination					Total Marks
			Theory			Practical		
			ESE	CT	TA	ESE	TA	
1	DE01301	Operating System with Linux	70	10	20	0	0	100
2	DE01302	Scripting Language (Python)	70	10	20	0	0	100
3	DE01303	Data Structure	70	10	20	0	0	100
4	DE01304	E – Commerce	70	10	20	0	0	100
5	DE01305	Digital Electronics	70	10	20	0	0	100
6	DE01306	Operating System with Linux (Lab)	0	0	0	35	15	50
7	DE01307	Scripting Language (Python) (Lab)	0	0	0	35	15	50
8	DE01308	Data Structure (Lab)	0	0	0	35	15	50
9	DE01309	Digital Electronics (Lab)	0	0	0	35	15	50
10	DE01310	Technical Presentation	0	0	0	0	50	50
Total			350	50	100	140	110	750

ESE: End of Semester Exam

CT: Class Test

TA: Teachers Assessment



Semester: Diploma 3RD sem

Branch: CSE

Subject: Operating System with Linux

Course Code: DE01301

Maximum Marks :- 70

Minimum Marks :- 28

Unit – 1

Operating System Concepts

Need of Operating System, Structure of Operating System, System Components, System Calls, System Structure, *Evaluation of OS*, Batch, Multiprogramming, Multitasking, Multiuser, Time Sharing, Real Time, and Operating System *Function and Services, Protection in OS*.

Unit – 2

Process & CPU Management

Process Concept: Programmers view of Process, Process State, Process Control Block and Process Scheduling, Scheduling, Schedulers, Scheduling Criteria, Scheduling Algorithms.

Deadlock: Basic Concepts, Deadlock Detection, Deadlock Prevention, Deadlock Avoidance, *Deadlock recovery, Bankers algorithm*.

Unit – 3

Memory Management

Need of Memory Management, Contiguous Allocation, Partitioned Memory Allocation, Fixed & Variable Partitioning, Swapping, Relocation, Protection and Sharing, Noncontiguous Allocation, Paging, Segmentation, Virtual Memory, Demand Paging, Page Replacement Algorithms, Thrashing.

Unit – 4

File Management

File Management, File Concept and Access Methods, User view of File System, Attributes and Operations, File System Design, Disk Space, Directory Structure, Disk Organization, Physical Structure, Logical Structure, *Addressing, Disk Scheduling*, Security and Protection Mechanism.

Unit – 5



Linux Basics

Overview of Linux, Installation and Upgrade, System Administration, Introduction to Shell and Commands: who, who am i, tty, pwd, cd, mkdir, rmdir, ls, cat, cp, rm, mv, wc, split, cmp, comm, diff, head, tail, grep, sort, ln, chmod, chown, chgrp, pr, lp, expr, man, help, pipes and I/O redirectors, tee, ps, Edit files with “vi” editor, Linux, Shell Concept, *Basic Shell Scripts*.

Books :

1. Operating System Concepts, James Peterson Wesley, Abraham Silberschatz, JOHN WILEY & SONS. INC, 2017 or latest.
2. Unix Concepts And Application, Sumitabha Das, MGH, 2017 or latest.
3. Operating systems, Dhamdhere, MGH, 2017 or latest.
4. Modern Operating System Andrew Tanenbaum, PHI, 2017 or latest.
5. Operating Systems, Sibsankar Halder, Pearson, Education, 2017 or latest.
6. Operating System, Milan Milenkovic, MGH, 2017 or latest.
7. Operating Systems conceptbased approach (3rdEdition), Dhananjay M., MGH, 2017 or latest.
8. Linux – Application and Administration, Ashok Kumar Harnal, TMH, 2017 or latest.

Open source software and website address:

1. Operating System concepts: http://nptel.iitm.ac.in/courses/Webcourse-contents/IISc-ANG/Operating%20Systems/New_index1.html.
2. Linux basics: www.freeos.com/guides/lsst .
3. Linux basics: www.linuxcommand.org/writing_asell_scripts.php .
4. Linux basics: www.distro.ibiblio.org/damnsmall/current/dsl-4.4.10-embedded.zip



Semester: Diploma 3RD sem

Branch: CSE

Subject: Scripting Language (Python)

Course Code: DE01302

Maximum Marks :- 70

Minimum Marks :- 28

Unit – 1

Introduction to Python Programming

Introduction of python programming, Features of Python, Application Of Python Working Mode, Interactive Mode, Script Mode, Key concept of Python, Variable and Data Types, Numbers, Sequences, Keywords, Operator, Relational, Logical, Assignment, Input and Output, raw input, input, print.

Unit – 2

Control Structure

Decision making statement, if else Statement, if-else-if statement, Control flow, *Introduction of Iterative Statement: while loop and its nesting, for loop, break, and continue statement.*

Unit – 3

Sequence, Dictionary & Built in Function

Sequence: List: create, access & update list, basic operation on list, built in function of list, Tuples: create, access & update, basic operation, Dictionary: Basic operation, Built in function & method, Calendar & Time function, Built in Function of Python Cmp, Range, Round.

Unit – 4

Function & File Handling

User defined function, need of user defined function, define and declare function, function with return, type and arguments, Introduction to module, Import module, From module, math and random module, Exception handling, Need of exception handling, raise, try, catch and finally.

Unit – 5

GUI Programming

Introduction to GUI programming, Need of GUI, Advantage of GUI, List of graphic



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library, Tkinter graphic library, Creating Window, label, button checkbox, Action on button click, text entry box, Layout Management using pack(), frame(), grid(), menu(), canvas(), create_line(), create_image(), Events-Capturing mouse, tkMessageBox, askyesno

Books:

1. PythonProgramming: Using Problem Solving Approach, Reema Thareja, Oxford University and Latest Edition.

Open source software and website address:

1. 'Python' : <https://www.python.org/downloads/>
2. 'Python' Tutorial: https://www.tutorialspoint.com/python_online_training/
3. 'Python' Tutorial: <https://wiki.python.org/moin/BeginnersGuide>
4. Learn 'C' online: <http://www.learnonline.com>



Semester: Diploma 3RD sem

Branch: CSE

Subject: Data Structure

Course Code: DE01303

Maximum Marks :- 70

Minimum Marks :- 28

Unit – 1

Introduction to data structure and Array in ‘C’

Introduction to data structure, Type of data Structure, Primitive and Non Primitive data Structure, Linear and Non Linear Data Structure, Declaring and initializing One Dimensional Array and array Operations Insertion, Searching, Multi-Dimensional Array and its Operations- Matrix operations, *Algorithm complexity and asymptotic notation.*

Unit – 2

Stack and Queue

Introduction to stack, Implementation of stack, Operations on Stack, Push, Pop, Application of Stack, Expression Evaluation, Infix to Postfix, Infix to Prefix, Recursion, Introduction to Queue, Types of queue, Single Ended Queue, Circular Queue, Double Ended Queue, Implementation of Queue, Application of Queue, *Priority Queue..*

Unit – 3

Searching and sorting

Introduction of searching, typing of searching, introduction of sorting, classification of sorting, comparison between searching and sorting.

Unit – 4

Linked List

Introduction of Linked List, node, next address, pointer, null pointer, Types of Linked List, Singly Linked List, Doubly Linked List, Circular Linked List, Operations on Linked List, Searching, Insertion, Deletion, Applications of Linked List.

Unit – 5

Graph and Tree

Definition of graph, Representation of graph, Adjacency Matrix, Incidence Matrix,



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Adjacency List, Introduction to Tree, Type of tree, Binary Tree, Binary Search Tree (BST), Operation on BST, Insertion, Deletion, Traversing.

Books:

1. Let us 'C', Yashavant Kanetkar, BPB publications, 2017 or latest.
2. Programming in ANSI 'C', E. Balaguruswami, TMH, 2017 or latest.
3. Programming in 'C', A.N. Kamthane, Pearson, 2017 or latest.
4. Programming with 'C', Schoums, Schoums series, 2017 or latest.

Open source software and website address:

1. Learning 'C' Programming- <https://www.programiz.com/c-programming#learn-c-tutorial>
2. 'C' Programming- <http://www.programmingsimplified.com/c-program-examples>
3. 'C' Programming- <http://www.c4learn.com/c-programs/>
4. Learning 'C' Examples & Tutorials-
https://www.tutorialspoint.com/learn_c_by_examples/index.htm
5. 'C' Programming Examples- <http://www.techcrashcourse.com/2014/10/c-program-examples.html>



Semester: Diploma 3RD sem

Branch: CSE

Subject: E – Commerce

Course Code: DE01304

Maximum Marks :- 70

Minimum Marks :- 28

Unit – 1

Introduction to E – Commerce

Definition of E-commerce, E commerce industry frames work, Type of E-commerce, inter-organizational E-commerce, intra-organizational E-commerce, consumer to business E-commerce, intermediaries and E-commerce, *benefit and limitation of E-Commerce.*

Unit – 2

Firewall and Transaction security

Firewall and Network Security, Type of Firewall, Firewall Security policy, Transaction Security, Type of online transaction, Requirement for transaction security, Cryptography, Symmetric key cryptography, Asymmetric key cryptography, *Digital certificate, Digital signature..*

UNIT – 3

Electronics Payment System (EPS)

Digital cash, properties of digital cash, Electronic cheque, properties of E–Cheque, Online credit card based System, *Types Of Online Payments Method*, secure electronic transaction (SET), Point of sale (POS) Net Banking M-Wallet, Advantage and disadvantage of EPS.

Unit – 4

E-commerce and Retailing

Changing retail industry dynamics, over building and excess capacity, demographics changes, consumer behavior, Mercantile model from consumer's perspective, distinct phases of mercantile model, pre-purchase preparation, purchase consumption, Post purchase Interaction, Management challenges in online retailing, retailing strategies, managing channel conflict, learn to price online products and services, The layout of design online Store.



UNIT – 5

Intranet and supply chain management (SCM).

Fundamental of supply chain, pull v/s push SCM, element of SCM, integrating function in supply chain, Managing retail supply chain, The Order Management Cycle (OMC), Supply chain application software, software for SCM, *E-Logistic*, intranet and network centric computing, *Web traffic and Traffic management*.

Books:

1. Electronic commerce A manager's guide, Ravi kalakota, Andrew B whinstone, Addison – Wesley, pearson, 1st edition,
2. Frontier of Electronic commerce, Ravi kalakota, Andrew B whinstone, Pearson, 1st edition.

Open source software and website address:

1. Tutorial of E-commerce https://www.tutorialspoint.com/e_commerce/index.htm
2. Lecture Notes on Ecommerce and www.vssut.ac.in/lecture_notes/lecture1428551057.pdf
3. E-Commerce Lecture Notes www.nptel.ac.in/courses/106108103/pdf/Lecture_Notes/LNm13.pdf
4. Ecommerce for beginners https://www.cdu.edu.au/centres/aflf/pdf/Ecommerce_for_beginners.PDF
5. eBooks of-E-commerce https://books.google.co.in/books?id=7UNqSnb52H4C&printsec=frontcover&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false



Semester: Diploma 3RD sem

Branch: CSE

Subject: Digital Electronics

Course Code: DE01305

Maximum Marks :- 70

Minimum Marks :- 28

Unit – 1

NUMBER SYSTEM and CODES

Use number systems and codes for various applications, Number systems, Conversion between different number systems, r 's and $(r-1)$'s complement of number, Binary Arithmetic operations : Addition, Subtraction, Multiplication and Division, Binary Codes Weighted and Un-weighted codes, Excess- 3 code, Gray code, Error Detection and Correction Code, Hamming code, BCD Code, ASCII code, *Conversion between different codes..*

Unit – 2

Logic gates and Boolean algebra

Logic Gates: basic gates, AND, OR, NOT, EX-OR, EX-NOR, Universal Gates: NAND, NOR, truth table, symbol, implement Basic Gate using Universal gate, Boolean algebra: Boolean theorems, De Morgan's Theorems, duality, Max - term, Min - term, Sum of product (SOP) and Product of Sum (POS) expressions, Simplify the Boolean functions, Simplify the Boolean functions using K- map method(up to 4 variables), *Digital logic circuit.*

Unit – 3

Combinational Circuits

Half Adder, Full Adder, Half Subtract., Full Subtractor, parallel adder, 4 bit binary adder, 4 bit binary Subtractor, BCD adder, Magnitude comparator(2, 3 and 4 bit), Encoder and Decoder: 4 I/P and 2 O/P encoder, 8 I/P and 3 O/P encoder, Octal to Binary and Decimal to BCD Encoder, Decoders: 3-Line to 8-Line Decoder, 8-4-2-1 BCD to Decimal Decoder, BCD to Seven Segment Decoder Multiplexer (Mux) and Demultiplexer (Demux): 2×1 , 4×1 and 8×1 , multiplexer, 1×2 , 1×4 and 1×8 demultiplexer, *applications of Multiplexers and Demultiplexers.*

Unit – 4



SEQUENTIAL CIRCUITS

Flip Flop - basic flip flop and latch, Clock, Set and Reset inputs to F/F, clock triggering - Positive & Negative clock Edge triggering, level triggering RS F/F, JK F/F, D F/F, T F/F, truth table, characteristic table or excitation table, Race around condition, Master Slave F/F, Counters: - Modules of a counter, Synchronous & Asynchronous counter, Ripple Counter, Up – down binary counter, Decade counter, BCD counter, Designing of counters, Register – Shift register, Serial in parallel out, Serial in Serial out, Parallel in Serial out, Parallel in Parallel out register, designing of register.

Unit – 5

CONVERTERS AND LOGIC FAMILIES

Digital to Analog converter (DAC): R- 2R DAC, Weighted resistor DAC, Analog to Digital converter (ADC), Counter type, ramp, Successive approximation, Flash type Logic Families – Digital IC specifications (threshold voltage, propagation delay, power dissipation, Fanin, Fanout, transition width, logic levels, Noise margin, speed power product, figure of merit), TTL, RTL, DTL, ECL, I²L and CMOS.

Books:

1. Digital Logic and Computer Design, Morris Mano, Pearson Education India service Pvt. Ltd., 2016, ISBN: 9789332542525.
2. Digital Electronics: Principle Devices and Applications, Anil K. Maini, John Wiley & Sons Ltd, 2007, ISBN: 9788126514663.
3. Digital Principles and Applications, Malvino & Leach, Tata Mc Graw-Hill, 8th edition, 2014, ISBN: 9789339203405.
4. Digital Electronic, Mamta Agrawal, Deepak Prakashan, 2016, ISBN-13:9788177762242.
5. Fundamental Digital Circuits, KUMAR, A. ANAND, Prentice Hal of India, 4th edition, ISBN: 9788120352681.
6. Modern Digital Electronics, R. P. Jain, Tata McGraw-Hill, 4th edition, 2009, ISBN: 9780070669116
7. Digital Circuits and Design, A. Arivazhgan, Vikash Publishing House, 2003, ISBN: 9788125914358.



8. Digital Electronics (Digital Logic Design), Sanjay Sharma, Kataria & Sons, 2010, ISBN: 9789350140468.
9. Digital Fundamentals, Floyd, Pearson, 10th edition, 2011, ISBN: 9788131734483
10. Digital Systems: Principles and Applications, Tocci Pearson, 10th edition 2009, ISBN: 9788131923289.

Open source software and website address:

1. <http://logos.cs.uic.edu/366/notes/ErrorCorrectionAndDetectionSupplement.pdf>
2. <https://www.youtube.com/watch?v=N8Yy0-4YMS4>
3. Full Subtractor:-<http://www.flintgroups.com/2012/10/half-subtractor-and-full-subtractor.html>.
4. Encoder and Decoder:-<http://www.edgefxkits.com/blog/encoders-and-decoders-truth-tables/>



Semester: Diploma 3RD sem

Branch: CSE

**Subject: Operating System with
Linux(Lab)**

Course Code: DE01306

Maximum Marks :- 35

Minimum Marks :- 14

List of Practical:

1. Install & test different types of Operating System & compare its features.
2. Execute who, who am i, tty, pwd, cd commands.
3. Modes of vi editor.
4. Execute mkdir, rmdir, ls, cat, cp, rm, mv, wc commands.
5. Creating and saving files using vi editor.
6. Create a shell script to print "Hello".
7. Create a Shell script to read and display content of a file.
8. Execute split, cmp, comm, diff, head, tail, grep, sort commands.
9. Perform Cursor movement commands in vi editor.
10. Create a Shell script to read from command line.
11. Execute chmod, man, help commands.
12. Create a Shell script to append content of one file to another.
13. Cut and paste commands in vi editor.
14. Execute Commands using pipes and I/O redirectors.
15. Find and replace commands in vi editor.
16. Create a Shell script to accept a string in lower case letters from a user, & convert to upper case letters.
17. Execute ps command with all options.
18. Create a Shell script to find numbers of characters, words & lines of a given input file.
19. Execute apt-get install, apt-get remove commands.
20. Create a Script to reverse a string and display it.
21. Create a Script to reverse a string and display it.
22. Create a Script to check a string is palindrome.

Course Code :

DE01307



Semester: Diploma 3RD sem

Branch: CSE

Subject: Scripting Language (Python)

Course Code: DE01307

Lab

Maximum Marks :- 35

Minimum Marks :- 14

List of Practical:

1. Write a program to create menu to simple interest, compound interest.
2. Write a program to convert a string to integer.
3. Write a program to convert a string to integer.
4. Write a program that ask user to entry his/her name, stores the name in variable called name and say hello to him/her.
5. Write a program to covert decimal number to binary and vice-versa.
6. Write a program calculate grade from give percentage like if >85 'A' > 70 to ≤ 85 'B' > 60 to ≤ 70 'C' > 45 to ≤ 60 'D'
7. Write a program to print the calendar of give date.
8. Write a program to print Armstrong number between given range using user defined function.
9. Write a program in Python to sort the element of two different lists and store sorted elements in third list.
10. Write a program in 'C' to find all prime factor of a given number.
11. Write a program to print

```
          *
        * * *
      * * * * *
```
12. Write a GUI program to calculate factorial using textbox, button & message box.
13. Write a menu driven program to display your college and faculty list with photograph.
14. Write a GUI program to calculate SPI of your 2 semester result.
15. Make a GUI program to calculate income tax of particular employee.



Semester: Diploma 3RD sem

Branch: CSE

Subject: Data structure Lab

Course Code: DE01308

Maximum Marks :- 35

Minimum Marks :- 14

List of Practical:

1. Develop a program in 'C' to search a given number in one dimensional array.
2. Develop a program in 'C' to print even & odd numbers in square matrix.
3. Develop a program in 'C' to concatenation two given strings.
4. Develop a program in 'C' that performs inverse of square matrix.
5. Develop a program in 'C' on to check whether a string is palindrome or not.
6. Develop a 'C' program to print forward diagonal, backward Diagonal and sum of diagonals of 3X3 square matrix.
7. Develop a 'C' Program Swap Numbers in Cyclic Order Using Pointer by passing parameters
8. Develop a 'C' Program to Find the Number of Vowels, Consonants, Digits and White space in a String
9. Develop a program in 'C' to show the concept of pointer to pointer.
10. Develop a 'C' Program to Add Two Complex Numbers by Passing Structure to a Function
11. Develop a 'C' Program to perform searching operation on Different type tree data structure.
12. Perform searching, insertion and deletion operation on different type of linked list.
13. *Develop c program to find the position of a target value within a stored array using binary search.*
14. *Develop a c program to sort a list of elements using the bubble sort algorithm.*



Semester: Diploma 3RD sem

Branch: CSE

Subject: Digital Electronics (Lab)

Course Code: DE01309

Maximum Marks :- 35

Minimum Marks :- 14

List of practical:

1. Implement and test 4bit binary to gray code.
2. Implement and test 4bit gray code to binary code.
3. Test the functionality of following Logic Gates: AND, OR, NOT, NAND and NOR Gates (For TTL logic gates and CMOS logic gates).
4. Implement and test the basic gates Using NAND gates.
5. Implement and test the Basic Gates Using NOR gates.
6. Simplify and implement the given Boolean functions using NAND gates.
7. Build and test half-adder and full-adder.
8. Build and test half and full subtractor.
9. Implement and test 2X1 multiplexer using AND and OR gates.
10. Build 4X1 multiplexer using 2X1 multiplexers.
11. Build and test BCD to seven segment decoder
12. Test the functionality of SR, D, JK and T Flip-flops.
13. Build and test binary Mod-4 synchronous and asynchronous counter.
14. Build and test Mod-8 up / down counter.
15. Test the output of the shift register (SISO, SIPO).
16. Build and test Mod-10 counter using D or T FF.
17. Test the input and output voltages of IC ADC0808.
18. Test the input and output voltages of ICDAC0808.

Scheme of Teaching and Examination

Diploma in Computer Science & Engineering

Semester – IV

S. No.	Course Code	Course Titles	Scheme of Studies			
			L	P	T	Credits (L + T + P/2)
1	DE01401	Object Oriented Programming using C++	2	0	0	2
2	DE01402	Computer Network	3	0	0	3
3	DE01403	Computer Organization & Microprocessor	2	0	1	3
4	DE01404	Database Management System	3	0	0	3
5	DE01405	Entrepreneurship Development & Management	2	0	1	3
6	DE01406	Object Oriented Programming Using C++ (Lab)	0	4	0	2
7	DE01407	Computer Network (Lab)	0	4	0	2
8	DE01408	Computer Organization & Microprocessor (Lab)	0	2	0	1
9	DE01409	Database Management System (Lab)	0	2	0	1
10	DE01410	NCC / SPORTS / LIBRARY / HEALTH / TECHNICAL PRESENTATION ACTIVITIES	AS PER BHARTI VISHWAVIDYALAYA MINUTES 12 HOURS ARE ALLOCATED TO MENTIONED ACITIVITES			
Total			12	12	2	20

L - Lecture,

T - Tutorial,

P - Practical,

Scheme of Teaching and Examination

Diploma in Computer Science & Engineering

Semester – IV

S. No.	Course Code	Course Titles	Scheme of Examination					
			Theory			Practical		Total Marks
			ESE	CT	TA	ESE	TA	
1	DE01401	Object Oriented Programming using C++	70	10	20	0	0	100
2	DE01402	Computer Network	70	10	20	0	0	100
3	DE01403	Computer Organization & Microprocessor	70	10	20	0	0	100
4	DE01404	Database Management System	70	10	20	0	0	100
5	DE01405	Entrepreneurship Development & Management	70	10	20	0	0	100
6	DE01406	Object Oriented Programming using C++ (Lab)	0	0	0	35	15	50
7	DE01407	Computer Network (Lab)	0	0	0	35	15	50
8	DE01408	Computer Organization & Microprocessor (Lab)	0	0	0	35	15	50
9	DE01409	Database Management System (Lab)	0	0	0	35	15	50
10	DE01410	Technical Presentation	0	0	0	0	50	50
Total			350	50	100	140	110	750

ESE: - End of Semester Exam,

CT: Class Test,

TA: Teachers Assessment



Semester: Diploma 4th sem

Branch: CSE

Subject: Object Oriented Programming using C++

Course Code: DE01401

Maximum Marks :- 70

Minimum Marks :- 28

Unit – 1

Fundamentals of Object Oriented Programming

Introduction of OOP Programming, POP Programming, Comparison of Procedure- Oriented and Object Oriented programming, Features of Object-Oriented programming, Basic concept of OOPs, Benefits of Object – Oriented programming, Applications of Object-Oriented programming, Keywords in C++ like friend, const, auto, register, extern, typedef, static, default, return, void, continue, Structure of C++ program, Basic Datatypes & user defined datatypes, Various operators in C++, Scope resolution, member dereferencing operator, memory management operators, type cast, operator precedence, Manipulators.

Unit – 2

Functions and Classes

Functions in C++, Introduction to Functions, Function Prototyping, Call by Value, Call by Address, Call by Reference, Nesting member functions, Recursive Function, Function overloading, Classes and Objects, Introduction to class, Specifying Class, defining Data member & member functions, Object creation, Memory allocation for objects, Array as a class member, Array of objects, Passing object as an function argument, Static data member & Member function, Access specifiers in C++ and their scope, C++ streams, C++ stream classes, Introduction to Class template.

Unit – 3

Constructors and Destructors

Constructors, Concept of Initialization using constructor, Multiple Constructors in a class, Types of Constructors, Default, Copy, Parameterized, Dynamic, Constructor with default arguments, Destructor, Differentiate between constructor and destructor.



UNIT – 4

Operator

Overloading & Inheritance, Defining Operator overloading, Rules for operator overloading, Overloading Unary operator using member function, Overloading Binary operator using member function, Type Conversions, Inheritance, Defining Derived classes, Types of inheritance, Making private member, inheritable constructors in derived classes, *Virtual class, Abstract class, Friend class.*

Unit – 5

Polymorphism and Pointers

Introduction to Polymorphism, types of polymorphism, *Function Overriding*, Pointers in C++, Pointer to objects, ‘this’ pointer, pointer to derived classes, Virtual function, pure virtual function, *friend function, virtual Constructor and destructor.*

Books:

1. Object Oriented Programming with C++, Balagurusamy, E., McGraw Hill, Delhi, 6th edition / 2013.
2. Let Us C++, Yashwant Kanetkar, B. P. B. Publication, 2nd edition / 2003.
3. Mastering C++, Venugopal, Tata McGraw Hill, Delhi, 2011.
4. Object Oriented Programming in Turbo C++, Lafore Robert, Galgotia, 4th edition / 2017.
5. C++ The Complete Reference, Herbert Schildt, Tata McGraw – Hill, 5th edition.

Open source software and website address:

1. C++ Fundamentals :<http://www.oupinheonline.com>
2. C++ Tutorials: http://www.tutorialspoint.com/cplusplus/cpp_overview.htm
3. NPTEL video tutorial:
<http://nptel.iitm.ac.in/syllabus/syllabus.php?subjectId=106101006>



Semester: Diploma 4th sem

Branch: CSE

Subject: Computer Network

Course Code: DE01402

Maximum Marks :- 70

Minimum Marks :- 28

Unit – 1

Basics of Computer Networking

Definition & history of networks, Application of Computer Networks, Standard Organizations and Protocols, Line Configuration, Point to Point connection, Multipoint connection, Network Topology, Bus Topology, Ring Topology, Star Topology, Mesh Topology, Hybrid Topology, Categories of network, Based on Physical scope: LAN, MAN, WAN, Based on Connection: Connection Oriented, Connection Less.

Unit – 2

Reference Model for Network Communication

OSI model and its main function, Feature of each layer, Physical Layer, Data Link Layer, Network Layer, Transport Layer, Session Layer, Presentation Layer, Application Layer, TCP/IP model and its main function, feature and protocol of each layer, Physical Layer, Network Layer, Transport Layer, Application Layer, Compare OSI and TCP/IP model.

UNIT – 3

Transmission Media and Mode

Basic Concept, Communication Channels Characteristics, Band Width, Attenuation, Bit rate and Baud rate, Types of Transmission Media, Guided Media: Twisted Pair, Coaxial Cable, Optical Fiber, Un-Guided Media: Electromagnetic spectrum, Radio Transmission, Microwave Transmission, Infrared Transmission, Satellite Communication, Mode of Communication, Simplex, Half duplex, Full Duplex.

UNIT – 4

Network Protocol and Applications

IP Protocol–IPv4, IPv6, Addressing Schemes, Subnet & masking, DNS, Email, FTP, HTTP, TCP & UDP, NETBIOS Protocol, ARP & RARP, ICMP, SMTP .



Unit – 5

Networking Devices

Network communication devices, Repeater, Hub, Switch, Bridge, Router, Access Point, Gateway, RS232, RJ45 & RJ11, NIC, Bluetooth, Wi-Fi IEEE 802.11 (b, g, n).

Books:

1. Computer Networks, Andrew S Tanenbaum, Prentice Hall, Latest Edition.
2. Data communication and Networking, Behrouz Forouzan, Mc Graw Hill, 2007 or latest.
3. Networking Essential–Training Guide, Joe Casad & Dan Newland,(MCSE, MCT) Tech Media New Delhi, 1997 or latest.
4. Media New Delhi, 1997 or latest.
5. Networking Essential–Study Guide, James Chellis, Techmedia Publication, New Delhi 2000 or latest.

Open source software and website address:

1. https://www.tutorialspoint.com/data_communication_computer_network/data_communication
2. [_computer_network_tutorial.pdf](#)
3. <https://doc.lagout.org/network/Data%20Communications%20and%20Networking%20By%20Behrouz%20A.Forouzan.pdf>
4. <http://www.studytonight.com/computer-network/tcp-ip-reference-model>
5. <http://www.studytonight.com/computer-network/network-topology-types>
6. http://www.tcpipguide.com/free/t_connectionorientedandconnectionlessprotocols.htm



Semester: Diploma 4th sem

Branch: CSE

Subject: Computer Organization &

Course Code: DE01403

Microprocessor

Maximum Marks :- 70

Minimum Marks :- 28

Unit – 1

8085 Microprocessor

List of terms used in Microprocessor, Instruction Set, Clock Speed, Band width, Word Length, Data Types, Features of Microprocessor, 8085 Architecture and block diagram, 8085 Functional units, Multiplexed address/data Bus, Accumulator, Arithmetic and Logic Unit. General Purpose Registers, Program Counter, Stack Pointer, Flag Register, 8085 Pin Configuration, *Control signal, status signal, interrupt.*

Unit – 2

Addressing Modes & Instruction set of 8085

Instruction cycle, Opcode fetch cycle, Execution cycle, Timing Diagram, Opcode fetch, Memory Read, Memory Write, MOV R1,R2, MOV R,Mem, MOV Mem,R, Addressing modes in 8085, Immediate Addressing Mode, Register Addressing Mode, Direct Addressing Modes, Indirect addressing Mode, Instruction set of 8085, Data Movement Instructions, *16 bit additional data transfer and 16 bit Arithmetic instructions*, Logical Instructions, Shift & Rotate instructions, Program Control instructions, Branching instructions, Stack instructions.

Unit – 3

Assembly Language Programming for 8085

Machine Language, Assembly language, Assemblers first pass, Assembly language programming, Arithmetic operation of two numbers (both numbers stored in R, Mem & Immediate) Swapping of two numbers stored in registers & memory Program for Stack using PUSH, POP, 8085 Interrupt Structure, Hardware Interrupts, Software Interrupts, Architectural block diagram of 8086, *Concept of stack and subroutines call and return instruction.*



Unit – 4

Input Output Organization

Input Output Interface, I/O Bus and Interface Modules, I/O vs Memory Bus, Isolated vs, Memory Mapped I/O, Asynchronous Data Transfer, Strobe Control, Hand shaking, Modes of Transfer, Programmed I/O, Interrupt initiated I/O, Software considerations, Direct Memory Access, DMA Controller, DMA Transfer, Input Output Processor, CPU-IOP Communication, *Memory interface*.

Unit – 5

Memory Organization

Memory hierarchy, Auxiliary Memory, Magnetic Disks, Magnetic Tape, Cache Memory, Associative Mapping, Direct Mapping, Set Associative Mapping, Virtual Memory, Address Space and Memory Space, Address Mapping using Pages, Associative Memory Page table, Memory Management Hardware.

Books:

1. Computer Fundamentals Architecture & Organization, B. Ram, New Age International Limited, 3rd
2. Microprocessor Architecture, Programming and applications with 8085, Ramesh Gaonkar, Penram International Limited, 5th
3. Computer System Architecture, M. Morris Mano, Pearson Prentice Hall, 3rd

Open source software and website address:

1. Microprocessor tutorial by tutorialspoint-
<https://www.tutorialspoint.com/microprocessor/index.htm>
2. Microprocessor tutorial by NPTEL-<http://nptel.ac.in/downloads/106108100/>



Semester: Diploma 4th sem

Branch: CSE

Subject: Database Management System

Course Code: DE01404

Maximum Marks :- 70

Minimum Marks :- 28

Unit – 1

Overview of Database Management System

Introduction to data and information, overview of DBMS, Need of Database system, Advantages and disadvantages of DBMS, Levels of data abstractions, Logical Level, Physical level, View level, Data independence, An architecture of DBMS, Database users, Roles of DBA, Applications of DBMS.

Unit – 2

Data Models & ER Model

Schema and instance, Types of data model, Relational data model, Network data model, Hierarchical data model, Introduction to ER-Model, Component of ER Model, Entity Relationship, Attributes, Types of relationship, ER Notations, Convert ER into a table.

Unit – 3

Query Language & Data Integrity

Introduction to SQL, SQL data types, SQL commands, DDL Commands, DML Commands, TCL Commands, DCL Commands, DQL Commands, SQL Operators, Constraints: Unique constraints, Integrity constraints.

Unit – 4

SQL FUNCTIONS

Group functions, Group by, having and order by clause, Join operations, Inner Join, Outer Join, Nested query, Correlated Query, Uncorrelated Query, Math functions.

Unit – 5

Functional Dependencies

Introduction of functional dependency, trivial and nontrivial dependencies, inference rules, Closure of a set of dependencies, Closure of a set of attributes, Types of keys, Normalization, specialization, Normal Forms, types of normal form.



Books:

1. Database System Concepts, Avi Silberschatz, Henry F. Korth, S. Sudarshan, McGraw Education Hill, Sixth edition, (1 December 2013) or latest.
2. Fundamentals of database systems, Ramez Elmsari, Shamkant, B. Navathe, Pearson Education India, Seventh edition (8 June 2015) or latest.
3. Database Management Systems, Raghu Gehrke Ramkrishnan, McGraw Education Hill, Third edition (1 July 2014) or latest.
4. SQL, PL/SQL the Programming Language of Oracle, Ivan Bayross, BPB Publications, (4th Edition) or latest.

Open source software and website address:

1. Oracle Software: www.oracle.com
2. SQL Basic Concepts: <http://www.w3schools.com/sql/>
3. Others:
4. Database Tutorials: [http://www.roseindia.net/programming-tutorial/Database Tutorials](http://www.roseindia.net/programming-tutorial/DatabaseTutorials)
5. DBMS: <http://nptel.iitm.ac.in/video.php?subjectId=106106093>



Semester: Diploma 4th sem

Branch: CSE

Subject: Entrepreneurship Development and Management

Course Code: DE01405

Maximum Marks :- 70

Minimum Marks :- 28

Unit – 1

Entrepreneurial Development

Definition of Entrepreneurship, Characteristics of Entrepreneurship, Factor influencing Entrepreneurship. Need for promotion of Entrepreneurship, Entrepreneurial Environmental, Environmental analysis, opportunity in service industries.

Unit – 2

Motivation Management

Motives, motivation and motivational cycle. Concept of Need for Achievement. Need for Achievement assessment through various tools. Ring toss game, Boat making exercise, Building block exercise, TAT stories, Who am I? Interpretation and action plan for self-development.

Unit – 3

Management of Creativity.

Creativity: Divergent thinking, creativity techniques. Innovation, types and applications Product life cycle, New product development process. Product development and innovation through creativity and innovation.

Unit – 4

Critical Resources

Forms of business organization: Proprietorship, Partnership, Cooperative, Private, Public Ltd Company, Section 8 company, LLP Institutional Support for entrepreneurship: MSMESI, CED, DTIC, CITCON, CSIDC, LUN, NSIC, KVIC, NABARD, Banks, SIDBI Entrepreneurship promotion schemes of center and state. Marketing Mix, Market survey for project identification Inventory control, vendor development, material movement, store management. Manpower plan, hiring process, compensation, performance appraisal.



Unit – 5

Sustainable business plan

Format of business plan/techno-economic feasibility report. Demand and annual production target based on market survey. Outline production/service process. Land, building and machinery requirement. Power, utilities and raw material requirement. Fixed capital, Working capital, Subsidy and Cost of Project. Means of finance, calculation of interest. Profitability analysis, Break-even point.

Project

Project selection and formulation, Scope of project report, Content and format of project report, Need of project appraisal, Steps of project appraisal.

Books–

1. Entrepreneurial Development Desai Vasant Himalaya Publishing House
2. Starting your own business, step by step Blue print for the First – time Entrepreneur Harper Stephen C. Mc Craw-Hill
3. The Business Planning GUIDE H.Bangs David Upstart Publishing Company in Chicago
4. Entrepreneurship Development in India Gupta Dr.C.B. Shrinivasa NP Sultan Chand & Sons
5. Entrepreneurship Development Khanka Dr.S.S. S.Chand New Delhi
6. Entrepreneurship Development and small Business Enterprises Charantimath M. Pearson Edu.Soc.INDIA
7. Entrepreneurship Development Sharma Sangita PHI, DELHI



Semester: Diploma 4th sem

Branch: CSE

**Subject: Object Oriented Programming
using C++ Lab**

Course Code: DE01406

Maximum Marks :- 35

Minimum Marks :- 14

List of Practical:

1. Develop a program to show variable initialization, token declaration and use of different operators.
2. Develop a program to check if a number is an Armstrong number.
3. Develop a program to list the details of students and use constructor to fill the default / common records of students.
4. Develop a program for factorial calculation using recursion.
5. Develop a program using call by value argument passing method.
6. Develop a program to initialize objects using copy, parameterized and dynamic constructors.
7. Develop a program using base and derived class.
8. Develop a program using abstract class.
9. Develop a program using single, multiple and hybrid inheritance.
10. Develop a program to overload arithmetic operators like +, -, *, /, %.
11. Develop a program to override functions.
12. Develop a menu-driven program to override functions for various purposes according to user inputs.
13. Develop a program to implement polymorphism concept.
14. Develop a program using this pointer in c++.



Semester: Diploma 4th sem

Branch: CSE

Subject: Computer Network Lab

Course Code: DE01407

Maximum Marks :- 35

Minimum Marks :- 14

List of Practical:

1. Establish a network to connect computing systems by using any type of topology.
2. Demonstrate the topology used with the computer network.
3. Prepare a layout demonstrating data transfer aspects as per OSI model between computing devices.
4. Prepare and Test Straight UTP Cable for data transfer.
5. Prepare and Test Cross UTP Cable for data transfer.
6. Prepare and test network connectivity using optical fiber.
7. Perform different types of mode of communications.
8. Install, configure and testing of Repeaters for networking.
9. Install, configure and testing of Routers for networking.
10. Install, configure and testing of Gateway for networking.
11. Install and configure a small computer network as per given layout.
12. Install and configure a network adapter of a computer system.
13. Install and configure a Network Operating System.



Semester: Diploma 4th sem

Branch: CSE

**Subject: Computer Organization &
Microprocessor Lab**

Course Code: DE01408

Maximum Marks :- 35

Minimum Marks :- 14

List of Practical:

1. Introduction to Microprocessor Trainer Kit and identify the different peripheral devices on it.
2. Introduction to 8085 simulator IDE and understand the steps to simulate the program using it.
3. Execute various data movement instructions.
4. Execute various arithmetic instructions.
5. Execute various logical instructions.
6. Execute various shifts and rotate instructions.
7. Execute various Program control instructions.
8. Execute various Branching instructions.
9. Execute various stack instructions.
10. Develop a program using 8085 Microprocessor for Decimal, Hexadecimal addition and subtraction of two Numbers.
11. Develop a program using 8085 Microprocessor for addition and subtraction of two BCD numbers.
12. Develop a program to perform multiplication and division of two 8-bit numbers using 8085.
13. Develop a program to find the largest and smallest number in an array of data using 8085 instruction set.
14. Develop a program to convert given Hexadecimal number into its equivalent ASCII number and vice versa using 8085 instruction set.
15. Develop a program for stack operation.
16. Program for interfacing ADC/DAC.
17. Program to obtain Interfacing of DMA Controller.



BHARTI VISHWAVIDYALAYA, DURG

Semester: Diploma 4th sem

Branch: CSE

Subject: Database Management System

Course Code: DE01409

Lab

Maximum Marks :- 35

Minimum Marks :- 14

List of Practical:

1. Install and configure ORACLE DBMS software.
2. Create and alter table using CREATE and ALTER, DDL commands
3. Perform DROP and TRUNCATE, DDL Commands on a Table.
4. Apply Different Data types in table.
5. Perform various DML Commands like INSERT, SELECT, UPDATE and DELETE on a given table.
6. Perform nested Queries on multiple Tables.
7. Perform join Operation on multiple Tables.
8. Perform set operations on multiple Tables.
9. Perform various math operations on table data using MATH functions.
10. Implement COMMIT, ROLLBACK and CHECKPOINT TCL commands in a given table.



Scheme of Teaching and Examination

Diploma in Computer Science & Engineering

Semester – V

S. No.	Course Code	Course Titles	Scheme of Studies			
			L	P	T	Credit (L + T + P/2)
1	DE01501	Web Script	2	0	1	3
2	DE01502	Java Programming	2	0	1	3
3	DE01503	Software Engineering	2	0	1	3
4	DE01504	Web Application Development	2	0	1	3
5	DE01505	IT Trends & Cyber Security	2	0	1	3
6	DE01506	Web Script (Lab)	0	2	0	1
7	DE01507	Java Programming (Lab)	0	2	0	1
8	DE01508	Web Application Development (Lab)	0	4	0	2
9	DE01509	Industrial Training	0	2	0	1
10	DE01510	NCC / SPORTS / LIBRARY / HEALTH /TECHNICAL PRESENTATION ACTIVITIES	AS PER BHARTI VISHWAVIDYALAYA MINUTES REST OF THE HOURS ARE ALLOCATED TO MENTIONED ACTIVITIES			
Total			10	10	05	20

L - Lecture,

T - Tutorial,

P - Practical

Scheme of Teaching and Examination

Diploma in Computer Science & Engineering

Semester – V

S. No.	Course Code	Course Titles	Scheme of Examination					Total Marks
			Theory			Practical		
			ESE	CT	TA	ESE	TA	
1	DE01501	Web Script	70	10	20	0	0	100
2	DE01502	Java Programming	70	10	20	0	0	100
3	DE01503	Software Engineering	70	10	20	0	0	100
4	DE01504	Web Application Development	70	10	20	0	0	100
5	DE01505	IT Trends & Cyber Security	70	10	20	0	0	100
6	DE01506	Web Script (Lab)	0	0	0	35	15	50
7	DE01507	Java Programming (Lab)	0	0	0	35	15	50
8	DE01508	Web Application Development (Lab)	0	0	0	35	15	50
9	DE01509	Industrial Training	0	0	0	35	15	50
10	DE01510	NCC / SPORTS / LIBRARY / HEALTH / TECHNICAL PRESENTATION ACTIVITIES	0	0	0	0	50	50
Total			350	50	100	140	110	750

ESE: End of Semester Exam,

CT: Class Test,

TA: Teachers Assessment



Semester: Diploma 5th sem

Branch: CSE

Subject: Web Script

Course Code: DE01501

Maximum Marks :- 70

Minimum Marks :- 28

Unit – 1

Introduction to java script

Introduction to server pages, Understanding client server model, Difference between client side scripting and server side scripting, Java script Overview, Java script and the WWW, Java script versions, Functions, Java script Comments, Variables, type casting, Operators, branching statement: If else, while , for, do while, Java Script Objects: properties and methods, *Document object model, browser object model, object.*

Unit – 2

Introduction to jQuery

Introduction, Install, Syntax, Selectors, Event Methods, Effects, Hide and Show, Fading, Sliding, Animation, Stop Animations, Callback, Chaining, *User interface.*

UNIT – 3

JQuery HTML and AJAX

JQuery HTML, Get & Set Content and attribute, Add, remove, get, set CSS classes, jQuery – AJAX, xmlhttp(), load(), get(), post(), noConflict(), Bootstrap – Forms, Table, Buttons, Images, Grid, Layout component, *Ajax with database.*

UNIT – 4

Introduction to JSP

Basics of JSP, Life cycle, API , IDE, Scripting elements, scriptlet, expression, declaration tag, Implicit Objects: out, request, response, config, pageContext, Directive Elements, Page, include, taglib.

UNIT – 5

Development in JSP

Action Elements, Client Request, Server Response, Form Processing, Cookies Handling, File Uploading, Reading From Database.



Books:

1. A model introduction to programming, Marijn Haverbeke, William Pollock, 2nd Edition.
2. JAVA SCRIPT FOR KIDS, Nick Morgan, William Pollock, Latest.
3. Learning jQuery, Jonathan Chaffer, PACKT, Fourth Edition.
4. JavaScript & JQuery: The Missing Manual, David Sawyer McFarland, O reilly, 3rd or higher.
5. JSP 2.0 Complete Reference, Phil Hanna, TATA McGraw–Hill, 2nd or higher.

Open source software and website address:

1. <https://www.w3schools.com>
2. <https://www.tutorialspoint.com/html/>



Semester: Diploma 5th sem

Branch: CSE

Subject: Java Programming

Course Code: DE01502

Maximum Marks :- 70

Minimum Marks :- 28

Unit – I

Introduction of Java & Programming Structure

Introduction to Java, History, JVM, JDK, JRE, *Role of Java programming in industry*, Java Compilation & Interpretation, Object Oriented paradigm, Encapsulation, Polymorphism, Inheritance, Programming Structure, Data Type, *Primitive data types*, Variable, Constant, Operator and its precedence, Control Structure, if-else, switch, while, for, break & continue, Input from Key Board, Scanner class, command line argument.

Unit – II

Class, Object & Inheritance

Class & Object, Definition, *Use and benefits of inheritance*, Access modifiers, object declaration, methods with and without parameter, methods with returning value, Method Overloading, Constructor, default, parameterized, overloading, this keyword, Garbage Collector, Object as a Parameter, Array 1D, 2D, Wrapper Class, *Abstract class and extending class*, Inheritance, its types, define subclass, sub class constructor, super class methods, super keyword, Multilevel Inheritance, Method Overriding, Dynamic Method Dispatch.

Unit – III

Packages, Interfaces & Exception Handling

Programming classes and interfaces in packages access protection, class path setting for package, Abstract Class & its Method, Interface, Define, implement & apply, Package, Create, import, Exception Handling, Try & Catch, finally, multiple catch, throw, throws and User defined exception.

Unit – IV

Multi-Threading, String & Swing

Introduction of Thread, Definition, needs of multithreading programming, Priority,



Name, Create, Extend, Implement Thread, create multiple Thread, *Thread Life Cycle*, *Inner Communication Of Thread*, Local variable, Synchronization & its method and statements, Inner Thread Communication, String, String Constructor, length, concatenation, toString(), charAt(), toCharArray(), String Operations, compareTo(), equals(), searching string, indexOf(), Swing, Introduction, JLabel, JButton, JTextField, Panel.

Unit – V

Event Handling & JDBC

Event Handling, *Event driven programming in Java*, ActionEvent, ,InputEvent, MouseEvent, KeyEvent, Class Event Listener, *Event sources, event classes*, ActionListener, ItemListener Interface, MouseListener, KeyListener Interface, JDBC, Introduction, JDBC-ODBC bridge, Native-API, Network Protocol, Thin Driver, Register the driver class, forName(), getConnection(), createStatement(), executeQuery(), closing().

Books:

1. The Complete Reference JAVA, Herbert Schildt, McGraw Hill Higher, Ed 8th, 2011.
2. Programming with Java, E. Balagurusamy, Mcgraw Higher, Ed 5th, 2014.
3. Java in a Nutshell, David Flanagan, Benjamin Evans, O'Reilly Media, 6th, 2014.

Open source software and website address:

1. Java Basic: <http://nptel.ac.in/courses/106106147/>.
2. Core Java: <https://www.tutorialspoint.com/java/>.
3. JDBC: <https://www.javatpoint.com/steps-to-connect-to-the-database-in-java>.



Semester: Diploma 5th sem

Branch: CSE

Subject: Software Engineering

Course Code: DE01503

Maximum Marks :- 70

Minimum Marks :- 28

Unit – 1

Fundamentals of Software Engineering

Introduction to Software Engineering, Software Characteristics, Changing Nature of software, Role of software engineering in real-time applications, Software engineering– a layered approach, Process Framework, *Software development life cycle*, Waterfall Model, Incremental process models, Evolutionary process models (Spiral, Prototype), *RAD Model*.

Unit – 2

Software Engineering Practices & Requirement Analysis

Essence of software engineering practice, Core principles, *Software Requirement Tasks*, Initiating requirements process, Requirement Analysis, Analysis modeling approaches.

Unit – 3

Software design

Principle Design within the context of software engineering, Design process & design Quality, *User interface design*, Design concepts, mapping data flow into software architecture, Golden rules for interface design.

Unit – 4

Software Testing

Software testing fundamentals, a strategic approach to software testing, Test strategies for conventional software, Validation testing, System testing, Black box & white box testing, Control structure testing.

Unit – 5

Software project management

The management Spectrum, the people, the product, the process, the project, the W5HH Principle, metrics in the process & project domains, Software measurement, metrics for software quality, software scope, feasibility & resources, Software project estimation,



decomposition techniques, Empirical estimation models, software reliability, *COCOMO model*, *Risk management*.

Books:

1. Software Engineering, Roger S., Pressman, McGraw Hill, 2014 or latest.
2. An integrated approach to Software Engineering, Pankaj Jalote, Springer, Third Edition.
3. Software Engineering, Ian Somerville, Addison and Wesley, 7th edition.

Open source software and website address:

1. E-book for Software Engineering by Roger Pressman-
[https://downloadnema.com/wpcontent/uploads/2017/02/Software%20Engineering%20A%20Practitioner%E2%80%99s%20Approach%20eighth%20edition\(www.downloadnema.com\).pdf](https://downloadnema.com/wpcontent/uploads/2017/02/Software%20Engineering%20A%20Practitioner%E2%80%99s%20Approach%20eighth%20edition(www.downloadnema.com).pdf)
2. E-book for software Engineering by Ian Sommerville-
<https://inspirit.net.in/books/academic/Ian%20Sommerville%20Software%20Engineering,%209th%20Edition%20%20%20%202011.pdf>
3. Software Engineering Tutorial -
https://www.tutorialspoint.com/software_engineering/index.htm



Semester: Diploma 5th sem

Branch: CSE

Subject: Web Application Development

Course Code: DE01504

Maximum Marks :- 70

Minimum Marks :- 28

Unit – 1

Basics of html, php

Html form tag, form Attributes: form Elements: input, select, textarea, datalist, button, Web Server, Overview , working, List of available Web Server, *client side scripting*, *Server Side Script*, Difference between Client and Server Side Script i.e. HTML Vs. PHP, Introduction of php, creating php file, features of php, *Software required for PHP*.

Unit – 2

Building block of PHP

Variable, Creating & Printing Variables, different datatype: integer, float, string, Boolean, array, object, String library function: *strev()*, *strlen()*, *strword.count()*, *strops()*, *strreplace()*, *explode()* ,*implode()*, Type of operator: arithmetic, logical, assignment, increment/decrement, string, Control Statements, if, if- else, if-else-if statements, Switch statement, Loop Statements, while, do while statements, for, foreach statements.

Unit – 3

Function and Data Handling

Creating user defined function: without arguments, arguments with default value, function returning value, *header()* function, http redirect, content – disposition, Data Handling, Super globals in php: *\$globals*, *\$_server*, *\$_request*, *\$_post*, *\$_get*, *\$_cookie*, *\$_session*, *Object Oriented Programming concept with php*.

Unit – 4

MySQL Database

Introduction phpMyAdmin, Brief Introduction to phpMyAdmin GUI tools, Create Database, table using phpMyAdmin, SQL Operation on tables i.e. insert, delete, update, drop, Import/Export table or database, MySQL Administration, Create MySQL User, Grant and revoke permission, MySQL Routine, Create and invoke a stored routine, Alter or drop stored routine.



Unit – 5

Database Connection and Error handling

Connect database, connect using mysqli(), pdo(), advantage of pdo over mysqli, Data Read Write using PDO, prepare(), execute(), fetch() with fetchassoc, begin Transaction(), commit(), rollback(), Error handling, try, catch, *Exception handling*.

Books:

1. Beginning PHP and MySQL from Novice to professional, W. Jason Gilmore, Apress, 4th Edition or latest.
2. PHP and MySQL for Dynamic Web Sites, Larry Ullman, Peachpit Press, 4th Edition or latest.
3. Modernizing Legacy Applications In PHP, Paul M. Jones, Packt Publishing Ltd. Latest.
4. PHP 7: Real World Application Development, Doug Bierer, Altaf Hussain, Branko Ajzele, Packt Publishing Ltd. Latest.
5. MySQL Cookbook, Paul DuBois, O'Reilly, 2nd or latest.
6. MySQL Administrator's, Sheeri K. Cabral, Keit Murphy, Bible, 1st Edition.

Open source software and website address:

1. eBook of Beginning PHP and MySQL from Novice to professional, 4th Edition, W. Jason Gilmore
http://minitorn.tlu.ee/~jaagup/kool/java/kursused/14/webpr/beginning_php_and_mysql_from_novice_to_professional_4th_edition.pdf
2. eBook of PHP and MySQL for Dynamic Web Site
<http://personal.graceland.edu/~aallshou/classwork/csit2100/GFX-PHP.and.MySQL.for.Dynamic.Web.Sites.Visual.QuickPro.Guide.4th.Edition.pdf>
3. Online tutorial for php- <https://www.w3schools.com/php/>
4. Online tutorial for MySQL-
https://www.w3schools.com/php/php_mysql_intro.asp
5. Online tutorial for HTML <https://www.w3schools.com/html/>
6. Notepad++:<https://notepad-plus-plus.org/download/v7.3.3.html>
7. WAMP for windows o.s. - <http://www.wampserver.com/en/>



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8. XAMP for linux/windows o.s. - <https://www.apachefriends.org/index.html>
9. Online exercise <https://www.w3resource.com/mysql-exercises/>



Semester: Diploma 5th sem

Branch: CSE

Subject: IT Trends and Cyber Security

Course Code: DE01505

Maximum Marks :- 70

Minimum Marks :- 28

Unit – 1

Internet of Things and Embedded Systems

Internet of Things, fundamentals of IoT, Design of IoT, characteristics and functional, blocks of IoT, Comparison between IoT and M2M, Domain specific applications of IoT, Embedded Systems, Fundamentals of Embedded system, Functioning of Embedded O.S., Real time Operating system, Applications of embedded systems.

Unit – 2

Introduction to E- commerce and E- governance

E-Commerce: Definition, Emergence, marketing, security issues, legal considerations, E-Governance, Comparison of conventional governance and E-governance, E-governance initiatives by Government, Challenges in E-governance, Privacy and security issues in E- Commerce.

Unit – 3

Fundamentals of Machine learning and Artificial Intelligence

Machine Learning Introduction, Types of machine learning, Supervised and Unsupervised Learning, Applications of machine learning, Artificial Intelligence: Introduction, Propositional and fuzzy logic, Decision trees, Applications of Artificial intelligence.

Unit – 4

Introduction to Cybercrime and cyber laws

Cybercrime: Introduction, Types, Hacking cyberspace and criminal behavior, Digital Forensics, Cyber Laws, Indian IT Act 2000 and its amendments.

Unit – 5

Cyber Security and Cryptography

Security and recovery techniques against cyber-crime, Firewalls and packet filters, Password cracking, spyware, Virus, worms, Trojan, Types of cyber-attacks and recovery



techniques, Cryptography, Types of cryptography, Symmetric, Asymmetric, Classical cryptography techniques, Digital Signature.

Books:

1. From Machine-to-Machine to the Internet of Things, Jan Holler, Vlasios Tsiatsis, Academic Press, 1st/2014.
2. E-commerce, Kenneth. C. Laudon and Carol Guercio Traver, Pearson, 13th / 2017.
3. The complete E-commerce Book, Janice Reynolds, Focal Press, 2nd.
4. Essentials of Cyber Security, Gurpreet Dhillon, Paradigm Books, 2nd.
5. Artificial Intelligence, Elaine Rich and Kevin Knight, Tata Mc Graw Hills, 3rd.

Open source software and website address:

1. Cyber Law-
https://www.tutorialspoint.com/information_security_cyber_law/information_security_cyber_law_tutorial.pdf
2. Artificial Intelligence-
https://www.tutorialspoint.com/artificial_intelligence/artificial_intelligence_tutorial.pdf
3. Machine Learning-https://courses.edx.org/asset-1:ColumbiaX+CSMM.101x+1T2017+type @asset+block@AI_edx_ml_5.1intro.pdf
4. Machine Learning- http://ciml.info/dl/v0_8/ciml-v0_8-all.pdf
5. E-Commerce-<https://www.slideshare.net/selvagkm24/e-commerce-tutorial-45180083>



Semester: Diploma 5th sem

Branch: CSE

Subject: Web Script Lab

Course Code: DE01506

Maximum Marks :- 35

Minimum Marks :- 14

List of Practical:

1. Write a JavaScript program to calculate multiplication and division of two numbers (input from user).
2. Create a Zebra Stripes table effect.
3. Write a JavaScript conditional statement to find the sign of product of three numbers. Display an alert box with the specified sign.
4. Send a request to a server by using get() and post().
5. Animate an element, by changing its height and width.
6. Write a program using the request.getParameter() method to enter the Name and Password of a user and display the output on another JSP page.
7. How to add new elements/content at the end of the selected html elements.
8. How to pass parameters to the JSP manually by adding them to the end of the URL.
9. Write a JavaScript conditional statement to find the sign of product of three numbers. Display an alert box with the specified sign.
10. Send a request to a server by using get() and post().
11. Animate an element, by changing its height and width.
12. Write a program using the request. getParameter() method to enter the Name and Password of a user and display the output on another JSP page.



Semester: Diploma 5th sem

Branch: CSE

Subject: Java Programming Lab

Course Code: DE01507

Maximum Marks :- 35

Minimum Marks :- 14

List of Practical:

1. Develop a program to calculate factorial of a number.
2. Develop a program to set data and get data of a student with member function.
3. Develop a program to add 2 complex number using Object as a parameter.
4. Develop a program to calculate the salary of different type of employee using Constructor Overloading.
5. Develop a program that uses the package p1 that created by user with super key.
6. Develop a program to illustrate Interface Inheritance.
7. Develop a program that shows how to create a user-defined exception.
8. Develop a program illustrating a super class variable a referencing as sub class object.
9. Create an abstract class shape. Let rectangle and triangle inherit this shape class. Add necessary functions.
10. Develop an application that shows thread synchronization.
11. Develop an application that displays deadlock between threads.
12. Design a Graphical User Interface for Scientific Calculator.
13. Develop a Program to demonstrate Keyboard event.
14. Develop a program to design the page authenticating user name and password by using SWING.
15. Develop a program to establish a connection to MySQL.



Semester: Diploma 5th sem

Branch: CSE

Subject: Web Application Development

Course Code: DE01508

Lab

Maximum Marks :- 35

Minimum Marks :- 14

List of Practical:

1. Write a web page code for login form
2. Write a web page code for getting student's bio data
3. Write a web page code to find factorial of given number
4. Write a web page code to print Fibonacci series.
5. *Write a webpage code in PHP to check whether a number is prime or not.*
6. *Write php program to print star triangle.*

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7. *Create a php page using function for comparing three integers and print the largest number.*
8. *Write web page code which store login credentials in session variable and check it on main page.*
9. *Create Student database and its table in php Myadmin.*
10. *Write routine to find the sum of branch wise student.*
11. *Write a web page to insert, modify and delete student record from database.*



Semester: Diploma 5th sem

Branch: CSE

Subject: Industrial Training

Course Code: DE01509

Maximum Marks :- 35

Minimum Marks :- 14

Major Dimensions / Aspects of Industrial Visit

- 1) Layout of different Departments, Sections of Industry, stores, entry and exit etc.
- 2) Display of Quotations in the Industry
 - a) Systems of Industry
 - b) Procedures/Rules/standards
 - c) Hierarchy at Industries
 - d) Products & Services
 - e) Targets
 - f) Safety Precautions/Norms
 - g) Flow diagrams of different process
 - h) Other Aspects
- 3) Demonstration of Specific Equipment, not available in the Institute or Department or even the Demonstration of Performance of Specific Experiment.
- 4) Demonstration of latest Engineering Tools or Techniques or Software's or Procedures

Scheme of Teaching and Examination

Diploma in Computer Science & Engineering

Semester – VI

S. No.	Course Code	Course Titles	Scheme of Studies			
			L	P	T	Credit (L + T + P/2)
1	DE01601	Multimedia Technology	3	0	1	4
2	DE01602	Cloud Computing	2	0	1	3
3	DE01603	Computer Troubleshooting and Maintenance	2	0	1	3
4	DE01604	Mobile Application Development	2	0	1	3
5	DE01605	Cloud Computing (Lab)	0	2	0	1
6	DE01606	Computer Troubleshooting and Maintenance (Lab)	0	2	0	1
7	DE01607	Mobile Application Development (Lab)	0	2	0	1
8	DE01608	Major Project	0	4	0	2
9	DE01609	Multimedia Technology (Lab)	0	4	0	2
10	DE01610	NCC / SPORTS / LIBRARY / HEALTH / TECHNICAL PRESENTATION ACTIVITIES	AS PER BHARTI VISHWAVIDYALAYA MINUTES REST OF THE HOURS ARE ALLOCATED TO MENTIONED ACITIVITES			
Total			9	14	4	20

L - Lecture,

T - Tutorial,

P – Practical

Scheme of Teaching and Examination

Diploma in Computer Science & Engineering

Semester – VI

S. No.	Course Code	Course Titles	Scheme of Examination					Total Marks
			Theory			Practical		
			ESE	CT	TA	ESE	TA	
1	DE01601	Multimedia Technology	70	10	20	0	0	100
2	DE01602	Cloud Computing	70	10	20	0	0	100
3	DE01603	Computer Troubleshooting and Maintenance	70	10	20	0	0	100
4	DE01604	Mobile Application Development	70	10	20	0	0	100
5	DE01605	Cloud Computing (Lab)	0	0	0	35	15	50
6	DE01606	Computer Troubleshooting and Maintenance (Lab)	0	0	0	35	15	50
7	DE01607	Mobile Application Development (Lab)	0	0	0	35	15	50
8	DE01608	Major Project	0	0	0	70	30	100
9	DE01609	Multimedia Technology (Lab)	0	0	0	35	15	50
10	DE01610	NCC / SPORTS / LIBRARY / HEALTH / TECHNICAL PRESENTATION ACTIVITIES	0	0	0	0	50	50
Total			280	40	80	210	140	750

ESE: End of Semester Exam,

CT: Class Test,

TA: Teachers Assessment



Semester: Diploma 6th sem

Branch: CSE

Subject: Multimedia Technology

Course Code: DE01601

Maximum Marks :- 70

Minimum Marks :- 28

Unit – 1

The Elements of Design and Image Basics

Graphics Basics: Bitmap vs. vector based graphics, Color/bit depth and image resolution, Vector graphics vs. bitmap graphics, Standard selection vs. floating, selection, Tolerance and Opacity Introduction to Color: Color modes- RGB, CMYK, gray scale, Hue, saturation, and brightness, Browser safe colors, Shadows, highlights and mid tones of an image Photoshop Interface, Tools and Options. The Photoshop Interface, Toolbox and Options bar, Using Guides and Ruler. Photoshop Image and Color Basics: Supported import and export image formats, Creating images, Saving images, Basic image editing, Changing image size, Cropping, Changing color/bit depth, Transforms :Using free transform , Move ,Rotate ,Scale, Skew , Distort , Perspective, Flip-vertical, horizontal ,Invert , Rotate 180°, Rotate 90° CW, Rotate 90° CCW.

Unit – 2

Photoshop tools for creating professional grade Images

Photoshop Tools: Toolbox shortcuts, Tools options, Layers, Channels and Actions: About layers-fill and adjustment layers, The layer palette, Naming layers, Creating layers, Deleting layers, Viewing layers, Moving layers, Layer opacity. Locking layers, Merging layers, Layer modes and blending options, Image composting using layers Restoring and enhancing images: Restoring damaged photos, Photo retouching, Clone tamp-pattern stamp, Healing brush tool, Retouch tool, Photo enhancement and Color correction, Changing levels, curves, Color balance, brightness and contrast, hue saturation and brightness, Histogram, Gradient map, Desaturate, Invert, Color replace, Selective color, Equalize, Threshold, Channel mixer, Posterize, Changing background using layer composting. Multimedia and Animation Techniques Text editing and special effects: types of layer, *Creating vertical and horizontal types, Point and paragraph text creation*, Using horizontal and vertical type mask tools, Using character palette for text editing, Choosing a font, type size, type color, Specifying kerning and tracking, Using



fractional character widths, Specifying baseline shift , Applying underline and strikethrough, Text alignment and justification, Specifying anti-aliasing, Creating text warp, Rasterizing type, *Converting type to shapes*.

Unit – 3

Fundamentals of Flash software:

Environments and tools: Bitmap Vs. vector graphics, Image Vs. Movie, Conventional Animation Vs. Flash animations, Concepts of Frame Rate and Resolution, PAL, NTSC and Film Standards Exploring The Flash Interface: The Flash stage, Stage Settings, Creating a new Flash file, The various import formats, Timeline- Play head/Frames/Key Frames/Blank frames, Menus, Toolbox and Properties, Keyboard shortcuts and Preferences, Color Swatches and Color Mixer, Rulers, Guides, Grids and Snapping, Common Libraries, Debugger and Output, Movie Explorer. Basic drawing and Selections: Applying the Pencil and Eraser tools, Drawing with the Pen tool, Creating custom line styles, Selection Tools -Arrow Tools, and Lasso Tool, Navigation Tools- Hand and Zoom Tools Shapes: Basic shapes, Creating rectangles, ovals, Creating freeform shapes, Selecting and editing shapes, Using the Selection and Lasso tools, Transforming Multimedia and Copying, moving, and deleting a shape, Grouping and aligning objects Color: Applying color, Using the Paint Bucket and Ink Bottle tools, Using the Eyedropper and Brush tools, Fill Transform Tool, Custom colors and gradients, Creating a custom color swatch, Applying gradients, Creating a custom gradient Text: The Text tool, Creating an extending text block, Creating a fixed text block, Text formatting.

Unit – 4

Symbols, Animation and Organizing Projects

Layers: Layer basics, Merging, rearranging, Deleting, Modifying, Renaming, Locking and hiding, Masking, Layers Folders ,Creating layer folders, Guide layers, Creating a guide layer, Controlling the speed of a motion tween, Arranging and extending frames, Scenes and Frame Labels: Creating and Organizing Scenes & frame labels, Symbols and Instances: Using and managing the Symbol Library, Graphic Symbols, Movie Clip Symbols, Managing the Timeline of Movie Clip with the main Timeline, Button



Symbols, Creating and editing a button symbol, Controlling tints, brightness and transparency of instances, Animation: Timeline, Frames and Key Frames, Creating and manipulating animations, Creating a basic frame-by-frame animation, Using Onion Skin to modify an animation.

Unit – 5

Introduction To Action Script

Introduction: Understanding Object Oriented Programming, When to Use Action Script, Introducing the Actions Panel, Working in Normal Mode, Expert Mode, Reference Panel, Action Script Syntax. Creating Action Script Movies: About Flash Symbol Types, Adding an Action to a Key frame, an Object, a Button, Planning Your Action Script Movie, Tips for Creating Code, Dissecting an Action Script. Controlling The Timeline With Action Script: Starting and Stopping the Movie, Navigating to Frames and Scenes, Creating an Interactive Animation, Navigating to URLs, Opening a URL in a Different Browser Window, Load and unload movie. Creating Action Script Loops, Looping between Frames, Creating a For Loop, while and do while, Working with Variables and Arrays: Variable Data Types, Getting Data From an Array. Modifying An Object With Action Script: Creating a Movie Clip, Movie Clip Instances, Using the Set Property Action, Changing an Object's, Getting an Object's Properties, Using Action Script with Text: Creating Input Text Blocks, Creating Dynamic Text Blocks, Loading Text From an External Document, Creating Rich Formatted Text.

Books:

1. Adobe Photoshop CC Classroom in a Book, Andrew Faulkner, Conrad Chavez, Pearson, First edition, (15 June 2018).
2. Adobe Flash Professional CS5 Bible, Todd Perkins, Wiley, latest.
3. Action Script for Flash MX: The Definitive Guide, Colin Moock, O'Reilly Media, 2nd Edition.
4. Macromedia Flash MX, Bible, Robert Reinhardt and, Snow Dowd, Wiley, latest.

Open source software and website address:

1. Software: Adobe flash 4.0 or higher version, Adobe Photoshop CC2020 or higher version, flash compatible browsers



BHARTI VISHWAVIDYALAYA, DURG

2. <http://www.codecademy.com/learn> www.photoshopessentials.com
3. www.adobeknowhow.com <http://www.webdevelopersnotes.com/tutorials/flash/>
4. <http://www.adobe.com/devnet/flash.html>
5. http://www.adobe.com/support/flash/tutorial_index.html
6. <http://www.thefreecountry.com/webmaster/flash.shtml>



Semester: Diploma 6th sem

Branch: CSE

Subject: Cloud Computing

Course Code: DE01602

Maximum Marks :- 70

Minimum Marks :- 28

Unit – 1

Overview of Cloud Computing

Essentials of Cloud Computing Need of Cloud Computing Reduced Costs, Scalability, Remote Access, Disaster Relief, Ease of Implementation. Skilled Vendors, Response Time, Easy to Customize, Virtual Provisioning, Fully Automated Storage Tiering- FAST, History of Cloud Computing, Client Server Technology, Peer to Peer Approach, Distributed Computing, Evolution of Cloud Computing, Benefits of Cloud Computing, Limitations of Cloud Computing, Elastic Computing.

Unit – 2

Factors of Cloud Computing

Cloud Data Center Requirements, Architectural Influences, Operational Influences, Influence of Cloud Computing on Business Companies, Business Alignment, Governance.

Unit – 3

Cloud Computing Architecture

Grid computing framework, Grid Architecture, Advantages of Grid Computing, Challenges of Grid Computing, Cloud Computing Architecture, Key Design aspects Of Cloud Architecture, Cloud Services and Cloud Applications, Characteristics of Cloud and Grid Computing.

Unit – 4

Models of Cloud Computing

Cloud Service Models, Software as a Service, Platform as a Service, Infrastructure as a Service, Cloud Computing SubService Models, Everything as a Service, Compliance as a Service, Identity as a Service, Database as a Service, Storage as a Service, Communication as a Service, Security as a Service,, Monitoring as s Service, Desktop as a Service, Compute Capacity as a Service, Cloud Deployment, Models, Public Clouds, Private Clouds, Community Clouds. Hybrid Clouds.



Unit – 5

Cloud Data Centre and Virtualization

Cloud Data Center core elements, Storage Network Technologies and Virtualization, Object based storage technologies, Cloud Backup, Cloud and Disaster recovery, Traditional Data Centre Management, Virtualization Technology, At Server, At Network, At Desktop and, Application

Books:

1. Cloud Computing, Shailendra Singh, and Oxford Higher Education, 2018 or latest.
2. Cloud Computing: Bible, Barrie Sesinky, Wiley, 2011 or latest.
3. Mastering Cloud Computing, Rajkumar Buyya, Christian Vecchiola , S Thamarai Selvi, Mc Graw Hill Education (India) Pvt. Ltd., 2003 or latest.
4. Cloud Computing: Concept, Technology, Architecture, Erl, Pearson, 2014 or latest.
5. Cloud Computing for Dumies, Judith Hurwitz, Robin Bloor, Marcia Kaufman, and Dr. Fern Halper, Wiley, 2009 1st Edition.

Open source software and website address:

1. Cloud computing tutorial-
https://www.tutorialspoint.com/cloud_computing/cloud_computing_tutorial.pdf
2. Computer course, Ravi Kant Taxali-
https://books.google.co.in/books/about/COMPUTER_COURSE.html?id=PfHftdSmNBkC&redir_esc=y
3. Cloud Computing Tutorial for Beginners -<https://www.guru99.com/cloud-computing-for-beginners.html>



Semester: Diploma 6th sem

Branch: CSE

Subject: Computer Troubleshooting and

Course Code: DE01603

Maintenance

Maximum Marks :- 70

Minimum Marks :- 28

Unit – 1

Computer Troubleshooting Fundamentals

Introduction to troubleshooting and diagnosis, Classification of faults, Hardware faults, Software faults, Software infections/Virus, Network fault.

Unit – 2

Motherboards, Processors, and Memory

Overview of motherboard features of motherboard, Chipsets, Ports, Buses and Expansion slots, Motherboard Troubleshooting, Processor: Processor Features, Processor troubleshooting techniques. BIOS: Functions of BIOS, Booting process, Beep Codes, Error messages, Post-Faults related to Hardware, Memory: Memory Modules, SIMMs, DIMMs, and RIMMs, Memory, Troubleshooting,

Unit – 3

Storage Devices

Introduction of a Hard Drive, Hard Drive Interfaces: IDE, SCSI, Solid-State Drives, SSD types, advantages, disadvantages, SSD vs HDD, Formatting, Partitioning and Installation of OS, Optimizing Hard drive, Disk cleanup, Disk fragmentation, Disk backup, Preventive maintenance for Hard Drives, Hard disk and USB drive troubleshooting and maintenance.

Unit – 4

Display and power supply

Introduction to Display, Device CRT monitor, LCD Display, Plasma Displays, TFT Displays, LED Displays, OLED, Graphic Cards: Video capture card, Video Troubleshooting and Maintenance, SMPS, Block diagram – Basic Principles and Operations, O/P Voltages, Cable color codes and Connectors, Power Supply Form Factors 4.6Power Supply Troubleshooting.



Unit – 5

Computer and network maintenance

Introduction of cable and connector, Preventive measures to ensure a healthy system, Write best practices to be followed while working with a computer, System Maintenance and fault prevention, Steps to configure internet connection to the PC using wireless technology and troubleshoot various connection related problems, Steps to configure internet connection using L2 and L3 switch., Concept of VPN & proxy server.

Books:

1. IBM PC and Clones, B. Govindrajalu, Tata Mc-Graw Hill Publications Pvt. Ltd, 7th /2000.
2. Troubleshooting, Maintaining & Repairing PC's, Stephen J. Bigelow, Tata Mc-Graw Hill Publications Pvt. Ltd, 5th.
3. PC Upgrading and Maintenance, Bigelow's, Smart Computing, BPB Publications, 2nd.
4. The Complete PC Upgrade & Maintenance Guide, Mark Minasi, BPB Publications, 10th.
5. Computer Troubleshooting: The Complete Step-by-step Guide to Diagnosing and Fixing Common PC Problems, Kyle McRae, Gary Marshall, J H Haynes & Co Ltd, 2nd, Edition/2008.
6. Troubleshooting and Maintaining Your PC All-in-One for Dummies, Dan Gookin, Learn Made Easy, 2nd Edition.
7. Handbook of Computer Troubleshooting, Michael Byrd, Saigh, Global Professional, publisher, 2001.

Open source software and website address:

1. Computer Repair and maintenance-<http://vkool.com/16-tips-for-computer-repair-and-maintenance/>
2. Tips for troubleshooting-<https://www.gcflearnfree.org/computerbasics/basic-troubleshooting-techniques/1/>
3. Common Computer errors - <http://www.learning-about-computers.com/tutorials/troubleshooting.shtml>



4. Backup and restore-
[http://www.freecomputermaintenance.com/category/computer- maintenance-tutorials/](http://www.freecomputermaintenance.com/category/computer-maintenance-tutorials/)
5. PC repair and maintenance- a practical guide -
<https://www.youtube.com/watch?v=I1JxP9aZhjs>
6. Computer maintenance tutorial video-
<https://www.youtube.com/watch?v=x9SDcFPDU4o>
7. PC Troubleshooting and Maintenance Guide PDF-
8. <http://h10032.www1.hp.com/ctg/Manual/c00772931.pdf>
9. Hong kong polytechnic university PDF on computer maintenance and troubleshooting -
http://cd1.edb.hkedcity.net/cd/tech_edu/handout/Files/Computer_Organization_Day3.pdf



Semester: Diploma 6th sem

Branch: CSE

Subject: Mobile Application

Course Code: DE01604

Development

Maximum Marks :- 70

Minimum Marks :- 28

Unit – 1

Android OS Concepts

Overview of Android - An Open Platform for Mobile development, Android Versions, Codename and API, Android applications, Features and Marketplaces of Android, Android Development Environment setup, Android development Framework - Android-SDK, *Eclipse Emulators/Android* AVD, Platform Architecture of Android and component level of Android software stack.

Unit – 2

Android Activity & UI Design

Application components Intent, Activity, Introduction, Activity Lifecycle, Activity State Change, Broadcast receivers, *Services and Manifest*, Create Application and new Activities, Expressions and Flow control, Fundamental Android UI Design, UI-Layouts and Layout properties, Introducing Layouts, Creating new Layouts, Drawables Resources.

Unit – 3

Advanced UI Programming

Introduction to GUI objects, Supporting Multiple Screen Activities, Application context, Intent Web View, Event driven Programming in Android (Text Edit, Button clicked etc.), Creating a splash screen, Introduction to threads in Android,.

Unit – 4

Toast, Menu, Dialog, List and Adapters

Menu: Custom Vs. System Menus, Creating and Using Handset menu Button (Hardware), Android Themes, Dialog, create an Alter Dialog, Toast in Android, List & Adapters, Android Manifest.xml File, Handle Location based services, Develop interfaces, Create Android Projects based on above tools.



Unit – 5

Database and Security in Android

Understand handling of data in android application, Messaging and Networking in android, Developing Android Services, Learn the concept of Object oriented database, Database (SQLite DB), *Open and close a database*, *Creation of .apk files*, File Shared Preferences, Learn how to secure android applications, Learn the concept of debugging Methodologies and re-testing process, Learn the concept of compliance process/procedures and tests for hosting applications at app stores, Learn about the tools used for application functional and security testing, Publishing Android application.

Books:

1. Android Application Development Black Book, Pradeep Kothari, Dreamtech press, 2014.
2. Android Programming for beginners, John Horton, 1st Edition, Kindle Edition, Amazon Asia-Pacific Holdings Private Limited, 2015.
3. Building Android Apps IN EASY STEPS, Mike McGrath, 2nd edition Edition, Kindle Edition, Amazon Asia- Pacific Holdings Private Limited, 2012.
4. Android Programming, Erik Hellman, 1st Edition, Kindle Edition, Amazon Asia-Pacific
5. Holdings Private Limited, Latest Edition.
6. Android Programming (Big Nerd Ranch Guide), Brian Hardy and Bill Phillips, 1st Edition, Kindle Edition, Amazon Asia-Pacific Holdings Private Limited, Latest Edition.

Open source software and website address:

1. <http://nptel.ac.in/courses/106106147/6>
2. www.android.com
3. www.developer.android.com/tools/help/index.html
4. www.slideshare.net/venturehire/best-android-applicationdevelopment-tutorials-for-beginner



Semester: Diploma 6th sem

Branch: CSE

Subject: Cloud Computing Lab

Course Code: DE01605

Maximum Marks :- 35

Minimum Marks :- 14

List of Practical:

1. Install Virtual box/VMware Workstation with different flavors of Linux or windows OS on top of windows 7 or 8.
2. Configure various virtualization tools such as Virtual Box, VMware workstation
3. Implementation of SOAP Web services in C#/JAVA Applications.
4. To study and implementation of Storage as a Service
5. Install and use a generic cloud environment that can be used as a private cloud.
6. To study and implementation of identity.
7. To Study Cloud security management.
8. Study and implementation of infrastructure as Service using Open Stack.
9. Write a program for Web feed using PHP and HTML
10. Write a Program to Create, Manage and groups User accounts in own Cloud by Installing Administrative Features.
11. Design an Assignment to retrieve, verify, and store user credentials using Firebase Authentication, the Google App Engine standard environment, and Google Cloud Data store.
12. Create Single node Hadoop installation.
13. Case Study: PAAS (Facebook, Google App).
14. Case Study: Amazon Web Services.



Semester: Diploma 6th sem

Branch: CSE

**Subject: Computer Troubleshooting and
Maintenance Lab**

Course Code: DE01606

Maximum Marks :- 35

Minimum Marks :- 14

List of Practical:

1. Identify computer hardware and its type.
2. Illustrate examples of each type of hardware/software fault.
3. Study of anti-virus programs, installing antivirus programs.
4. Study the various components of motherboard.
5. Run diagnostic programs to detect system faults.
6. Identification of motherboard related problems, possible cause and resolution.
7. Identification of processor related problems, possible cause and resolution.
8. List the steps to perform booting process.
9. Identify the BIOS related error messages, beeps codes, possible cause and resolution.
10. Identify of memory related problem, possible cause and resolution.
11. Identification of display device related problem, possible cause and resolution.
12. Disk formatting & logical disk drive creation and device driver installation.
13. Dismantle and assemble different storage devices.
14. Identify fault, O/P Voltages, Cable color codes and Connectors in SMPS.
15. Perform Remote desktop access and control, VoIP.



Semester: Diploma 6th sem

Branch: CSE

Subject: Mobile Application

Course Code: DE01607

Development Lab

Maximum Marks :- 35

Minimum Marks :- 14

List of Practical:

1. Installation and setup of java development kit(JDK),setup android SDK, setup eclipse IDE, setup android development tools (ADT) plugins, create android virtual device.
2. Create “Hello World” application. That will display “Hello World” in the middle of the screen using Text View Widget in the red color
3. Create Registration page to demonstration of Basic widgets available in android.
4. Create login application where you will have to validate username and passwords till the username and password is not validated, login button should remain Disabled.
5. Create an application for demonstration of Relative and Table Layout in android.
6. Create an application for demonstration of Scroll view in android
7. Create an application for demonstration of Explicitly Starting New Activity using Intent.
8. Create an application that will pass two number using TextView to the next screen, and on the next screen display sum of that number.
9. Create spinner with strings taken from resource folder (res >> value folder). On changing spinner value, change background of screen.
10. Create an application that will get the Text Entered in Edit Text and display that Text using toast (Message).
11. Create an application that will Demonstrate Button onClick() Event and change the Text View Color based on button Clicked
12. Create student database and connect with the android UI.



Semester: Diploma 6th sem

Branch: CSE

Subject: Major Project

Course Code: DE01608

Max. ESE Marks: 100

Min. Marks : 40

Identification of project and allocation methodology: Though the teachers and students, both are involved in identification of project titles, but the prime responsibility of identification of project titles goes to the teachers involved in implementing the course or programme. Teachers are fully aware of course/programme curriculum. They are also aware of related industrial problems. They try to explore the possibility of identification of project titles through these problems.

These small industrial problems in the form of project titles may be brought into the laboratories or workshop of institutions of a specific programme, which are equipped with all necessary facilities and resources to carry out the project work. These labs or workshop can function as miniature industry to solve the industrial problems in the form of simulated industrial projects. These projects may be integrated problem of courses or programme. The project identified may be application type, product type, Research type and review type.

Criteria for Identification and Implementation of Project Titles: Identification of project title is planned to be done based on many considerations like: Cost effectiveness, Safety considerations. Ethical issues, Environmental considerations, improvised process, Improvised equipment, simulated industry's problem, Application or utility in the world of work.

Implementation and Evaluation of Project Work: Once the identification of project titles and guide allocation process is over, quality of student's project, on different criteria including the report writing need to be continually monitored. Projects planning, design, execution and report writing is done by the students under the guidance and feedback by respective teachers for attainment of courses.

Continual Monitoring, feedback and assessment mechanism on weekly progress/updates on action taken on different criteria and sub-criteria of the project work need to be



planned for individual and team of students. Path breaking teachers who think out of the box are required to guide, monitor and evaluate the project work.

For objective, valid and reliable assessment, teachers should use different tools of assessment such as checklist, rating scale, assessment rubric, observation schedule, portfolio assessment, incidental records etc. Even the students may be encouraged to adopt self-assessment techniques using the assessment rubrics.

Criteria of Evaluation of Project: The different criteria of evaluation of project under different sub heads of project work completion are given below:

Project Planning: Project planning, its action plan, steps of realizing the projects, may be specifically planned in advance based on feasibility, resources available, time allocation, finance and manpower requirement for each and every step or activity of project work.

Under project planning, many points need to be considered like - Selection of relevant industry based projects as per the requirement of curriculum, Objectives Set, Literature survey, Literature survey on the project title need to be done through abstract, journals, websites, open sources and other relevant sources available

It need to be ensured that objectives are written properly with clear specific, measurable and attainable statements. The sample size has to be delimited and decided as per the time limit allotted, feasibility and many other considerations.

Objectives formulated will decide the further course of action, depth and breadth of the project and implementation plan.

Design, Development and Execution of Project: Following important characteristic features of project are needed to be given special emphasis during the implementation of the project work- Innovativeness, Creativity, Originality, Pro-activeness, Imitativeness, Cost Effectiveness, Resourcefulness, Development of soft skills/generic skills. There may be deviation from planning, design and implementation of the project as per the requirement.



Quality of Report Writing: Following points need to be taken care of for report writing- Report writing as per prescribed format, Clarity of Objectives, Presentation of Data, Data Analysis, Interpretation and Result, Quality of Product.

Presentation & Discussion: Quality of presentation of data need to be ensured using the following criteria - Clarity in Communication and Presentation, Voice Audibility, Use of Media and methods, Satisfying the queries of audience, Attainment of objectives set.

Project's Potential: Futuristic scope and recommendation for further studies related to project may be assessed from the following criteria - Papers published or award received, Exhibition or Display or showcase of project in competition or exhibition or Tech Fest, Evaluation of working of projects or prototype, Relevance and Applications in the world of work, Recognition in any form, Related areas/sub areas for further studies. The students need to be assessed, continuously based on the assessment rubric prepared by the implementing teachers on different stages of project work completion.



Semester: Diploma 6th sem

Branch: CSE

Subject: Multimedia Technology Lab

Course Code: DE01609

Maximum Marks :- 35

Minimum Marks :- 14

List of Practical:

1. Develop graphics lines, shapes, texture, filling colors using color palates, texturing.
2. Develop a banner of recent activity in your collage or any festival.
3. Develop a collage of different images of different sizes and properties.
4. Develop a webpage using Photoshop software.
5. Develop, test and debug small flash application.
6. Develop, test and debug small applications with flash players.
7. Develop, test and debug small applications with flash symbols and instances.
8. Develop, test and debug small applications with flash animation.
9. Develop, test and debug simple application, movie application using Action Script.
10. Develop, test and debug simple application using Action Script.