

Study & Evaluation Scheme

of

Diploma in Computer Science & Engineering (Lateral)

[Applicable w. e. f. session 2012-13 till revised]



TEERTHANKER MAHAVEER UNIVERSITY

Delhi Road, Moradabad, Uttar Pradesh-244001

Website: www.tmu.ac.in



TEERTHANKER MAHAVEER UNIVERSITY

(Established under Govt. of U. P. Act No. 30, 2008)

Delhi Road, Moradabad (U.P)

Study & Evaluation Scheme Of Diploma in Engineering (Computer Science- Lateral)

SUMMARY

Programme : Diploma in Engineering Lateral Entry
Duration : 2 Years (Semester system)
Medium : English
Minimum Required Attendance : 75 %

Assessment (Theory and Project) :

Internal	External	Total
30+10 (Project)	60	100

Maximum Credit : 133

Minimum Credit required for the degree : 129

Internal Evaluation (Theory Papers & Project) :

Class Test I	Class Test II	Class Quiz/ Assig/ Proj	Attendance	Grand Total
Best two out of the three				
10 Marks	10 Marks	15 Marks	5 Marks	40 Marks

Evaluation of Practical/ Dissertation & Project Report :

Internal	External	Total
50	50	100

Duration of Examination :

Internal	External
1 ½ hrs.	3 hr.

To qualify the course a student is required to secure a minimum of 40% marks in aggregate including the semester-end examination and teachers' continuous evaluation. (i.e. both internal and external).

A candidate who secures less than 40% of marks in a course shall be deemed to have failed in that course. The student should have at least 50% marks in aggregate to clear the semester. In case a student has more than 40% in each course, but less than 50% overall in a semester, he/she shall re-appear in courses where the marks are less than 50% to achieve the required aggregate percentage (of 50%) in the semester. It is compulsory for the student to appear in external examination to clear the course.

Question paper structure

1. The question paper shall consist of eight questions. Out of which first question shall be of short answer type (not exceeding 50 words) and will be compulsory. Question No. 1 shall contain 8 parts representing all units of the syllabus and students shall have to answer any five (weightage 3 marks each).
2. Out of the remaining seven questions, student shall be required to attempt any five questions. There will be minimum one and maximum two questions from each unit of the syllabus. The weightage of Question No. 2 to 8 shall be 9 marks each.
3. Weightage to numerical/ case study etc shall be as mentioned at the end of syllabus of each subject.

Computer Science & Engineering
Program: Diploma in Engineering (CS- LATERAL)

Semester- III

S. No.	Course Code	Subject	Periods			Credit	Evaluation Scheme		
			L	T	P		Internal	External	Total
1	DIP301	Applied Mathematics	4	-	-	4	40	60	100
2	DIP302	Basic of Electrical & Electronics Engineering	4	-	-	4	40	60	100
3	DIP303	Applied Mechanics	4	-	-	4	40	60	100
4	DIP304	Concepts in Information Technology	4	-	-	4	40	60	100
5	DIP305 OR DIP306 OR DEE304	Building Material OR Basics of Mechanical Engineering OR Electrical & Electronics Engineering Materials	3	-	-	3	40	60	100
6	DIP307	English Communication	3	-	-	3	40	60	100
7	DIP351	Electrical & Electronics Engineering Lab	-	-	4	2	50	50	100
8	DIP352	Information Technology Lab	-	-	2	1	50	50	100
9	DIP353	Engineering Drawing	1	-	3	3	50	50	100
10	DIP354	Workshop Practice	-	-	4	2	50	50	100
11	DIP355	Applied Mechanics Lab	-	-	3	2	50	50	100
Total			23	-	16	32	490	610	1100

Semester- IV

S. No.	Course Code	Subject	Periods			Credit	Evaluation Scheme		
			L	T	P		Internal	External	Total
1	DCS401	Data Structures Using C	3	1	-	4	40	60	100
2	DCS402	Database Management System (DBMS)	3	1	-	4	40	60	100
3	DCS403	Computer Organization & Microprocessor	3	1	-	4	40	60	100
4	DCS474	Software Engineering & Information System	4	-	-	4	40	60	100
5	DCS475	Computer Network	3	-	-	3	40	60	100
6	DCS476	Operating System	3	-	-	3	40	60	100
7	DIP401	Technical Communication	3	-	-	3	40	60	100
8	DCS461	Data Structures Using C Lab	-	-	4	2	50	50	100
9	DCS452	Database Management System Lab	-	-	4	2	50	50	100
10	DCS462	Computer Organization & Microprocessor Lab	-	-	4	2	50	50	100
11	DCS463	Computer Network lab	-	-	2	1	50	50	100
12	DCS464	Operating System Lab (Linux)	-	-	2	1	50	50	100
Total			22	3	16	33	530	670	1200

Semester- V

S. No.	Course Code	Subject	Periods			Credit	Evaluation Scheme		
			L	T	P		Internal	External	Total
1	DCS501	Computer Graphics	3	2	-	5	40	60	100
2	DCS502	Java Programming	3	2	-	5	40	60	100
3	DCS503	Multimedia	3	2	-	5	40	60	100
4	DCS504	Object Oriented Programming in C++	3	1	-	4	40	60	100
5	DIP501	Communication Technique	3	-	-	3	40	60	100
6	DIP502*	Social, Psychological and Economics Factors	3	-	-	3	40	60	100
7	DCS551	Computer Graphics Lab	-	-	4	2	50	50	100
8	DCS552	Java Programming Lab	-	-	4	2	50	50	100
9	DCS553	Multimedia Lab	-	-	2	1	50	50	100
10	DCS554	Object Oriented Programming in C++ Lab	-	-	4	2	50	50	100
11	DCS555	Industrial training	-	-	-	4	50	50	100
Total			18	5	14	36/33	490/450	610/550	1100/1000

Semester- VI

S. No.	Course Code	Subject	Periods			Credit	Evaluation Scheme		
			L	T	P		Internal	External	Total
1	DCS601	Web Technology	3	2	-	5	40	60	100
2	DCS602	E-Commerce	3	2	-	5	40	60	100
3	DCS603	Visual Basic .Net	3	2	-	5	40	60	100
4	DIP602	Industrial Economics & Principles of Management	3	2	-	5	40	60	100
5	DIP603*	Industrial Ecology	3	-	-	3	40	60	100
6	DIP601	Corporate Communication	4	-	-	4	40	60	100
7	DCS651	Web Technology Lab	-	-	4	2	50	50	100
8	DCS652	Major Project	-	-	8	4	50	50	100
9	DCS653	Visual Basic .Net Lab	-	-	4	2	50	50	100
Total			16	8	16	32/35	350/390	450/510	800/900

*The subject -**Social, Psychological and Economics Factors** will be taught in either V or VI semester

APPLIED MATHEMATICS

Third Semester

Course Code: DIP301

L	T	P	C
4	-	-	4

Course Contents:

Unit I

Jacobians:

Definition of Jacobians, Jacobians of functions of functions, Jacobian of implicit function, Functional Dependence theorem. (8 Lectures)

Unit II

Matrices:

Definition of matrix, Different types of matrices, Transpose of a matrix, Equality of matrices, Addition and subtraction of matrices, Properties of matrix addition. (8 Lectures)

Unit III

Matrices:

Multiplication of matrices, Properties of matrix multiplication, Adjoint of square matrix, Properties of adjoint matrix, Inverse of a matrix. (8 Lectures)

Unit IV

Differential Calculus:

Methods of finding derivative- function of a function, logarithmic differentiation, differentiation of implicit functions, higher order derivatives, Liebnitz theorem.

Special functions (Exponential, Logarithmic, Hyperbolic, Inverse circular), definition, graphs, range and domain and derivatives of each of these function.

Application: Finding tangents, normal points of maxima and minima. (8 Lectures)

Unit V

Integral Calculus:

Methods of indefinite integration: Integration by substitution, Partial fraction and by parts. Meaning and properties of definite integrals, Evaluation of definite integrals.

Simpson's and Trapezoidal rule: their application and simple cases. (8 Lectures)

The question paper shall have weightage to numerical/ case study 70% and to theoretical 30%.

Project work

A project work will be assigned to the students by the concerned subject faculty. It will carry 10 marks and will be evaluated by the faculty itself. The topic of the project will be decided by the faculty. The students will work in a group of 3 – 5 on each topic. The topic should be related to the subject taught by the faculty and should have proper utility and importance to enhance his practical skill & knowledge. The project will be evaluated by the external examiner.

Text Books:

1. Sharma, R D, *Applied Mathematics*.
2. Grewal B S, *Elementary Engineering Mathematics*, Khanna Publication.
3. Sumha Dr. K. S., *Applied Mathematics (I & II)*, Bharat Bharati Prakashan, Meerut.

Reference Books:

1. Gorakh Prasad, *Differential & Integral Calculus*
2. Mittal S C & Mittal, S K., *Two Dimensional Coordinate*, Pragati Prakashan, Meerut
3. Mittal S C & Mittal, S K., *Three Dimensional Coordinate*, Pragati Prakashan, Meerut
4. Loney, S L, *Trigonometry (I part)*
5. Goel, B S, *Algebra*

BASIC OF ELECTRICAL AND ELECTRONICS ENGINEERING
BASICS OF ELECTRICAL ENGINEERING
Third Semester

Course Code: DIP302

L	T	P	C
4	-	-	4

Course Contents:

Unit -1

BASICS OF ELECTRICAL QUANTITIES: Different forms of energy, Advantages of electrical energy, Uses of electrical energy, Basic concept of charge, Current, Voltage, Resistance Power, Energy and their Units.

BATTERIES: Basic idea about primary and secondary cells, Working principle, Construction and Application of lead acid, Nickel cadmium and Silver Oxide Cells. **(8 Lectures)**

Unit – 2

DC CIRCUIT: Ohms Law, Resistance in series and Parallel, Voltage and current division rule, Kirchhoff's Laws and their application in solving simply D. C. Network.

AC CIRCUIT: Concept of alternating current and voltage, Equation of instantaneous values. Average rules, R.M.S. value, Form Factor and peak factor of sinusoidal waveform. Simple R-L-C Series circuit concept of three phase A.C. **(8 Lectures)**

Unit- 3

Magnetic Circuits: Magnetic flux, flux density, field intensity, B-H Curve, difference between magnetic and electric circuit, Faraday's law, Fleming right hand, left hand rule, Lenzs law, thumb rule, self and mutual, inductance, induced emf, energy stored in magnetic circuit. **(8 Lectures)**

BASIC ELECTRONICS ENGINEERING

Unit- 4

Electronic Component & Voltage and Current Sources:- Application of Electronics in different fields, Brief introduction to active and passive components, Resistor working, specification, testing & colour coding of resistor, Capacitor. Working, specification testing & colour coding, inductor working, RF coils, transformer. Concept of constant voltage & current sources, concept of practical voltage & current sources, conversion of voltage to current & current to voltage sources. **(8 Lectures)**

Unit- 5

Semiconductor Diode:- P-N junction diode, mechanism of current flow in P-N junction, drift and diffusion currents, depletion layer, potential barrier, breakdown, semiconductor diode characteristics, P-N junction diode as rectifier, half wave rectifier, full wave rectifier, bridge rectifier, different type of diode, power diode, zener diodes, varactor diodes, tunnel diode, LED's and photo diodes. **(8 Lectures)**

Unit- 6

Introduction to Bipolar Transistor Biasing and Stabilization of Operating Point:- Concept of bipolar transistor as a two junction three terminal device having two kinds of charge carriers, PNP and NPN transistors, their symbols, concept of leakage current, effect of temperature on leakage current, common base configurations (CB), common emitter configuration (CE), common collector configuration, different types of biasing circuits for fixing the operation points, single stage CE amplifier circuit with proper biasing components. **(8 Lectures)**

The question paper shall have weightage to numerical/ case study 30% and to theoretical 70%.

Project work

There will be a project work assigned to students by the subject faculty. It will be of 10 marks and will be evaluated by the faculty itself. The topic of the project will be decided by the faculty and students will work in a group of 3 – 5 on each topic. The topic should be related to the subject taught by the faculty and should have proper utility and importance to enhance his practical skill & knowledge.

Text Books

1. Garg R.P., *Elements of Mechanical Engineering*, Standard Publishers Distributors, Delhi.
2. Sharma Sanjay, *Basic Electronics*, Publication of Engineering & Computer.

APPLIED MECHANICS

Third Semester

Course Code: DIP303

L	T	P	C
4	-	-	4

Course Contents:

UNIT I

Force Analysis: - System of forces, concept of coplanar and non-coplanar forces including parallel forces. Concurrent and non-concurrent forces, resultant forces, Equilibrium of forces, Law of parallelogram of forces, Law of triangle of forces and its converse, Law of polygon of forces, solution of simple engineering problems by analytical and graphical methods. Such as simple wall crane, jib crane etc. Determination of resultant of any number of forces in one plane acting upon a particle, Conditions of equilibrium of coplanar concurrent forces system. (10 Lectures)

UNIT II

Moment and couple, General conditions of Equilibrium Generalized theorem of moments, Application to simple problem on levers-Bell crank Lever, compound lever, steel yard, beams & wheels, lever safety valve, moment of couple, properties of a couple, simple applied problem such as pulley and shaft. **General conditions of Equilibrium:** General conditions of equilibrium, rigid body. Under the action of coplanar forces, statement of forces, Laws of equilibrium, moment law of equilibrium, application of above on body. (10 Lectures)

UNIT III

Friction: Types of friction: Stoical Limiting and dynamical friction statement of Laws of sliding friction, coefficient of friction, angle of friction: Problems on equilibrium of a body resting on a rough inclined plane, simple problems on friction, conditions of sliding and toppling. (10 Lectures)

UNIT IV

Stress and strain : Concept of stress and strain. Concept of various types of stress and Strains, Definition of tension, compression, shear, bending, torsion, concept of volumetric and lateral strain, Poisson's ratio, ultimate stress, Working stress, elasticity, Hook's Law, Load deformation diagram for mild steel and cast iron. Definition of modulus of elasticity, Yield point, modulus of rigidity and bulk modulus. (10 Lectures)

UNIT V

Beam and trusses; Definition of statically determinate and indeterminate trusses. Types of supports of tie and struts, Bow's notation space diagram, polar diagram, funicular polygon, calculation of reaction at the support of cantilever and simply supported beams and trusses graphically and Analytically, Graphical solution of simple determinate trusses with reference to forces diagram for determining the magnitude and nature of forces in its various members Analytical method; Methods of joints and method of sections (Simple problems only). (10 Lectures)

The question paper shall have weightage to numerical/ case study 50% and to theoretical 50%.

Project work

There will be a project work assigned to students by the subject faculty. It will be of 10 marks and will be evaluated by the faculty itself. The topic of the project will be decided by the faculty and students will work in a group of 3 – 5 on each topic. The topic should be related to the subject taught by the faculty and should have proper utility and importance to enhance his practical skill & knowledge.

Text Books

1. Bansal R.K., *Engineering Mechanics*, Laxmi Publication Pvt Ltd., Delhi.
2. Khurmi R.S., *Engineering Mechanics*, S. Chand & Co., Delhi.
3. Kapoor J.K., *Applied Mechanics*, Bharat Bharti Prakashan, Meerut.
4. Yadav K.S., *Engineering Mechanics*, Vayu Education of India.

Reference Books:

1. Kumar D.S., *Engineering Mechanics*, S.K. Kataria & Sons, Delhi.

CONCEPTS IN INFORMATION TECHNOLOGY

Third Semester

Course Code: DIP304

L	T	P	C
4	-	-	4

Course Contents:

Unit I

Concepts in computer & Programming; Computer Appreciation: Definition of electronic Computer, Generations, Characteristic and Application of Computers, Computer Hardware, CPU, Memory, Various I/O devices, Software, Types of Computer. (Lectures 08)

Unit II

Computer Languages: Classification & Program Methodology, Generations of Language, Translator: Interpreter, Assembler, Compiler, Software Development life cycle: Waterfall model.

Number System: Various codes, decimal, binary, octal, hexadecimal conversion. (Lectures 08)

Unit III

Internet and Web Technologies; Internet & World Wide Web: Hypertext Marks Language, WWW, Gopher, FTP, Web Browsers, Search Engines, Email. (Lectures 08)

Unit IV

Concepts in Operating System & Data Management: Elementary Concepts in Operating System, textual Vs GUI Interface, Introduction to DOS, MS Office Tools MS WORD, MS EXCEL, MS Power Point. (Lectures 08)

Unit V

Application of IT , E Commerce, Multimedia, and Entertainment.

Information Representation: Introduction to Information representation in Digital Media: Text, Image, graphics, Animation, Audio, Video etc, Introduction to JPEG & MPEG.

(Lectures 08)

The question paper shall have weightage to numerical/ case study 20% and to theoretical 80%.

Project work

There will be a project work assigned to students by the subject faculty. It will be of 10 marks and will be evaluated by the faculty itself. The topic of the project will be decided by the faculty and students will work in a group of 3 – 5 on each topic. The topic should be related to the subject taught by the faculty and should have proper utility and importance to enhance his practical skill & knowledge.

Text Books

1. Yadav, DS, *Foundations of IT*, New Age, Delhi.
2. Curtin, *Information Technology: Breaking News*, Tata Mo Grew Hill.
3. Rajaraman, *Introduction to Computers*, Prentice-Hall Indi

The question paper shall have weightage to case study 20% and to theoretical 80%.

Reference Books

1. Nelson, *Data Compression*, BPB.
2. Peter Nortans, *Introduction to Computers*, TME.
3. Leon & Leon, *Fundamental of Information Technology*, Vikas Publishing.
4. Kantar, *Managing Information System*.
5. CIS Tams, *Internet, An Introduction*, Tata Mc Grew Hill.

ELECTRICAL AND ELECTRONICS ENGINEERING MATERIALS

Third Semester

L	T	P	C
3	-	-	3

Course Code: DEE304

Course Contents

Unit 1

Classification

Classification of materials into conducting, semiconducting and insulating materials with reference to their atomic structure and energy bands.

Conducting Materials: Resistivity and factors affecting resistivity, such as temperature, alloying. Super conductivity and super conducting material. Low resistivity materials e.g. copper, aluminum and steel, their general properties as conductor e.g. resistivity, temperature co-efficient, mechanical properties, corrosion, solar ability, contact resistance and practical application. High resistivity materials: manganin, constantan nichrome, carbon, tungsten, their practical applications. **(8 Lectures)**

Unit 2

Insulating Materials

Properties of insulating material:- Electrical properties, Mechanical properties, Physical properties, Thermal properties, Chemical properties, Insulating materials and their application-Definition and classification of Thermo setting materials e.g. Phenol Formaldehyde, Resins (i.e. Bakelite), Thermo Plastic materials e.g. Polyvinyl Chloride (P.V.C.), Natural Insulating Materials- Mica and Asbestos, Gaseous Materials e.g. Air, Hydrogen and SF₆. **(8 Lectures)**

Unit 3

Magnetic Materials

B-H curve of magnetic materials, Classification of magnetic materials into soft and hard magnetic materials. Soft magnetic materials - high silicon alloy steel for transformers and low silicon alloy steel, for electric rotating machine cold rolled grain oriented and non-oriented steel, Nickel iron alloy, soft ferrites, their properties and uses. Hard magnetic materials - tungsten steel, chrome steel, cobalt steel, alnico, hard ferrites, their properties and applications. **(8 Lectures)**

Unit 4

Semiconductor Materials

Introduction, semiconductor and their applications, Different semiconductor materials used in manufacturing various semiconductors (Si & Ge), Material used for electronic components like resistor, capacitor, diode, transistors and inductors. **(8 Lectures)**

Unit 5

Special Purpose Materials:

Thermocouple, bimetals, leads soldering and fuses material, mention their applications, Introduction of various engineering materials necessary for fabrication of electrical machines such as motors, generators, transformers etc. **(8 Lectures)**

The question paper shall have weightage to numerical/ case study 20% and to theoretical 80%.

Project work

There will be a project work assigned to students by the subject faculty. It will be of 10 marks and will be evaluated by the faculty itself. The topic of the project will be decided by the faculty and students will work in a group of 3 – 5 on each topic. The topic should be related to the subject taught by the faculty and should have proper utility and importance to enhance his practical skill & knowledge.

Text Books:

1. Bhattacharya SK, *Electrical and Electronics Engineering Materials*, Khanna Publishers New Delhi.
2. Grover and Jamwal, *Electronics Components and Materials*, Dhampat Rai and Co. New Delhi.
3. Dhir SM, *Electrical Engineering Materials*, Tata Mc Graw Hill, New Delhi.

Reference Books:

1. Kapoor PL, *Electrical Engineering Materials*, Khanna Publishers, New Delhi.
2. Sharma BR and Others, *Electrical and Electronics Engineering Materials*, Sayya Parkashan.
3. DR. Arora, *Electrical and Electronics Engineering Materials*, Ishan Publications, Ambata City.
4. Dogra Rakesh, *Electrical Engineering Materials*, SK Kataria and Sons, New Delhi.

English Communication

Third Semester

Course Code: DIP 307

L	T	P	C
3	0	0	3

Course Content:

Unit I

Functional Grammar: Active, Passive voice, Conditional Sentences, Syntax, Concord, Common Errors.

(8 hours)

Practical (oral): To make students practice the above mentioned grammatical RULES in the practical classes.

(2 hours)

Unit II

Communication: Meaning & Importance of Communication, Process of Communication, Language as a tool of Communication.

(8 hours)

Practical (Oral): To make students speak on their understanding of Communication in English.

(2 hours)

Unit III

Writing Skills: Reporting events, Writing newspaper reports, Bio-data making, Writing of C.V. & Resumes, Writing job application.

(8 hours)

Practical (Oral): To make students practice writing on the above mentioned processes.

(2 hours)

Unit IV

Listening Skills: The listening process, hearing & listening, types of listening, Barriers to listening.

(8 hours)

Practical (oral): To make student develop the skills of listening & thus improve their speaking skills.

(2 hours)

Recommended Books:

1. Raman Meenakshi & Sharma Sangeeta – Technical Communication – Principles & Practices, - ONP, N. Delhi
2. Wren & Martin : High School English Grammar & Composition- S.Chand & Co. N.Delhi

NOTE:

This syllabus has been designed to improve the oral and written communication skills of students. The faculty members should put emphasis on practical (oral) activities for generating students' interest in language learning.

* Latest editions of all the suggested books are recommended.

ELECTRICAL AND ELECTRONICS ENGINEERING LAB
ELECTRICAL ENGINEERING LAB
Third Semester

Course Code: DIP351

L	T	P	C
-	-	4	2

PRACTICALS

- 1) To verify the Ohm's Law.
- 2) To verify that $R_e = R_1 + R_2 + \dots + R_n$ where R_1, R_2 etc. are resistances connected in series.
- 3) Verification of Kirchhoff's current and Voltage Laws applied to D.C. circuit.
- 4) To observe the A.C. and D.C. wave shape on C.R.O.
- 5) To study different types of practical transformer.
- 6) To verify that $1/R_e = 1/R_1 + 1/R_2 + \dots + 1/R_m$. Where $R_1, R_2, \dots, R_m$ are all resistances connected in parallel.

Evaluation of Practical Examination:- As per Annexure – A

BASIC ELECTRONICS (LAB)

Practical No.- 1

Object: To study, identify & test the passive Components, Resistor Compactor.

Practical No.- 2

Object:- To draw the V-I characteristics of P-N Junction Diode in forward and reverse Bias in the following:

- i) Silicon
- ii) Germanium

Practical No.- 3

Object :- Draw the input and output wave form of Half wave rectifier using semi conductor diode.

Practical No.- 4

Object :- Draw the input and output wave form of full wave rectifier using semi conductor diode.

Practical No.- 5

Object :- Draw input and output characteristics of Transistor in common base configuration.

Practical No.- 6

Object :- Draw the V-I characteristics of zener diode.

Evaluation of Practical Examination:- As per Annexure – A

INFORMATION TECHNOLOGY LAB

Third Semester

Course Code: DIP352

L	T	P	C
-	-	2	1

1. Create a document using functions: Save as, page number, Bullets and numbering.
2. Create a document using styles and Formatting options.
3. Create a document using different fonts.
4. Create a document, using the function page set up, & page preview, page color, page border, page no. then print that document.
5. Create a table & perform operation in it.
6. Create a table, chart in excel and implement all formula as addition, subtraction, multiplication and division.
7. How to use Mail Merge in MS Word.
8. Create a Power point presentation using slide designing.
9. Create, Save & print the power point presentation.
10. Create a power point presentation using clipart, Word art gallery & then add transition & Animation effects.

Evaluation of Practical Examination:- As per Annexure – A

ENGINEERING DRAWING

Third Semester

Course Code: DIP353

L	T	P	C
1	-	3	3

Course Contents:

1. Drawing, instruments and their uses.

- 1.1. Introduction to various drawing, instruments.
- 1.2. Correct use and care of Instruments.
- 1.3. Sizes of drawing sheets and their layouts.

2. (a) Lettering Techniques

1 Sheet

Printing of vertical and inclined normal single stroke capital letters and numbers.

(b) Conventional Representation:

Types of lines, Conventional representation of materials.

3. Introduction to Scales

1 Sheet

Necessity and use, R F

Types of scales used in general engineering drawing. Plane, diagonal and chord scales.

4. (a) Principles of Projection

- Orthographic, Pictorial and perspective.
- Concept of horizontal and vertical planes.
- Difference between I and III angle projections.
- Dimensioning techniques.

(b) Projections of points, lines and planes.

1 Sheet

5. Orthographic Projections of Simple

2 Sheet

Geometrical Solids: Edge and axis making given angles with the reference planes. Face making given angles with reference planes. Face and its edge making given angles with reference planes.

6. Section of Solids

1 Sheet

Concept of sectioning

Cases involving cutting plane parallel to one of the reference planes and perpendicular to the others. Cases involving cutting plane perpendicular to one of the reference planes and inclined to the other plane, true space of the section.

7. Development of Surfaces

1 Sheet

Parallel line and radial line methods of developments.

Development of simple and truncated surfaces (Cube, prism, cylinder, cone and pyramid).

8. Isometric Projection.

1 Sheet

Isometric scale

Isometric Projection of solids.

9. Orthographic projection:

1 Sheet

Nut and Bolt, Rivets and Riveted Joints.

10. Practice on auto cad:

To draw geometrical figures using line, circle, arc, polygon, ellipse, rectangle – erase and other editing commands and snap commands (two dimensional drawing only).

Books:

1. Bhatt N.D., *Engineering Drawing*, Charotar Publishing House Pvt. Ltd., Anand.
2. Upadhyay S.D., *Engineering Drawing*, Bharat Bharti Prakashan, Merrut.
3. Goyal B.K., *Engineering Drawing*, Asian Publishers, Muzaffarnagar.

Evaluation of Practical Examination:- As per Annexure – A

WORKSHOP PRACTICE

Third Semester

L	T	P	C
-	-	4	2

Course Code: DIP354

1. Carpentry Shop Work:

- Ex-1 Planning and sawing practice.
- Ex-2 Making of Lap Joint.
- Ex-3 Making of Mortise and tendon Joint
- Ex-4 Making of Bridle Joint.
- Ex-5 Making of Dovetail Joint.
- Ex-6 Making of any one utility articles such as wooden-picture frame, hanger, peg, name plates etc.

2. Fitting Shop:

- Ex-1 Hacks awing and chipping of M.S. flat.
- Ex-2 Filing and squaring of chipped M.S. job.
- Ex-3 Filing on square or rectangular M.S. piece.
- Ex-4 Making Bolt & Nut by Tap and Die set.
- Ex-5 To drill a hole in M.S. Plate and tapping the same to create threads as per need.
- Ex-6 Utility article-to prepare a screw driver or paper weight, double open mouth spanner for 18" hexagonal head of a bolt.

3. Welding Shop:

- Ex-1 Welding practice-Gas and Electric.
- Ex-2 Welding for lap joint after preparing the edge.
- Ex-3 Welding of Butt joint after preparation of the edge.
- Ex-4 'T' joint welding after preparation of edge.
- Ex-5 Spot welding, by spot welding Machine.
- Ex-6 Welding of Plastic by Hot strip method.

4. Machine Shop :

- Ex-1 Study & sketch of Lathe machine.
- Ex-2 Plane and step turning & knurling practice.
- Ex-3 Study & sketch of planning machine and plane a rectangle of cast iron.

Evaluation of Practical Examination:- As per Annexure – A

APPLIED MECHANICS LAB
Third Semester

Course Code: DIP355

L	T	P	C
0	0	3	2

LIST OF EXPERIMENTS

1. To verify the law of Polygon of forces.
2. To verify the law of parallelogram and triangle of forces.
3. To verify the law of principle of moments.
4. To find the coefficient of friction between wood, steel, copper and glass.
5. To find the reaction at supports of a simply supported beam carrying point loads only.
6. To find the forces in the jib & tie of a jib crane.
7. To find the forces in the members of a loaded roof truss. (King / Queen post truss)

Evaluation of Practical Examination:- As per Annexure – A

DATA STRUCTURES USING 'C'

Fourth Semester

L	T	P	C
3	1	-	4

Course Code: DCS401

Course Contents:

Unit-1

Fundamental Notations:- Problem solving concept, top down and bottom up design, structured programming, Concept of data types, variables and constants, Concept of pointer variables and constants.

(8 Lectures)

Unit-2

Arrays

Concept of Arrays, Single dimensional array, Two dimensional array, Storage strategy of multidimensional arrays, Operations on arrays with Algorithms (searching, traversing, inserting, deleting).

(8 Lectures)

Unit-3

Linked Lists:- Introduction to linked list and doubly linked list, Representation of linked lists in Memory, Traversing a linked list, Searching linked list, Insertion and deletion into linked list, Introduction to Circular link list, Doubly link lists.

(8 Lectures)

Unit-4

Stacks, Queues and Recursions:- Introduction to stacks, Representation of stacks, Implementation of stacks, Uses of stacks, Introduction to queues, Implementation of queues (with algorithm), Circular Queues, De-queues, Recursion.

(8 Lectures)

Unit-5

Traversing Binary Trees (Pre order, Post order and In order), Searching, inserting and deleting binary search trees, Introduction to Binary Search Tree.

Sorting and Searching :- Introduction, Search algorithm (Linear and Binary), Sorting algorithms (Bubble Sort, Insertion Sort, Selection Sort, Merge Sort).

(8 Lectures)

The question paper shall have weightage to case study 60% and to theoretical 40%.

Project work

A project work will be assigned to the students by the subject faculty. It will be of 10 marks and will be evaluated by the faculty itself. The topic of the project will be decided by the faculty and students will work in a group of 3 – 5 on each topic. The topic should be related to the subject taught by the faculty and should have proper utility and importance to enhance his practical skill & knowledge.

TEXT BOOKS:-

- 1) Salaria RS, *Data Structures and Algorithm Using C*, Khanna Book Publishing Co. (P) Ltd. New Delhi
- 2) Patel R.B., *Expert data structures with C* – Khanna Publishers, New Delhi.
- 3) Schaum's Outline Series – *Data structures* – McGraw Hill, Delhi.
- 4) Sanjiv Sofat, *Data Structures*, Khanna Publishers, New Delhi.
- 5) Tanenbaum, *Data Structures*, Prentice Hall of India, New Delhi.
- 6) Schaum's Series, *Data Structure*, McGraw Hills Publications, Delhi.
- 7) Tenenbaum, *Data Structure using Pascal*, Prentice Hall of India, Delhi.
- 8) Kruse Robert, *Data Structure using C*, Prentice Hall of India, Delhi.
- 9) Kanekar Yashwant, *Data Structure through C*, BPB Publications, Delhi.
- 10) Srivastava SK, Srivastava Deepali, *Data Structure through C in depth*, BPB Publications Delhi.

REFERENCE BOOKS:-

- 1) Glenn W. Rowe, *Introduction to Data Structure and Algorithm with C++*, Prentice Hall of India, Delhi.
- 2) Chattopadhyay Sameeran, Chottopadhyay Matangini, *Data Structure through "C" Language*, BPB Publications, Delhi.
- 3) DOEACC, *Data Structure through "C" Language*, BPB Publications, Delhi.
- 4) Shukla, *Data Structure using "C" Lab Workbook*, BPB Publications, Delhi.

DATABASE MANAGEMENT SYSTEM (DBMS)

Fourth Semester

	L	T	P	C
Course Code: DCS402	3	1	-	4

Course Contents:

Unit-1

Database Systems; Database and its purpose, Characteristics of the database approach, Advantages and disadvantages of database systems. Classification of DBMS, Database Administrators, Introduction to SQL, DDL, DML. **(8 Lectures)**

Unit-2

Database System Concepts and Architecture:- Data models, schemas, instances, data base state. DBMS Architecture; The External level, The conceptual level, The internal level, Mappings. Data Independence; Logical data Independence, Physical data Independence. Database Languages and Interfaces; DBMS Language, DBMS Interfaces. **(8 Lectures)**

Unit-3

Data Modeling using E.R. Model (Entity Relationship Model) :- Data Models Classification; File based or primitive models, traditional data models, semantic data models. Entities and Attributes, Entity types and Entity sets, Key attribute and domain of attributes, Relationship among entities. **(8 Lectures)**

Unit-4

Relational Model:- Relational Model Concepts: Domain, Attributes, Tuples and Relations. Relational constraints and relational database schemes; Domain constraints, Key constraints and constraints on Null. Relational databases and relational database schemes, Entity integrity, referential integrity and foreign key. **(8 Lectures)**

Unit-5

Normalization:- Non-loss decomposition and functional dependencies, First, Second and Third normal forms, Boyce/Codd normal form, Joining concepts, Transaction control, Locking techniques. **(8 Lectures)**

The question paper shall have weightage to case study 20% and to theoretical 80%.

Project work

A project work will be assigned to the students by the subject faculty. It will be of 10 marks and will be evaluated by the faculty itself. The topic of the project will be decided by the faculty and students will work in a group of 3 – 5 on each topic. The topic should be related to the subject taught by the faculty and should have proper utility and importance to enhance his practical skill & knowledge.

TEXT BOOKS

- 1) Vig Renu and Walia Ekta, *Fundamentals of Database Management Systems*, ISTE, Publication, New Delhi.

REFERENCE BOOKS:-

- 1) Leon Alexis and Leon Mathews , *Database Management Systems*; Vikas Publishing House Pvt. Ltd., New Delhi

COMPUTER ORGANIZATION & MICROPROCESSOR

Fourth Semester

L	T	P	C
3	1	-	4

Course Code: DCS403

Course Contents:

Unit I

Logic Gates: BUFFER, Logic gates, Boolean algebra and the 'Demourgon's Theorems, Half adder, full adder, half subtractor, full subtractor.

Microprocessor: Evolution of Micriprocessor, Microcomputer system, Architecture of a Microprocessor (With reference to 8085 microprocessor) Bus, bus organization of 8085, Block diagram of 8085 and function of each block, Pin details of 8085. **(Lecture 8)**

Unit II

Memory: Basic concept and hierarchy, Memories and I/O interfacing, Concept of memory mapping, partitioning of total memory space. N* M bit RAM, Expansion of word length and capacity, static and dynamic RAM.

Cache memory:- concept and design issues, address mapping and page replacement.

Auxiliary memories:- Magnetic disk, magnetic tape and optical disks, Virtual memory: concept and Implementation. **(Lecture 8)**

Unit-III

Central Processing Unit:- Addition and subtraction of signed numbers ,Signed operands multiplication, Booth's algorithm, Division algorithm. Floating point arithmetic operations, general registers organization, stack organization and addressing modes.

Programming: Programming (with respect to 8085 microprocessor), Brief idea of machine and assembly languages, Machines and Mnemonic codes. **(Lectures 08)**

Unit-IV

Control Unit:- Instruction types, Edge triggered And Level triggered, Instructions formats, instruction cycles and sub cycles (fetch and execute etc) , execution of a complete instruction. Explanation of the instructions groups: Data transfer groups.

Arithmetic Group, Logic Group, microprogramming sequencing : wide branch addressing, micro-instruction with next address field, pre-fetching microinstructions. **(8 Lectures)**

Unit-V

Input / Output: - Peripheral devices (8255 PPI, 8257 DMA controller), I/O interface, I/O ports, Interrupts: types of interrupts .Modes of Data Transfer: Programmed I/O, I/O and Direct Memory Access, Serial Communication: Synchronous-asynchronous communication, standard communication interfaces. **(8 Lectures)**

The question paper shall have weightage to case study 40% and to theoretical 60%.

Project work

A project work will be assigned to the students by the subject faculty. It will be of 10 marks and will be evaluated by the faculty itself. The topic of the project will be decided by the faculty and students will work in a group of 3 – 5 on each topic. The topic should be related to the subject taught by the faculty and should have proper utility and importance to enhance his practical skill & knowledge.

Text Books:

1. Patterson, *Computer Organisation and Design*, Elsevier Pub, Delhi.
2. William Stalling, “ *Computer Organization*”, PHI, Delhi.
3. Vravice, Hamacher & Zaky, “*Computer Organization*”, TMH, Delhi.
4. Mano, “ *Computer System Architecture*”, PHI, Delhi.
5. Ramesh S Gaonker, *Microprocessor Architecture, Programming and Applications with 8080/8085*, Willey Eastern Ltd. New Delhi
6. Dr BP Singh, *Microprocessor and Microcontrollers*, Galgotia Publications, New Delhi

Reference Book:

1. John P Hays, “ *Computer Organization*”, McGraw Hill, Delhi.
2. Tannenbaum, “ *Structured Computer Organization*”, PHI, Delhi.
3. Refiquzzaman, *Microprocessor and Microcomputers*, Prentice Hall of India Ltd., New Delhi.
4. Mathur, *Introduction to Microprocessors*, Tata McGraw Hill, New Delhi.

SOFTWARE ENGINEERING & INFORMATION SYSTEM

Fourth Semester

Course Code: DCS474	L	T	P	C
Course Contents:	4	-	-	4

UNIT I

Introduction to software engineering, Importance of software, Software Characteristics, Software Components, Software Applications, Software Crisis, Software Development Life Cycle: Water Fall Model, The Incremental Model, Prototyping, Spiral Model. **(8 Lectures)**

UNIT II

Software Process, Role of management in software development. Design principles and problem partitioning, Top down and bottom up-design approach, functional versus object oriented approach, The Management spectrum, quality assurance, project monitoring, risk management, Cohesion and Coupling. **(8 Lectures)**

UNIT III

Software Testing, Level of Testing, Test plan, Verification & validation, debugging, cost estimation, ISO 9000 certification for software industry, SEI capability maturity model, comparison between ISO & SEI CMM, Reverse Software Engineering, **(8 Lectures)**

UNIT IV

Introduction to Information system, Types of Information system, Components of IS, MIS, Importance and Need of MIS, Structure of MIS, Information flow in MIS, Network and Internet, Information System Design, IT Infrastructure Library, Decision Support System. **(8 Lectures)**

UNIT V

Problem with MIS, Causes and solution, Problem Management, Database Backup & Storage, Computer and internet Security, Introduction to Cyber Ethics, Intellectual Property, Cyber Crimes, Ethical challenges, Electronic Data Interchange, Smart Card, Expert Systems. **(8 Lectures)**

The question paper shall have weightage to case study 10% and to theoretical 90%.

Project work

A project work will be assigned to the students by the subject faculty. It will be of 10 marks and will be evaluated by the faculty itself. The topic of the project will be decided by the faculty and students will work in a group of 3 – 5 on each topic. The topic should be related to the subject taught by the faculty and should have proper utility and importance to enhance his practical skill & knowledge.

Text Books:-

1. Goel Ritendra, *Computer Application in Management*, New Age International Publishers, New Delhi.
2. Chowdhury G.G., *Text Retrieval Systems in information Management*, New Age International Publishers, New Delhi.
3. Pressman, Roger S., *“Software Engineering: A Practitioner’s Approach”*, McGraw Hill, Delhi.
4. Jalote, Pankaj, *“Software Engineering”*, Narosa, Delhi.
5. Alexis, Leon and Mathews Leon, *“Fundamental of Software Engineering”*, Vikas Publications, Delhi.

Reference Book:

1. Sommerville, Ian, *“Software Engineering”*, AWL, Delhi.
2. Bell, *“Software Engineering for students”*, Pearson Education, Delhi.
3. Bhunia C.T., *Information Technology Network and Internet* by, New Age International Publishers, New Delhi.

COMPUTER NETWORK

Third Semester

L	T	P	C
3	-	-	3

Course Code: DCS475

Course Contents:

Unit-1

Networks Basics:- What is network, Network Criteria, Peer-to –peer Network, Client-Server Network, LAN, MAN and WAN, Topologies, Transmission media. **(8 Lectures)**

Unit-2

OSI Model:- Standards, OSI Reference Model, OSI Physical layer concepts, OSI Data-link layer concepts, OSI Networks layer concepts, OSI Transport layer concepts, OSI Session layer concepts, OSI presentation layer concepts, OSI Application layer concepts. **(8 Lectures)**

Unit-3

Introduction to TCP/IP :- TCP/IP Protocols, Concept of physical and logical addressing, Different classes of IP addressing, Subnetting and supernetting, IPV4 vs IPV6 .

Network Architecture:- Ethernet Specification and Standardization: 10 mbps (Traditional Ethernet), 100 mbps (Fast Ethernet) and 1000 mbps (Gigabit Ethernet), Concept of LeasedLines and Backbone Lines, Channel allocation **(8 Lectures)**

Unit-4

Network Connectivity:- Network connectivity Devices, NICs, Hubs, Repeaters, Multiplexers, Modems, Routers and Protocols, Firewall, ATM, VOIP, Remote Procedure Call, Connection Management. **(8 Lectures)**

Unit-5

Application Layer, File transfer, Data access management, Virtual Private Network, Virtual Terminal,internet and public network.

Wireless Networking:- Basics of Wireless, Wireless LAN, Wi-Fi, WiMax and Broadband Wireless and Bluetooth technology,Email . **(8 Lectures)**

The question paper shall have weightage to case study 20% and to theoretical 80%.

Project work

A project work will be assigned to the students by the subject faculty. It will be of 10 marks and will be evaluated by the faculty itself. The topic of the project will be decided by the faculty and students will work in a group of 3 – 5 on each topic. The topic should be related to the subject taught by the faculty and should have proper utility and importance to enhance his practical skill & knowledge.

Text Books:-

1. Tanenbaum, *Computer Networks*, Prentice Hall of India, New Delhi.
2. Forouzan, *Data Communications and Networking*, Tata McGraw Hill, New Delhi.
3. William Stallings, *Data and Computer Communication*, Pearson Education, New Delhi
4. *Area Networks by Stan Schatt*, Prentice Hall of India, New Delhi
5. Tami Evanson, *Network+ Lab manual*, - BPB Publications, Delhi.
6. *Networking Essentials* – BPB Publications New Delhi
7. *Computer Network and Communications* , Cyber Tech Publications, New Delhi.

References Books:-

1. Linux – The complete Reference by Richard Peterson, Tata McGraw Hill, New Delhi.
2. Issac Yates, *Linux – Install and Configuration Black Book*, IDG Books India Private Limited, Delhi.
3. *Unleashed Linux*, TechMedia Publishers, New Delhi.

OPERATING SYSTEM

Fourth Semester

Course Code: DCS476

L	T	P	C
3	-	-	3

Course Contents:

Unit -I

Introduction: Operating System and Function, Evolution of Operating System, Batch, Interactive, Time Sharing and Real Time System, System Protection. Operating System Structure, System Components, Operating System Services. **(8 Lectures)**

Unit - II

Concurrent Processes: Process Concept, Principle of Concurrency, Producer / Consumer Problem, Critical Section, Problem, Semaphores, Classical Problems in Concurrency, Inter Processes Communication, Process Scheduling. **(8 Lectures)**

Unit - III

CPU Scheduling: Scheduling Concept, Performance Criteria Scheduling Algorithm, Multiprocessor Scheduling. Deadlock: System Model, Deadlock Characterization, Prevention, Avoidance and Detection, Recovery From Deadlock. **(8 Lectures)**

Unit - IV

Memory Management: Basic Machine, Resident Monitor, Multiprogramming with Fixed Partition, Multiprogramming With Variable Partition, Multiple Base Register, Paging, Segmentation, Paged Segmentation, Virtual' Memory Concept, Demand Paging, Performance, Paged Replaced Algorithm. **(8 Lectures)**

Unit - V

I/O Management & Disk Scheduling: I/O Devices and The Organization of I/O Function, I/O Buffering, Disk I/O, Operating System Design Issues. File System: File Concept, File Organization and Access Mechanism, File Directories, File Sharing. **(8 Lectures)**

The question paper shall have weightage to case study 20% and to theoretical 80%.

Project work

A project work will be assigned to the students by the subject faculty. It will be of 10 marks and will be evaluated by the faculty itself. The topic of the project will be decided by the faculty and students will work in a group of 3 – 5 on each topic. The topic should be related to the subject taught by the faculty and should have proper utility and importance to enhance his practical skill & knowledge.

Text Book:

1. Milenekovie, "Operating System Concept", McGraw Hill, Delhi.
2. Petersons, "Operating Systems", Addison Wesley, Delhi.
3. Dietal, "An Introduction to Operating System", Addison Wesley, Delhi.
4. Tannenbaum, "Operating System Design and Implementation", PHI, Delhi.
5. Gary Nutt, "Operating System, A Modern Perspective", Addison Wesley, Delhi.

References Books:

1. Stalling, Willium, "Operating System", Maxwell Macmillan, Delhi.
2. Silveschatza, Peterson J, "Operating System Concepts", Willey, Delhi.
3. Crowley, "Operating System", TMH, Delhi.

Technical Communication

Fourth Semester

Course Code: DIP 401

L	T	P	C
3	0	0	3

Course Content:

Unit I

Pre-requisites of Technical Written Communication: One Word Substitution, Spelling process, words often confused and misused, Technical terms. (8Lectures)

Practical (oral):

To make students practice the above mentioned topics & take care of the technical terms & also use those in different sentences. (2Lectures)

Unit II

Technical Communication: Nature, origin & development, salient features, significance, Difference between Technical Communication & General Writing. (8Lectures)

Practical (oral) : To make students speak on the development of Technical Communication.

(2Lectures)

Unit III

Forms of Technical Communication: What is a Report ? Characteristics of Report, steps to be followed for Report writing, Structure of Report, Importance of Report Writing. (8Lectures)

Practical (oral): To make students practice how to write a report and then speak on the subject matter of the report. (2Lectures)

Unit IV

Technical Proposal: What is Proposal ? Significance of proposal, format of proposal, characteristics' of a good proposal. (8Lectures)

Practical (oral): To make students practice writing a proposal.

(2Lectures)

Recommended Books:

1. Raman Meenakshi & Sharma Sangeeta – Technical Communication – Principles & Practices, - ONP, N. Delhi.
2. Mohan K& Sharma R- Business correspondence and Report writing TMH New Delhi.

NOTE:

This syllabus has been designed to improve the oral and written communication skills of students. The faculty members should put emphasis on practical (oral) activities for generating students' interest in language learning.

* Latest editions of all the suggested books are recommended.

DATA STRUCTURE USING C LAB

Fourth Semester

Course Code: DCS461

L	T	P	C
-	-	4	2

Write Program in 'C' for the following:

1. WAP to calculate Sum & average of N numbers.
2. WAP using switch case to find maximum and minimum out of 3 numbers a, b & c.
3. WAP to print all the number between 1 to 100 which are dividing by 9.
4. WAP to find addition of two matrix of n*n order.
5. Sorting programs: Bubble sort, Merge sort, Insertion sort, Selection sort.
6. Searching programs: Linear Search, Binary Search.
7. Array implementation of Stack, Queue, Circular Queue.
8. Implementation of Stack, Queue.
9. Implementation of Binary tree.
10. Program for Tree Traversals (preorder, inorder, postorder).

Evaluation of Practical Examination:- As per Annexure – A

DATA BASE MANAGEMENT SYSTEM LAB
Fourth Semester

Course Code: DCS452

L	T	P	C
-	-	4	2

The program to be implemented using SQL:

1. Create the Database & Table using SQL.
2. Entering the values in Database using insert & delete option.
3. Updation of the tables.
4. WAP for joining (left,right,equivqlent).
5. Create a table using primary , Candidate & foreign keys.
6. Implementation of connectivity of front end to back end.
7. Implement Aggregate function.
8. Searching a content in a table.

Evaluation of Practical Examination:- As per Annexure – A

COMPUTER ORGANIZATION & MICROPROCESSOR LAB

Forth Semester

Course Code: DCS462	L	T	P	C
	-	-	4	2

LIST OF PRACTICALS

1. Study of 8085 Microprocessor Kit used in laboratory Familiarization with Kit and identification of its various parts like keyboard, Memory, Timer, Interrupt Controller, Display Unit, Interface Unit.

2. Writing an assembly language program using mnemonics and test them on 8 BIT

MICROPROCESSOR KIT

☐ Addition of two, 8 bit numbers.

☐ Subtraction of 8 bit numbers.

☐ Multiplication of 8 bit numbers.

☐ Division of 8 bit numbers.

3. Some exercises of assembly language programs using a 8255 input & output ports.

4. To identify various components, devices and sections of computer.

5. To Study the motherboards

6. To interconnect the system unit with the video monitor, mouse and key board and test the operation of the computer.

7. To connect various add on cards and I/O devices to a computer motherboard and test their working.

Evaluation of Practical Examination:- As per Annexure – A

COMPUTER NETWORK LAB

Third Semester

Course Code: DCS463

L	T	P	C
-	-	2	1

LIST OF PRACTICALS

1. . Identification of various networks components
 - connections, BNC, RJ-45,
 - Cables: Co-axial, twisted pair, UTP
 - NIC (network interface card)
 - Switch, hub
2. Preparing of networks
3. Establishment of a LAN
4. Use of protocols in establishing LAN
5. Trouble shooting of networks
6. Installation of network device drivers
7. Installation of networks (Peer to Peer Networking, client server interconnection)
8. Use/installation of proxy server

Evaluation of Practical Examination:- As per Annexure – A

OPERATING SYSTEM LAB (LINUX)

Fourth Semester

L	T	P	C
-	-	2	1

Course Code: DCS464

LIST OF PRACTICALS

Installing Linux

1. Creating and managing user accounts.
2. Practice on Linux commands.
3. Practice on VI (Visual Interface) commands.
4. Write and execute at least 10 programmes in Linux using shells such as
 - Factorial of numbers
 - Even/odd numbers
 - Fibonacci series
 - Prime numbers
 - Arrange of numbers
 - Reverse of numbers
 - Lower case to upper case
 - Greatest of three numbers etc.
5. Installing and configuring X-windows
6. Create file and folder
7. Searching a file
8. Installation of device drivers
9. Creating user accounts
10. Customizing desktop
11. Setting monitor resolution

Evaluation of Practical Examination:- As per Annexure – A

Recommended Books

1. Richard Peterson, *Linux – The Complete Reference*, Tata McGraw Hill, New Delhi
2. Die Annleblanc and Issac Yates, *Linux – Install and Configuration Black Book*, IDG Books India Private Ltd., Delhi.

COMPUTER GRAPHICS

Fifth Semester

Course Code: DCS 501

L	T	P	C
3	2	-	5

Course Contents:

Unit-1

Graphic Systems: Introduction to Computer Graphics, Display devices, Types, Applications of display devices,

Scan conversion and Output Primitives:- Scan converting the point, Scan converting the straight line - Bresenham's line algorithm, Scan converting a circle - Defining a circle, Bresenham's circle algorithm, Region filling - introduction, flood filling, boundary filling. **(8 Lectures)**

Unit-2

Graphic primitives in Algorithms, Point plotting, line drawing algorithms – DDA algorithms, Bresenham's line algorithms, circle-generating algorithms, ellipses

Two-Dimensional Transformations:- Basic transformations-translation, scaling, rotation, matrix representations and homogeneous coordinates, composite transformations, viewing transformation. **(8 Lectures)**

Unit-3

Windowing and Clipping Techniques:-Windowing concepts, clipping algorithms, area clipping, line clipping, polygon clippings, text clipping, blanking, window to-viewpoint transformation, Cohen Sutherland clipping algorithm. **(8 Lectures)**

Unit-4

2-D and 3-D Graphics: Three dimensional transformation, Z-buffer algorithm, Curve: Bezier, B-spline surface. Concept of Projection. **(8 Lectures)**

Unit-5

Perspective and Parallel transformations, Animation: Introduction, Types, Applications, Languages. Image: Visual effect (Aliasing & Anti Aliasing). **(8 Lectures)**

The question paper shall have weightage to numerical/ case study 10% and to theoretical 90%.

Project work

A project work will be assigned to the students by the subject faculty. It will be of 10 marks and will be evaluated by the faculty itself. The topic of the project will be decided by the faculty and students will work in a group of 3 – 5 on each topic. The topic should be related to the subject taught by the faculty and should have proper utility and importance to enhance his practical skill & knowledge.

TEXT BOOKS:

1. Roy A Plastock and Gordon Kalley, *Theory and problems of Computer Graphics*, Schaum's Outline series McGraw Hill Publishers, Delhi.
2. Steven Harrington, *Computer Graphics Programming Approach*.

REFERENCE BOOKS:

1. Rajaraman A, *Computer Graphics for Engineers*, Narosa Publishing House Pvt Ltd Daryaganj, New Delhi 110002.

JAVA PROGRAMMING

Fifth Semester

	L	T	P	C
Course Code: DCS 502	3	2	-	5

Course Contents:

Unit I

Core Java: Introduction, Operator, Data type, Variable, Arrays, Control Statements, Methods & Classes, Inheritance, Package and Interface, Exception Handling, Multithread, I/O. **(8 Lectures)**

Unit II

Java Applet, String handling, Networking, Event handling, Introduction to AWT, AWT controls, Layout managers, Menus, Images, Graphics. **(8 Lectures)**

Unit III

Java Swing: Creating a Swing Applet and Application, Programming using Panes, Pluggable Look and feel, Labels, Text fields, Buttons, Toggle buttons, Checkboxes, Radio Buttons, View ports, Scroll Panes, Scroll Bars, Lists, Combo box, Progress Bar, Menus and Toolbars, Layered Panes, Tabbed Panes, Split Panes, Layouts, Windows, Dialog Boxes. **(8 Lectures)**

Unit IV

JDBC: The connectivity Model, JDBC/ODBC Bridge, java.sql package, connectivity to remote database, navigating through multiple rows retrieved from a database. **(8 Lectures)**

Unit V

Java Servlets: Served basics, Servlet API basic, Life cycle of a Servlet, Running Servlet, Debugging Servlets, Thread-safe Servlets, Introduction to Java Server Pages (JSP). **(8 Lectures)**

The question paper shall have weightage to numerical/ case study 70% and to theoretical 30%.

Project work

A project work will be assigned to the students by the subject faculty. It will be of 10 marks and will be evaluated by the faculty itself. The topic of the project will be decided by the faculty and students will work in a group of 3 – 5 on each topic. The topic should be related to the subject taught by the faculty and should have proper utility and importance to enhance his practical skill & knowledge.

Text Books:

1. Margaret Levine Young, “*The Complete Reference Internet*”, TMH, Delhi.
2. Naughton, Schildt, “*The Complete Reference JAVA2*”, TMH, Delhi

Reference Books:

1. Balagurusamy E, “*Programming in JAVA*”, TMH, Dlehi.
2. Dustin R. Callway, “*Inside Servlets*”, Addison Wesley, Delhi.
3. Mark Wutica, “*Java Enterprise Edition*”, QUE
4. Steven Holzner, “*Java2 Black book*”, Dreamtech

MULTIMEDIA

Fifth Semester

Course Code: DCS 503

L	T	P	C
3	2	-	5

Course Contents:

Unit 1

Introduction to multimedia, Evolution of Multimedia, Objects of Multimedia, hypertext, hyper graphics, animation, Scope of Multimedia in Business, Multimedia H/W & S/W. **(8 Lectures)**

Unit 2

Multimedia Hardware : OCR, touch-screen, scanners, digital cameras, speakers, printers, plotters, optical disks and drives as CD-ROM and DVD. multimedia networks, text, sound (MIDI), Audio, Video. **(8 Lectures)**

Unit 3

Image and sound file formats, multimedia file formats, compression, standards and techniques, Macromedia products, Basic drawing techniques, multimedia operating systems. **(8 Lectures)**

Unit 4

Photo-shop workshop, image editing tools, specifying and adjusting colors, using gradient tools, selection and move tools, Sampling variables. **(8 Lectures)**

Unit 5

Multimedia Authoring Tools:- Types of Authoring programmes – Icon based, Time based, object oriented working in macromedia flash, exploring interface using selection of PEN tools. Working with drawing and painting tools, applying colour viewing and manipulating time line, animating, processing, guiding layers, importing and editing sound and video clips in flash. **(8 Lectures)**

The question paper shall have weightage to numerical/ case study 10% and to theoretical 90%.

Project work

A project work will be assigned to the students by the subject faculty. It will be of 10 marks and will be evaluated by the faculty itself. The topic of the project will be decided by the faculty and students will work in a group of 3 – 5 on each topic. The topic should be related to the subject taught by the faculty and should have proper utility and importance to enhance his practical skill & knowledge.

TEXT BOOKS:-

1. William Casanova and Molina, *Multimedia An Introduction*; Prentice Hall of India, New Delhi
2. Vaughan, *Multimedia Making it work*, Tay
3. *Photo-shop for Windows Bible*, Deke Maclelland IDG Books India, Pvt. Ltd., New Delhi.
4. Hillman, *Multimedia Technology and Application*, Galgotia Publications, New Delhi

REFERENCE BOOKS

1. *Flash 5 Bible* by Rein Hardit, IDG Books India Pvt. Ltd, Delhi.
2. *Flash 5 in easy steps*, Vandome IDG Books India Pvt. Ltd, Delhi.
3. Li and Drew, *Fundamentals of Multimedia*, Pearson Publications, Delhi.

OBJECT ORIENTED PROGRAMMING IN C++

Fifth Semester

Course Code: DCS 504

L	T	P	C
3	1	-	4

Course Contents:

Unit-1

Introduction and Features:- Fundamentals of object oriented programming – procedure oriented programming Vs. object oriented programming (OOP). Object oriented programming concepts – Classes, reusability, encapsulation, inheritance, polymorphism, Abstraction. **(8 Lectures)**

Unit-2

Language Constructs:- Review of constructs of C used in C++ : variables, types and type declarations, user defined data types; increment and decrement operators, relational and logical operators; if then else clause; conditional expressions, input and output statement, loops, switch case. **(8 Lectures)**

Unit-3

Classes and Objects:- Class creation, Object accessing class members, Private Vs Public, Constructor and Destructor Objects.

Member Functions:- Method definition, Inline functions implementation, Constant member functions Friend Functions ,Overloading, operator overloading, function overloading, constructor overloading. **(8 Lectures)**

Unit-4

Inheritance:- Definition of inheritance, Types of inheritance, protected data, private data, public data, inheriting constructors and destructors, constructors and destructors of derived classes, virtual functions. **(8 Lectures)**

Unit-5

Polymorphism and Virtual Functions:- Polymorphism, Types of Polymorphism, Virtual functions, pure virtual functions, different operation on the file, creation of file streams, stream classes, header files, updating a file, opening and closing a file. **(8 Lectures)**

The question paper shall have weightage to numerical/ case study 70% and to theoretical 30%.

Project work

A project work will be assigned to the students by the subject faculty. It will be of 10 marks and will be evaluated by the faculty itself. The topic of the project will be decided by the faculty and students will work in a group of 3 – 5 on each topic. The topic should be related to the subject taught by the faculty and should have proper utility and importance to enhance his practical skill & knowledge.

TEXT BOOKS

2. KR Venugopal and Rajkumar, T Ravishankar, *Mastering C++*; Tata McGraw hill Publishing Co. Ltd., New Delhi.
3. E. Balaguruswamy, *Object Oriented Programming in C++*, TMH Publishing Co. Ltd, New Delhi.
4. Robert Lafore, *C++*, Galgotia Publications Pvt. Ltd., Daryaganj, New Delhi.
5. Arora Vipan, *Object Oriented Programming using C++*; Eagle Parkhashan Jalandhar.
6. Gupta & Gupta, *Object Oriented Programming in C++*., Ishan Publication, Delhi.
7. Rajaram R , *Object Oriented Programming and C++*; New Age International (P) Ltd., Publishers, New Delhi

REFERENCE BOOKS

1. Singh Gurupkar, *Object Oriented Programming using C++*.
2. John R. Hubbard, *Schaum's Outline of Programming with C++*.

Communication Technique Fifth Semester

Course Code: DIP 501

L	T	P	C
3	0	0	3

Course Content:

Unit I

Oral Communication: Principles of effective Oral Communication, Vitals of Communication, Interpersonal Communication, persuasive Communication. **(8 hours)**

Practical (oral): Practice of oral Communication. **(2 hours)**

Unit II

Presentation Strategies: Purpose, Audience & Locale, Audio-visual aids, Body Language, Voice dynamics. **(8 hours)**

Practical (oral): Making students develop presentation skills. **(2 hours)**

Unit III

Speaking Skills: Improving voice & speech, Art of public speaking, Dealing with the Boss, Dealing with subordinates. **(8 hours)**

Practical (oral): Making the students speak on topic. **(2 hours)**

Unit IV

Group Discussion: Tips & Style. **(8 hours)**

Practical (Oral): To make students participate in G.D. **(2 hours)**

Recommended Books:

1. Raman Meenakshi & Sharma Sangeeta – Technical Communication – Principles & Practices, - ONP, N. Delhi.
2. Mitra Barun K.-Effective Technical Communication –O.U. P N.Delhi.

NOTE:

This syllabus has been designed to improve the oral and written communication skills of students. The faculty members should put emphasis on practical (oral) activities for generating students' interest in language learning.

*** Latest editions of all the suggested books are recommended.**

SOCIAL, PSYCHOLOGICAL AND ECONOMICS FACTORS*

Fifth Semester

Course Code: DIP 502 /603

L	T	P	C
3	-	-	3

Course Content:

Unit-I

Introduction to Industrial Psychology – definition, scope and importance

Unit-II

Motivation: Meaning, factors, motivation theories (Maslow, Herzberg and McGregor); understanding stress and its consequences, causes of stress, managing stress; group dynamics: features of group, group cohesiveness

Unit-III

Work Environment: Design of work place; fatigue: causes and prevention, work place boredom, accidents and safety.

Conflict: Concept, sources and types

Unit –IV

Constituents of Indian economy: - Agriculture, Industry and Service;

Innovation and Entrepreneurship: Industrial growth in India, role and challenges of small scale industries, sources of funding for small scale industries, industrial sickness

Unit –V

Privatization and globalization in India

Problems of industry- technology, waste disposal, industrial law and dispute

Project work

A project work will be assigned to the students by the concerned subject faculty. It will carry 10 marks and will be evaluated by the faculty itself. The topic of the project will be decided by the faculty. The students will work in a group of 3 – 5 on each topic. The topic should be related to the subject taught by the faculty and should have proper utility and importance to enhance his practical skill & knowledge.

References:

1. Miner J.B. (1992) Industrial/Organizational Psychology. McGraw Hill.
2. Blum & Naylor (1982) Industrial Psychology. Its Theoretical & Social Foundations CBS Publication.
3. Aswathappa K. (2008). Human Resource Management, New Delhi: Tata McGraw Hill.
4. [Ramnath Sharma](#) and [S. S Chandra](#) Advanced Industrial Psychology: Atlantic publishers, New Delhi
5. Vasant Desai, Small Scale Industries and Entrepreneurship, Himalaya publications
6. Ruddar Dutt and K.P.M. Sundaram, Indian Economy, S. Chand Publications
6. Samuelson, Economics, Tata McGraw Hill

COMPUTER GRAPHICS LAB
Fifth Semester

Course Code: DCS 551	L	T	P	C
	-	-	4	2

Write the following programs in C:

1. Write a program to draw a pixel.
2. Write a program to draw a line using DDA algorithm.
3. Write a program to draw a line using Bresenham's algorithm.
4. Write a program to draw a circle using Bresenham's algorithm.
5. Write a program to draw ellipsoid.
6. Write a program to rotate a triangle, line & a rectangle.
7. Write a program to shearing triangle, line & a rectangle.
8. Write a program to translate triangle, line & a rectangle.

Evaluation of Practical Examination:- As per Annexure – A

JAVA PROGRAMMING LAB

Fifth Semester

Course Code: DCS 552

L	T	P	C
-	-	4	2

LIST OF PRACTICAL:

1. Write a program in Java for illustrating, overloading.
2. Write a program in Java for illustrating overriding.
3. Write a program in Java for illustrating various forms of inheritance.
4. Write a program to create packages and multiple threads in Java.
5. Write a program in Java using Layout manager create different applications.
6. Write programs in Java to create and manipulate Text Area, Canvas, Scroll Bars, Frames and Menus using swing/AWT.
7. Using Java create Applets.
8. Use Java Language for Client Server Interaction with stream socket connections.

Evaluation of Practical Examination:- As per Annexure – A

MULTIMEDIA LAB
Fifth Semester

Course Code: DCS 553

L	T	P	C
-	-	2	1

LIST OF PRACTICAL

1. Configuring multimedia devices to PC (Personal computer)
2. Installing and use of various multimedia devices
 - i. Scanner
 - ii. Digital camera, web camera
 - iii. Mike and speakers
 - iv. Touch screen
 - v. Plotter and printers
 - vi. DVD
 - vii. Audio CD and Video CD
 - viii. Reading and writing of different format on a frame CD
 - ix. Transporting audio and video files
 - x. Using various features of Director
 - xi. Using various features of Flash
 - xii. Using various features of Photo-shop
 - xiii. Making multimedia presentations combining Director, Flash, Photo-shop, such as department profile, lesson presentation, games and project presentations

Evaluation of Practical Examination:- As per Annexure – A

OBJECT ORIENTED PROGRAMMING IN C++ LAB
Fifth Semester

Course Code: DCS 554

L	T	P	C
-	-	4	2

Write programs in C++ for the following:

1. Program illustrating overloading of various operators.
2. Program illustrating use of Friend, Inline, default arguments.
3. Program illustrating use of constructor and various types of constructor.
4. Program illustrating various forms of Inheritance.
5. Program illustrating use of virtual functions, virtual Base Class.
6. Program illustrating use of function overloading.

Evaluation of Practical Examination:- As per Annexure – A

INDUSTRIAL TRAINING Fifth Semester

Course Code: DCS555

L	T	P	C
0	0	0	4

Students will attend Industrial training of four week in any industry or reputed organization after the IV semester examination in summer vacation. The evaluation of this training shall be included in the V semester evaluation.

The student will be assigned a faculty guide who would be the supervisor of the student. The faculty would be identified before the end of the IV semester and shall be the nodal officer for coordination of the training.

Students will also be required to prepare an exhaustive technical report of the training during the V semester which will be duly signed by the officer under whom training was taken in the industry/ organization. The covering format shall be signed by the concerned office in-charge of the training in the industry. The officer-in-charge of the trainee would also give his rating of the student in the standard University format in a sealed envelope to the Principal of the Polytechnic. (Annexure – II)

The student at the end of the V semester will present his report (Annexure – I) about the training before a committee constituted by the Principal of the Polytechnic which would be comprised of at least three members comprising of the Department Coordinator, Class Coordinator and a nominee of the Principal. The students guide would be a special invitee to the presentation. The seminar session shall be an open house session. The internal marks would be the average of the marks given by each member of the committee separately in a sealed envelope to the Principal.

The marks by the external examiner would be based on the report submitted by the student which shall be evaluated by the external examiner and cross examination done of the student concerned.

Not more than three students would form a group for such industrial training/ project submission.

The marking shall be as follows.

Internal: 50 marks

By the Faculty Guide - 25 marks

By Committee appointed by the Principal – 25 marks

External: 50 marks

By Officer-in-charge trainee in industry – 25 marks

By External examiner appointed by the University – 25 marks

WEB TECHNOLOGY

Sixth Semester

L	T	P	C
3	2	-	5

Course Code: DCS 601

Course Contents:

Unit-1

Internet Basics Specification and technical details for establishing Internet. Types and functions of modems, IP addressing, internet domains, domain name server, TCP/IP protocols, Internet service providers, Intranets, Internet Connectivity. **(8 Lectures)**

Unit-2

World Wide Web (www):- World Wide Web and its evolution, web page, web server, HTTP protocol. Examples of web servers. Navigation Tools: Netscape and Internet Explorer to surf Internet, Uniform Resource Locator (URL). Hypertext, hyperlinks and hypermedia, URL, its registration, browsers, search engines, proxy servers. **(8 Lectures)**

Unit-3

Internet Security: Basics of authentication and authorization. Introduction to firewall, various techniques of encryption and decryption, SSL (Secure Socket Layer). **(8 Lectures)**

Unit-4

Internet Applications: E-mail, Telnet, FTP, IRC, NNTP, Video conferencing, e-commerce. Basic structure of HTML, designing a web page, inserting links images, horizontal rules, comments. Formatting text, title, headings, colours, fonts, sizes, simple tables and forms. HTML tags, hyperlinks. Adding graphics and images, image maps, image files. Using tables, forms, style sheets and frames. **(8 Lectures)**

Unit-5

Using Front Page:- Front page editor, Front page explorer Client-side Scripting:- Using Java Script, Server-side Scripting: - Java Server Pages (JSP) Web Page designing using database as a Back and JSP as front end. **(8 Lectures)**

The question paper shall have weightage to case study 10% and to theoretical 90%.

Project work

A project work will be assigned to the students by the subject faculty. It will be of 10 marks and will be evaluated by the faculty itself. The topic of the project will be decided by the faculty and students will work in a group of 3 – 5 on each topic. The topic should be related to the subject taught by the faculty and should have proper utility and importance to enhance his practical skill & knowledge.

TEXT BOOKS:

1. Kraynak and Habraken, *Internet 6-in-1*, Prentice Hall of India Pvt. Ltd., New Delhi.
2. Kasser, *Using the Internet IV edition*, Prentice Hall of India Pvt. Ltd., New Delhi.
3. Wall, *Using the World Wide Web, (IIInd edition)*, Prentice Hall of India Pvt. Ltd., New Delhi.
4. Leon Alexis and Leon Mathews, *Internet for Everyone*; Vikas Publishing House Pvt. Ltd., New Delhi.
5. AB Tiwana, *Practical Guide and Internet*; Galgotia Publications Pvt. Ltd., New Delhi.
6. *HTML – 4 for World Wide Web*, Castro Addison Wesley (Singapore) Pvt. Ltd., New Delhi.
7. *Principles of Web Designing* Joel Sklar, *Web Warrior Series Available* with Vikas Publishing House Pvt. Ltd., New Delhi.
8. Chopra Ashish, *Internet & web designing*, Ishan Publication. Rick Dranell, *HTML 4.0 Unleashed*; Tech Media Publications, Delhi.
9. Arora Vipin, *Internet & Web page Technologies*; Eagle Parkashan Jalandhar.

REFERENCE BOOKS:

1. *Teach Yourself HTML 4.0 with XML, DHTML and Java Script* by Stephanie, Cottrell, Bryant; IDG Books India Pvt. Ltd., New Delhi.
2. *Using Active Server Pages* by Johnson et.al. Prentice Hall of India, New Delhi.
3. Chapman, *Web Development with Visual Basic with CD ROM*; Prentice Hall of India, New Delhi.

E – COMMERCE

Sixth Semester

Course Code: DCS 602

L	T	P	C
3	2	-	5

Course Contents:

UNIT I

Introduction, Forces behind E-Commerce Industry Framework, Brief history of Ecommerce, Inter Organizational E-Commerce, Intra Organizational E-Commerce, Network Infrastructure for E-Commerce, Global Information Distribution Network. **(8 Lectures)**

UNIT-II

Introduction to Mobile Commerce, Mobile Information Devices, Introduction to Web security, Firewalls & Transaction Security, Client Server Network, Network Security. **(8 Lectures)**

UNIT-III

World Wide Web & Security, Encryption, Secret Key Encryption, Public Key Encryption, Virtual Private Network (VPN), Implementation Management Issues. **(8 Lectures)**

UNIT - IV

Overview of Electronic payments, Digital Token based Electronic payment System(EPS), Smart Cards, Credit Card , Debit Card based EPS, Home Banking, Online Banking. **(8 Lectures)**

UNIT-V

Net Commerce EDA, EDI Application in Business, Legal requirement in E - Commerce, Introduction to supply Chain Management, CRM, issues in Customer Relationship Management. **(8 Lectures)**

The question paper shall have weightage to case study 10% and to theoretical 90%.

Project work

A project work will be assigned to the students by the subject faculty. It will be of 10 marks and will be evaluated by the faculty itself. The topic of the project will be decided by the faculty and students will work in a group of 3 – 5 on each topic. The topic should be related to the subject taught by the faculty and should have proper utility and importance to enhance his practical skill & knowledge.

References:

1. Greenstein and Feinman, “*E-Commerce*”, TMH, Delhi.
2. Ravi Kalakota, Andrew Whinston, “*Frontiers of Electronic Commerce*”, Addison Wesley, Delhi.
3. Denieal Amor, “ *The E-Business Revolution*”, Addison Wesley, Delhi.
4. Diwan, Sharma, “*E-Commerce*” Excel
5. Bajaj & Nag, “*E-Commerce: The Cutting Edge of Business*”, TMH, Delhi.

VISUAL BASIC. NET

Sixth Semester

Course Code: DCS 603

L	T	P	C
3	2	-	5

Course Contents:

Unit I

Introduction, Common Language Runtime, Common Type System, Common Language Specification, The Base Class Library, The .NET class library Intermediate language, Just-in-Time compilation, garbage collection, Application installation & Assemblies. **(8 Lectures)**

Unit II

The start page, Menu and Tool Bar, Toolbox, Solution Explorer, Class View Window, Properties Window, Task List and Output Window, Server Explorer, Keywords, Statements, variables, Data types, Operators, Decisions with if, switch statements, Using Loops, Arrays. **(8 Lectures)**

Unit III

Procedures, Class and Objects, Error Handling, Working with Textbox, Buttons, Labels, Checkbox, Radio Buttons, List box, Combo Box, Picture Box, Menu. **(8 Lectures)**

Unit IV

ADO.NET Data Namespaces, SqlConnection, SqlCommand, SqlDataAdapter, Dataset Class, Data Binding, Data View. **(8 Lectures)**

Unit V

Windows Services, Web Services, Web Forms. **(8 Lectures)**

The question paper shall have weightage to case study 80% and to theoretical 20%.

Project work

A project work will be assigned to the students by the subject faculty. It will be of 10 marks and will be evaluated by the faculty itself. The topic of the project will be decided by the faculty and students will work in a group of 3 – 5 on each topic. The topic should be related to the subject taught by the faculty and should have proper utility and importance to enhance his practical skill & knowledge.

Text Books:

1. Richard Blair and Jonathan Crossland, “*Beginning VB.NET (2 Edition)*”, WROX
2. Steven Holzner, “*Visual Basic .NET 2003*”, Pearson Education Shouish Chavan, “*Visual Basic .NET*”, Pearson Education
3. Richard Blair and Jonathan Crossland, “*Professional VB.NET (2 Edition)*”, Willy

Reference Books:

1. Jeffrey Richter, “*Applied Microsoft .Net Framework Programming*”, (Microsoft)

INDUSTRIAL ECONOMICS AND PRINCIPLES OF MANAGEMENT

Sixth Semester

Course Code: DIP 602

Course Contents

Unit I

Nature and significance of Economics. Meaning of Science, Engineering and Technology and their relationship with economic development. **(Lectures 08)**

Unit II

The concept of demand and supply. Elasticity of Demand and Supply. Indifference Curve Analysis, Price Effect, Income Effect and Substitution Effect. **(Lectures 08)**

Unit III

Money and Banking: Functions of Money, Value of Money, Inflation and measures to control it. Brief idea of functions of banking system, viz., Commercial and central banking, Business fluctuations. **(Lectures 08)**

Unit IV

Nature and Significance of Management. Evaluation of Management thought, Contributions of Max Weber, Taylor and Fayola. **(Lectures 08)**

Unit V

Human Behavior: Factors of Individual Behavior, Perception, Learning and Personality Development, Interpersonal Relationship and Group Behavior. **(Lectures 08)**

The question paper shall have weightage to case study 10% and to theoretical 90%.

Project work

A project work will be assigned to students by the subject faculty. It will be of 10 marks and will be evaluated by the faculty itself. The topic of the project will be decided by the faculty and students will work in a group of 3 – 5 on each topic. The topic should be related to the subject taught by the faculty and should have proper utility and importance to enhance his practical skill & knowledge.

Text Books:

1. Dewett K.K., “*Modern Economic Theory* S.Chand & Co., Delhi.

Reference Books:

1. Stonier A.W. & D.C. Horgne, “*A Text Book of Economic Theory*”, Oxford Publishing House Pvt. Ltd, Delhi.

Industrial Ecology*

Sixth Semester

Course Code: DIP 502 /603

L	T	P	C
3	-	-	3

Course Content:

Unit-I

Introduction to Industrial Psychology – definition, scope and importance

Unit-II

Motivation: Meaning, factors, motivation theories (Maslow, Herzberg and McGregor); understanding stress and its consequences, causes of stress, managing stress; group dynamics: features of group, group cohesiveness

Unit-III

Work Environment: Design of work place; fatigue: causes and prevention, work place boredom, accidents and safety.

Conflict: Concept, sources and types

Unit –IV

Constituents of Indian economy: - Agriculture, Industry and Service;

Innovation and Entrepreneurship: Industrial growth in India, role and challenges of small scale industries, sources of funding for small scale industries, industrial sickness

Unit –V

Privatization and globalization in India

Problems of industry- technology, waste disposal, industrial law and dispute

Project work

A project work will be assigned to the students by the concerned subject faculty. It will carry 10 marks and will be evaluated by the faculty itself. The topic of the project will be decided by the faculty. The students will work in a group of 3 – 5 on each topic. The topic should be related to the subject taught by the faculty and should have proper utility and importance to enhance his practical skill & knowledge.

References:

1. Miner J.B. (1992) Industrial/Organizational Psychology. McGraw Hill.
2. Blum & Naylor (1982) Industrial Psychology. Its Theoretical & Social Foundations CBS Publication.
3. Aswathappa K. (2008). Human Resource Management, New Delhi: Tata McGraw Hill.
4. [Ramnath Sharma](#) and [S. S Chandra](#) Advanced Industrial Psychology: Atlantic publishers, New Delhi
5. Vasant Desai, Small Scale Industries and Entrepreneurship, Himalaya publications
6. Ruddar Dutt and K.P.M. Sundaram, Indian Economy, S. Chand Publications
6. Samuelson, Economics, Tata McGraw Hill

Corporate Communication

Sixth Semester

Course Code: DIP 601

L	T	P	C
4	0	0	4

Course Content:

Unit I

Corporate Behaviour: Corporate expectation, office etiquettes, Telephonic Conversation & etiquette. (8 hours)

Practical (oral): To make the students aware of Corporate life & culture & also to teach them about telephone courtesy etc. (2 hours)

Unit II

Communication: Press Communication, Press note, e-mail, Inviting tenders, Writing advertisements, Writing notices. (8 hours)

Practical (oral): To make students develop the understanding of media importance. (2 hours)

Unit III

Interview Skills: Concept & Process, Preparing for the Interview, Types of Interview. (8 hours)

Practical (oral): Mock Interview Practice. (2 hours)

Unit IV

Modern Technology & Communication: Globalization impact, Role of Information Technology, Tele-Communication, Internet, Tele-Conferencing and Video-Conferencing. (8 hours)

Practical (oral): To make students speak on I.T./Internet/Tele & Video Conferencing. (2 hours)

Recommended Books:

1. Chhabra T.N. – Business Communication Sun India Pub. N.Delhi.
2. Raman Meenakshi & Sharma Sangeeta – Technical Communication – Principles & Practices, - ONP, N. Delhi.

NOTE:

This syllabus has been designed to improve the oral and written communication skills of students. The faculty members should put emphasis on practical (oral) activities for generating students' interest in language learning.

* Latest editions of all the suggested books are recommended.

WEB TECHNOLOGY LAB
Sixth Semester

Course Code: DCS 651

L	T	P	C
-	-	4	2

LIST OF PRACTICALS:

Write a program in HTML:

1. Using HTML Tags, Paired & Singular Tag,
2. The structure of html program Title and footer,
3. Text formatting,
4. Heading style, Drawing lines,
5. Image tags list (UL, OL, DL).
6. Adding graphics to HTML Document, Tables: cell spacing, cell padding, BGcolor, colspan, rowspan,
7. Linking document, Image Map, Frames.

Evaluation of Practical Examination:- As per Annexure – A

MAJOR PROJECT Sixth Semester

Course Code: DCS 652

L	T	P	C
-	-	8	4

Students should devote themselves to make a project which preferably should be a working model of their thoughts based on their subject of choice.

The student will be assigned a faculty guide who would be the supervisor of the student. The faculty would be identified before the end of the VI semester.

The project shall be finalized by the students before the start of the VII semester and shall be completed and submitted at least one month before the last working day of the VIII semester, date of which shall be notified in the academic calendar.

The assessment of performance of students should be made at least twice in each semester i.e. VII and VIII and each internal assessment shall be for 50 marks. The student shall present the final project live as also using overhead projector or power point presentation on LCD to the internal committee as also the external examiner.

The evaluation committee shall consist of faculty members constituted by the college which would be comprised of at-least three members comprising - the Department Coordinator, Class Coordinator and a nominee of the Principal. The students guide would be a special invitee to the presentation. The seminar session shall be an open house session. The internal marks would be the average of the marks given by each member of the committee separately and submitted to the Principal in a sealed envelope.

Not more than three students would form a group for such industrial training/ project submission.

The marking shall be as follows:

Internal: 100 marks

By the Faculty Guide - 50 marks

By Committee appointed by the Director – 50 marks

External: 100 marks

By External examiner appointed by the University – 100 marks

Evaluation of Practical Examination:- As per Annexure – A

VB. NET LAB
Sixth Semester

Course Code: DCS 653

L	T	P	C
-	-	4	2

Write a program in VB.NET:

1. Using Keywords, Statements, variables.
2. Using Data types, Operators.
3. Using Decisions with if, switch statements.
4. Using Loops, Arrays, Procedures.
5. Using Class and Objects.
6. Working with Textbox, Buttons, Labels, Checkbox, Radio Buttons, List box, Combo Box.
7. Using Picture Box, Menu, ADO.NET Data Namespaces, SqlConnection.
8. Working with Sql Command, Sql Data Adapter.
9. Working with Dataset Class, Data Binding, Data View.

Evaluation of Practical Examination:- As per Annexure – A

Evaluation of Practical Examination:**EVALUATION CRITERIA (INTERNAL)**

S. No.	Details	Marks (50)
1	Regularity/Attendance	05
2	Performance of Practical/Skill/Creativity/Innovation	20
3	Knowledge, Findings and Results regarding practical conducted	10
4	File Presentation	05
5	Response to questions during Viva	10
	Total (Out of 50)	

External examiner appointed by University shall conduct the practical along with internal faculty and shall assess out of 50 marks. The student would be required to complete an experiment during the practical examination and write the detail process, findings/ result and conclusions in the examination evaluation copy.

EVALUATION CRITERIA (EXTERNAL)

S. No.	Details	Marks (50)
1	Performance of Experiment/ Practical and Observations taken	20
2	Result/ Conclusion	10
3	Records/ File Presentation	10
4	Viva – Voce	10
	Total (Out of 50)	

Industrial Training

After IVth semester examination in the summer vacation students will have a four week industrial training in small scale industry/training institute, on different stages of production, testing quality control and assurance, research & development and maintenance etc. They will work and tours their attention on following points to incorporate them in their report.

1-Name and Address of the organization:

2-(a)Date of Joining:

(b) Date of Leaving:

3-Nature of work

(a)Product:

(b)Research & development:

(c) Maintenance:

(d)Working hours:

4-Details of work visted and activities
going on-:

5-Details of Machine/Tools used in the
section of unit visited-:

6-Work procedure in the section visited-:

7-Specifications of the product of section
and materials used-:

8-Work of repair and maintenance cell-:

9-Manner of keeping store items, their
receiving &distribution-:

10-Safety measures on work place and
working condition in general –
comfortable convenient & hygienic-:

Date :-

Student Signature

Name

Class

Branch

Enrollment No.

Trainee Assessment Format

This institution invites the comments on the training of its students (work and behavior) from their immediate supervisors on the following points.

1. Name of the trainee
2. Date of
 - Joining
 - Leaving
3.
 - i. Regularity & Punctuality
 - ii. Sense of responsibility
 - iii. Readiness to work/ learn
 - iv. Obedience
 - v. Skill acquired
4. Name of the works of the Department he attended during his stay.
His activity/ worth of being there.
5. Any thing specify.

Signature of the Assessor

Date :-

Designation