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PPSU

P P SAVANI UNIVERSITY

SCHOOL OF ENGINEERING

DIPLOMA

COMPUTER ENGINEERING

SYLLABUS BOOK

AY 2024-25

INSTITUTE VISION
To emerge as an Institute of Excellence by imparting value-based education aided with Research, Innovation and Entrepreneurial skills.

INSTITUTE MISSION	
1.	To impart the holistic engineering education of highest quality & prepare socially responsible professionals with entrepreneurial skills.
2.	To prepare value-aided engineering professionals to meet up global industry requirements by imparting cutting edge professional education.
3.	To inculcate the attitude of research and innovation among the stake holders through experiential and project-based teaching-learning pedagogy.
4.	To acquire global talent pool by providing world class amenities for teaching, learning & research.

Graduates will demonstrate ability to:

PEO No	PROGRAMME EUCATIONAL OBJECTIVES
PEO 1	Solve real-world engineering problems, design and develop innovative and cost-effective solutions exhibiting engineering skills/fundamentals to cater needs of society.
PEO 2	Excel in Industry/technical profession, higher studies, and entrepreneurship exhibiting comprehensive competitiveness.
PEO 3	Exhibit professional ethics & values, effective communication, teamwork, multidisciplinary approach, and ability to relate engineering issues to broader societal framework.

PO No	PROGRAMME OUTCOMES
PO 1	Engineering knowledge: Apply knowledge of engineering fundamentals, science, mathematics & engineering specialization for the solution of complex engineering problems.
PO 2	Problem analysis: Identify, formulate and analyze complex engineering problems leading to substantial conclusions using basic principles of mathematics, science and engineering.
PO 3	Design/development of solutions: Develop solutions for complex engineering problems and design system components or processes meeting specified needs having due consideration for the safety and societal & environmental considerations.
PO 4	Conduct investigations of complex problems: Use research-based knowledge & methods like design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid & viable conclusions.
PO 5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools for prediction and modeling of complex engineering activities with an understanding of the limitations.
PO 6	The engineer and society: Apply cognitive learning by the contextual knowledge to assess societal, health, safety, legal and cultural issues and following responsibilities relevant to the professional engineering practice.
PO 7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge & skill needed for sustainable development.
PO 8	Values & Ethics: Apply basic moral values & ethical principles and pledge to professional ethics/norms and responsibilities of the engineering practice.
PO 9	Individual and team work: Function effectively as an individual/as a team member or as a leader in diverse teams, and in multidisciplinary settings.
PO 10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO 11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects in multidisciplinary environments.
PO 12	Life-long learning: Recognize the need, do necessary preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PSO No	PROGRAMME SPECIFIC OUTCOMES (PSO) DIPLOMA COMPUTER ENGINEERING
PSO 1	Apply Computing Knowledge with standard practices to develop Software.
PSO 2	Maintain Computer hardware and software system.
PSO 3	Prepare technically competent employee, researcher, entrepreneur, and excel in competitive exams, and increase passion for higher studies.

Credit Guidelines (General)			
Component	**Hour/Week**	**Credit**	**Total Hours/Semester**
Theory	1	1	15
Practical	2	1	30
Tutorial	1	1	15
Note: In specific cases; extra credits can be granted for specific/important subjects.			

CO-PO Mapping Guidelines		
Mapping Level	**% age Mapping**	**Indicator**
0 / -	0	No Mapping
1	0-33	Low Level (Slightly Mapped)
2	33-66	Medium Level (Moderately Mapped)
3	>66	High Level (Strongly Mapped)

Syllabus Book

Diploma in Computer Engineering

P P Savani University

School of Engineering
Institute of Diploma Studies

Effective From: 2024-25
Authored by: P P Savani University

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FIRST YEAR
DIPLOMA IN COMPUTER ENGINEERING

P P SAVANI UNIVERSITY																
SCHOOL OF ENGINEERING																
INSTITUTE OF DIPLOMA STUDIES																
TEACHING & EXAMINATION SCHEME FOR DIPLOMA IN COMPUTER ENGINEERING PROGRAMME AY:2024-25(Batch:2024)																
Sem.	**Course Code**	**Course Title**	**Course Category**	**Offered By**	**Teaching Scheme**					**Examination Scheme**						
					Contact Hours				**Credit**	**Theory**		**Practical**		**Tutorial**		**Total**
					Theory	**Practical**	**Tutorial**	**Total**		**CE**	**ESE**	**CE**	**ESE**	**CE**	**ESE**	
1	IDSH1010	Fundamentals of Mathematics	Interdisciplinary	SH	3	0	2	**5**	5	40	60	0	0	50	0	**150**
	IDSH1020	Engineering Physics	Major/Core	SH	3	2	0	**5**	4	40	60	20	30	0	0	**150**
	IDME1010	Basics of Mechanical & Civil Engineering	Major/Core	ME	2	4	0	**6**	4	40	60	40	60	0	0	**200**
	IDCE1010	Computer Applications	Major/Core	CE	3	4	0	**7**	5	40	60	40	60	0	0	**200**
	IDME1020	Engineering Workshop	Major/Core	ME	0	2	0	**2**	1	0	0	50	0	0	0	**50**
	CFLS21110	Elementary Communicative English-I	AEC	CFLS	3	0	0	**3**	3	100	00	0	0	0	0	**100**
							Total	**28**	**22**							**850**
2	IDSH1040	Engineering Mathematics	Interdisciplinary	SH	3	0	2	**5**	5	40	60	0	0	50	0	**150**
	IDSH1050	Fundamentals of Chemistry	Major/Core	SH	3	2	0	**5**	4	40	60	20	30	0	0	**150**
	IDCV1010	Engineering Mechanics	Major/Core	CV	3	2	0	**5**	4	40	60	20	30	0	0	**150**
	IDIT1010	Introduction to Computer Programming	Major/Core	IT	3	4	0	**7**	5	40	60	40	60	0	0	**200**
	IDSH1110	Electrical & Electronics Workshop	Major/Core	SH	0	2	0	**2**	2	0	0	50	0	0	0	**50**
	CFLS2120	Elementary Communicative English-II	Minor	CFLS	2	0	0	**2**	2	100	0	0	0	0	0	**100**
							Total	**26**	**22**							**800**

SEMESTER 1

P P Savani University
School of Engineering
Institute of Diploma Studies

Department of Applied Science & Humanities

Course Code: IDSH1010
Course Name: Fundamentals of Mathematics
Prerequisite Course(s): Algebra, Geometry, Trigonometry till 9th Standard level

Teaching & Examination Scheme:

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
3	0	2	5	40	60	-	-	50	0	150

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the course:
To help learners to

- outline logarithm properties.
- implement concepts of Determinants and Matrices for solving science and engineering problems.
- present usefulness of trigonometry.
- acquire knowledge of co-ordinate geometry and ability to work with applications to Engineering Mathematics.

Course Content:

SECTION-I			
Module No.	Content	Hours	Weightage in %
1.	**Logarithm** Basic concept of logarithm, Rules and related examples, Applications of logarithm.	5	14
2.	**Determinants and Matrices** Basic concept of determinants and matrices, Addition and subtraction, Product, Inverse up to 3X3 matrix, Solution of simultaneous equations up to three variables, Applications of Determinants and matrices.	9	18
3.	**Trigonometry** Basic concept of trigonometry, Units of angles (degree and radian), Allied & compound angles, Multiple–submultiples angles, Graph of sine and cosine, Periodic function, Sum and factor formulae, Inverse trigonometric function, Applications oftrigonometry.	9	18
SECTION-II			

4.	**Co-ordinate geometry** Introduction, Point, Distance formula, Mid-point, Locus of a point, Straight lines, Slope of a line, Equation of a straight line, The general equation, Angle between two lines, Circle, Tangent and normal, Equation of tangent and normal	6	15
5.	**Vectors** Basic concept of vector and scalar, Addition and subtraction, Product of vectors, Geometric meaning of scalar and vector product, Angle between two vectors, Applications of dot and cross product, Work done and moment of force.	8	15
6.	**Mensuration** Basic concept of Mensuration, Area of Triangle, Square, Rectangle, Trapezium, Parallelogram, Rhombus and Circle surface, Volume of Cuboids, Cone, Cylinder and Sphere.	8	20

List of Tutorials:

Sr. No.	List of Tutorial	Hours
1.	Logarithm-1	2
2.	Logarithm-2	2
3.	Determinants and Matrices-1	2
4.	Determinants and Matrices-2	2
5.	Determinants and Matrices-3	2
6.	Trigonometry-1	2
7.	Trigonometry-2	2
8.	Trigonometry-3	2
9.	Co-ordinate geometry-1	2
10.	Co-ordinate geometry-2	2
11.	Vectors-1	2
12.	Vectors-2	2
13.	Mensuration-1	2
14.	Mensuration-2	2
15.	Mensuration-3	2

Text Book:

Title	Author(s)	Publication
Advanced Mathematics for Polytechnic	Dr. N. R. Pandya	Macmillan Publication
Engineering Mathematics - 3rd Edition	Anthony croft & others	Pearson Education Publication

Reference Book:

Title	Author(s)	Publication
Basic Mathematics	G.C. Patel and Ami C. Shah	Atul Prakashan
Applied Mathematics for Polytechnics - 10th Edition	H. K. Dass	H. K. Dass
Applied Mathematics	W. R.Neelkanth	Sapna Publication

Course Evaluation:

Theory:

- Continuous Evaluation consists of two tests, each of 30 marks and 1 hour of duration and average of the same will be converted to 30 marks.
- Faculty evaluation consists of 10 marks as per the guidelines provided by the Course Coordinator.
- End Semester Examination consists of 60 marks.

Tutorial:

- Continuous evaluation consists of performance of tutorial which will be evaluated out of 10 Marks for each tutorial and average of the same will be converted to 30 marks.
- MCQ based examination consists of 20 marks.

Course Outcome(s):

After the completion of the course, the following course outcomes will be able to:

IDSH1010	**FUNDAMENTALS OF MATHEMATICS**
CO 1	Explain logarithmic properties and solve exponential expressions.
CO 2	Demonstrate the ability to crack engineering related problems based on determent and matrices.
CO 3	Define properties of trigonometry and vectors in construction.
CO 4	Establish the knowledge of coordinate geometry, and ability to solve engineering problems.
CO 5	Explain the surface area and volume of different shapes and bodies.

Level of Bloom's Revised Bloom's Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

Module No	**Content**	**RBT Level**
1	Logarithm	1,2,3,5
2	Determinants and Matrices	2,3,4,5
3	Trigonometry	2,3,4,5,6
4	Coordinate geometry	2,3,5
5	Vectors	2,3,5
6	Mensuration	1,2,3,5

P P Savani University
School of Engineering
Institute of Diploma Studies

Department of Applied Science & Humanities

Course Code: IDSH1020
Course Name: Engineering Physics
Prerequisite Course(s): Concept of Science up to 9th Standard

Teaching & Examination Scheme

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
3	2	0	4	40	60	20	30	0	0	150

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the course:
To help learners to

- demonstrate the ability to think in core concept of their engineering application bystudying various topics involved in branch specific applications.
- demonstrate the ability to use appropriate mathematical techniques and concepts to obtain quantitative solutions to problems in physics.
- demonstrate the ability to collect and analyze data and to prepare coherent reports of his or her findings.

Course Content:

SECTION-I			
Module No.	Content	Hours	Weightage in %
1.	**SI Units & Measurements:** Need of measurement and unit in engineering and science, Definition of unit and requirements of standard unit, Systems of units- CGS, MKS and SI, Fundamental and Derived quantities and their units, Least count and range of instrument, Vernier caliper, Micrometer screw gauge, Accuracy, Precision, Error and types of error, Estimation of errors - Absolute error, Relative error and Percentage error, Rules and identification of significant figures	5	10
2.	**Motion in a Plane:** Scalar and vector quantities, Position and displacement vectors, General vectors and their notations, Equality of vectors, multiplication of vectors by a real number, Addition and subtraction of vectors, Relative velocity, Unit vector, Resolution of a vector in a plane - rectangular components, Scalar and Vector	6	15

	product of vectors, Motion in a plane, Cases of uniform velocity and uniform acceleration-projectile motion, Uniform circular motion		
3.	**Force and Motion:** Recapitulation of equations of motion, Newton's 1st law of motion, Force, basic forces in motion, Gravitational force, Electrostatic force, Electromagnetic force, Nuclear force, Inertia, types of inertia, Momentum and Newton's 2nd law of motion, Impulse of force, Impulse as the product of force and time, impulse as the difference of momentum, Newton's 3rd law of motion and its examples, Law of conservation of momentum	6	15
4.	**Work, Energy and Power:** Work done by a constant force and a variable force, Kinetic energy, Work-energy theorem, Power, Notion of potential energy, Potential energy of a spring, Conservative forces, Conservation of mechanical energy (kinetic and potential energies), Non-conservative forces, Motion in a vertical circle, Elastic and inelastic collisions in one and two dimensions	6	10
SECTION-II			
5.	**Mechanical Properties of Solids and fluids:** Deforming force, Restoring force, Elastic and plastic body, Stress and Strain with their types, Elastic limit, Hooke's law, Young's modulus, Bulk modulus, Modulus of rigidity and Relation between them (no derivation), Stress- Strain diagram, Yield point, Ultimate stress, Breaking stress, Factor of safety. Pascal's law and its applications (hydraulic lift and hydraulic brakes), Effect of gravity on fluid pressure, Viscosity, Stokes' law, terminal velocity, streamline and turbulent flow, critical velocity, Bernoulli's theorem and its applications, Surface energy and surface tension, angle of contact	7	20
6.	**Heat Transfer:** Introduction to thermodynamics, Temperature and Heat, Transmission of heat - Conduction, Convection and Radiation, Good and bad conductor of heat with examples, Law of thermal conductivity, Coefficient of thermal conductivity and its S.I. unit Heat capacity and Specific heat of materials, Celsius, Fahrenheit and Kelvin temperature scales and their conversion formula	5	10
7.	**Oscillations:** Periodic motion - time period, frequency, displacement as a function of time, Periodic functions, Simple harmonic motion (S.H.M) and its equation, Phase Oscillations of a spring-restoring force and force constant, Energy in S.H.M. Kinetic and potential energies, Simple pendulum derivation of expression for its time period, Free, forced and damped oscillations (qualitative ideas only), resonance	5	10
8.	**Waves:** Wave motion, Transverse and longitudinal waves, Speed of wave	5	10

	motion, Displacement relation for a progressive wave, Principle of superposition of waves, Reflection of waves, Sanding waves in strings and organ pipes, Fundamental mode and harmonics, Beats, Doppler effect		

List of Practical:

Sr. No.	List of Practical	Hours
1.	To study about basic unit conversion and dimension analysis.	4
2.	To measure length and diameter of the given object using Vernier callipers.	2
3.	To measure the thickness of slit and diameter of wire with help of micrometer Screw Gauge.	2
4.	To determine the surface tension of water by capillary rise method.	4
5.	To Verify Ohm's Law by using an Ammeter & Voltmeter	2
6.	To determine the wavelength of sound produced (i) in an air column and the velocity of sound in air at room temperature using a resonance column and a tuning fork.	4
7.	To determine Young's modulus of a material of a beam by the method of bending of a beam.	4
8.	To determine the modulus of rigidity of the material of wire by dynamical method.	2
9.	To determine the value of 'g' by using a Simple Pendulum.	2
10.	Measurement of g: Use of a Kater's Pendulum.	2
11.	To measure the temperature of given material by any temperature measuring instrument.	2

Text Book:

Title	Author(s)	Publication
Basic physics for Diploma group -1	-	Atul Prakashan

Reference Books:

Title	Author(s)	Publication
Physics Part-I and II	Resnick and Haliday	Wiley Eastern Publication
Concept of Modern Physics	Arthur Beiser	Tata McGraw Hill
Concept of Physics	H C Verma	-
Fundamental of physics	Gomber & Gogia	Pradeep publications Jalandhar
NCERT Physics part 1 & 2	-	NCERT

Course Evaluation:

Theory:

- Continuous Evaluation Consist of Two Test Each of 30 Marks and 1 Hour of duration.
- Faculty evaluation consists of 10 marks as per the guidelines provided by the Course Coordinator.
- End Semester Examination will consist of 60 Marks Exam.

Practical:

- Continuous Evaluation Consist of Performance of Practical which should be evaluated out of 10 for each practical in the next turn and average of the same will be converted to 10 Marks.

- Internal Viva component of 10 Marks.
- Practical performance/quiz/drawing/test of 20 Marks during End Semester Exam.
- Viva/Oral performance of 10 Marks during End Semester Exam.

Course Outcome(s):

After the completion of the course, the following course outcomes will be able to:

IDSH1020	**ENGINEERING PHYSICS**
CO 1	Identify physical quantities, unit systems and estimate measurements with accuracy by minimizing errors to solve real life measurements.
CO 2	Classify different types of motion, interpreat the equation of motion and conservation law of momentum to describe motion of rocket, recoil of gun etc. derive relationships for work, energy and power and solve related problems.
CO 3	Understand the concept of elasticity, it's types and articulate in engineering applications, especially in civil engineering. the knowledge is extended to explore the properties of fluids, construct the concepts of viscosity and surface tension.
CO 4	Explain the basics of heat transfer and employ the knowledge of heat and thermodynamics in different engineering sectors especially mechanical and chemical.

Level of Bloom's Revised Bloom's Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

Module No	**Content**	**RBT Level**
01	Introductory Concepts	3,5
02	Mechanics	1,4
03	Work, Energy and Power	1,3
04	Mechanical properties of solids	2,6
05	Properties of fluids	1,5
06	Heat transfer	3,4

P P Savani University
School of Engineering
Institute of Diploma Studies

Department of Mechanical Engineering

Course Code: IDME1010
Course Name: Basics of Mechanical and Civil Engineering
Prerequisite Course(s): -

Teaching & Examination Scheme:

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
02	04	00	04	40	60	40	60	00	00	200

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:
To help learners to

- acquire an inclusive knowledge of fundamental concept of Mechanical Engineering.
- understand working of simple mechanical devices.
- study and gain significance of Mechanical Engineering in various fields.
- read and interpret the building drawing
- select different types of construction materials as per requirements

Course Content:

SECTION-I			
Module No.	Content	Hours	Weightage in %
1.	**Introduction of Mechanical Engineering:** Introduction, Scope, Importance, Basic terminologies in mechanical engineering, Basic mechanical components used in routine, Pipe and pipe fittings, Hand tools, Power tools	02	7
2.	**Heat interactive equipment:** Heat transfer and its Modes, Boilers, Classification andWorking, Concept of Accessories and Mountings – Types, Applications, Prime movers, Meaning, Classification, Steam turbine working, Layout of thermal power plant, Working and applications, Internal combustion engines – Definition, Classification, Components, Working of two-stroke and four-stroke engines, S.I. and C.I. engines	04	13
3.	**Power Transmission and Safety:** Power transmission: Importance, Modes, Types, Applications, Couplings in power transmission, Safety normsto be followed for preventing accidents.	03	10

4.	**Hydraulic and pneumatic devices:** Concept of theory of fluid flow, general properties of fluid flow, Pumps, Water turbines, and Air compressors – working principle, types, parts, performance, troubles and remedies, applications.	03	10
5.	**Manufacturing processes:** Overview of manufacturing processes, Welding concept and overview, Types, Arc and Gas welding, Accessories and Consumables, Precautions and Safety during arc and gas welding, Casting - Introduction, Applications.	03	10
SECTION-II			
6.	**Civil Engineering: An Overview** Introduction, Branches, Scope, Impact, Role of Civil Engineer, Unit of measurement, Unit conversion (Length, Area, Volume).	02	7
7.	**Civil Engineering Surveying:** Surveying & leveling (its importance and types), Necessity for leveling, Principals of surveying, Instrument/tools used for survey and level, Various methods of finding the field survey measurements, Chain and Compass Survey	05	17
8.	**Civil Engineering Drawing**: Types of building drawings, Abbreviation, conventions & symbols in civil drawing, building byelaws for planning of residential building and industrial building, Planning of simple residential and industrial building	04	13
9.	**Construction Materials**: Common construction materials such as cement, Brick, Stone, Timber, Steel and Concrete, Properties of each materials & their acceptable standards, Quality parameters of materials, Estimations and costing for simple structure (only the material cost)	04	13

List of Practical:

Sr. No.	Details of Practical	Hours
1.	Study of few selected boilers, accessories and mountings	02
2.	Numerical based on heat interactive equipment	02
3.	Study of power and motion transmission systems	04
4.	Numerical based on power transmission and safety	02
5.	Study of various pumps	04
6.	Numerical based on hydraulic and pneumatic devices	02
7.	Study and demonstration of basic machine tools	04
8.	Numerical based on manufacturing processes	02
9.	Machine parameters of wheel and differential axel apparatus	04
10.	Study and demonstration of basic mechanical equipment	04
11.	Unit Conversation Exercise	02
12.	Linear Measurement.	04
13.	Angular Measurement (Prismatic Compass)	04
14.	Angular Measurement (Surveyor Compass)	04
15.	Determine R.L of given point by Dumpy level without change point.	04

16.	Determine R.L of given point by Dumpy level with change point.	04
17.	Brick masonry bonds	04
18.	Aggregate experiments	02
19.	Brick masonry tests	02

Reference Book(s):

Title	Author/s	Publication
Elements of Mechanical engineering	P. S. Desai and S. B. Soni	Atul Prakashan
Theory of Machines	R. S. Khurmi and J. K. Gupta	S. Chand
Heat engine	Shah and Pandya	Charotar Publishing House
Hydraulic machines	Jagdish Lal	Metropolitan Book Company
Elements of Workshop	Hazara Chaudhary	Asia Publishing House
Text book on Surveying & Levelling	S. B. Junnarkar and H. J. Shah	Laxmi Publication

Course Evaluation:

Theory:

- Continuous Evaluation Consist of Two Test Each of 30 Marks and 1 Hour of duration.
- Faculty evaluation consists of 10 marks as per the guidelines provided by the Course Coordinator.
- End Semester Examination will consist of 60 Marks Exam.

Practical:

- Continuous Evaluation Consist of Performance of Practical which should be evaluated out of 10 for each practical in the next turn and average of the same will be converted to 10 Marks.
- Internal Viva component of 10 Marks.
- Practical performance/quiz/drawing/test of 20 Marks during End Semester Exam.
- Viva/Oral performance of 10 Marks during End Semester Exam.

Course Outcome(s):

After the completion of the course, the following course outcomes will be able to:

IDME1010	BASICS OF MECHANICAL AND CIVIL ENGINEERING
CO 1	Understand the mechanical engineering background.
CO 2	Discover heat transfer in context with engines and boilers.
CO 3	Differentiate power transmission working.
CO 4	Identify the scope of civil engineering based on field experience.
CO 5	Illustrate measurements of surveying & levelling & building components.

Level of Bloom's Revised Bloom's Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

Module No	Content	RBT Level
1	Introduction to Mechanical Engineering	1,2
2	Heat Interactive equipment	2,4
3	Power Transmission and Safety	1,2,3
4	Hydraulic and pneumatic devices	2,4
5	Manufacturing Processes	2,4,6
6	Civil Engineering: An Overview	1,2
7	Civil Engineering Drawing	2,4

8	Construction Materials	2,4,5

P P Savani University
School of Engineering
Institute of Diploma Studies

Department of Computer Engineering

Course Code: IDCE1010
Course Name: Computer Applications
Prerequisite Course (s): --

Teaching & Examination Scheme:

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
03	04	00	05	40	60	40	60	00	00	200

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:
To help learners to

- Familiarize with components of computer and basic operations of it.
- Provide practical and hands-on experience of application used to create documents.
- Introduce internet and its usage.

Course Content:

SECTION-I			
Module No.	Content	Hours	Weightage in %
1.	**Basics of Computer System** Introduction and Characteristics, Generation, Classification, Applications, describe computer hardware and software, Identify I/O, Devices, describe functioning of CU, ALU and memory unit, differentiate various types of printers, Demonstrate various file handling operations, Introduction to Memory, Memory hierarchy, Primary memory and its type, Secondary memory, Classification of Secondary memory, Cache Memory and Virtual Memory.	08	20
2.	**Computer Software** Software concept Classification of Software, System software and Application Software, Overview of Operating System, Objectives and Functions of O.S, Types of Operating System, Batch Processing, Multiprogramming, Time Sharing OS, Features of DOS, Windows and UNIX, Programming Languages, Compiler, Interpreter, Computer Virus Different Types of computer virus, Detection and prevention of Virus Application of computers in different Domain. Installation of device drivers and other required software, need and method of backup.	08	15

3.	**Using MS-Word** Use basics text formatting features, manipulate text, use page Setup features, use spell and grammar utility, Work with graphics/ clipart, Create and manipulate table, use auto shapes and its formatting with text, Use Image and table formatting.	07	15
SECTION-II			
4.	**Using MS-Excel** Use basic formatting and data entry features, use formula and functions, Work with graphics, Create and manipulate charts, Use header and footer options, Setup page layout and print worksheet	07	20
5.	**Using MS - PowerPoint** Create new presentation and apply basic formatting features, use master slide, Create and manipulate table, Work with objects and clips, Work with video, Work with audio, use special effects, Use navigation and hyper linking, Custom Animation and Transitions	07	15
6.	**Multi Media, Internet usage and Google Applications** Introduction of Multimedia, Types of Multimedia, and Use of Multimedia in various platforms, Describe Internet, WWW and Web Browsers: Web Browsing software, Surfing the Internet, Chatting on Internet, Basic of electronic mail, Using Emails, Document handling, Network definition, Common terminologies: LAN, WAN, Node, Host, Workstation, bandwidth, Network Components: Severs, Clients, Communication Media. Introduction of Google Applications, Gmail, Google Drive, Docs, Spreadsheet	08	15

List of Practical(s):

Sr. No	List of Practical	Hours
1.	Introduction to different hardware components of PC and Assembling of PC.	02
2.	Installation of OS and other Software. Partitions of Drive, Compression Utilities: WinZip, Defragmenting Hard, Formatting Hard disk, etc.	04
3.	Use accessories utilities of windows OS the User Interface, Using Mouse and Moving Icons on the screen, The My Computer Icon, The Recycle Bin, Status Bar, Start and Menu & Menu-selection, Running an Application, Windows Explorer Viewing of File, Folders and Directories, Creating and Renaming of files and folders, Opening and closing of different Windows, Control Panels, Setting the date and Sound, Create Users and password.	02
4.	Entering and editing text in document file. Apply formatting features on Text like Bold, Italics, Underline, font type, color and size, Apply features like bullet, numbering in Microsoft word.	04
5.	Create and manipulate tables, create documents, insert images, format tables, Smart art, Chart in Microsoft word, Insert Hyperlink, Page number and textbox in word.	04
6.	Create Event Registration Form and Resume in Microsoft word.	04
7.	Entering and editing data in worksheet, Fill Series, fill with formatting and without formatting Using Microsoft Excel.	02

8.	Create and manipulate Charts, Shape, Sparkline Charts, Clipart, and table.	04
9.	Filter Data Using Filter and advanced filter function with more than 2 conditions, Freeze row & Column in Microsoft Excel.	02
10.	Create Mark sheet, and Pay slips using Excel, Apply various formula and functions in the sheet.	06
11.	Print sheet using print area, Page setting, print titles, Adjusting margins, Page break, headers and footers.	02
12.	Basic operations of Power point, Create PPT and inset and delete slides in power point, Use of Master Slide in Presentation, Create Project presentations, Lecture presentations, Apply Custom animation & Transition. Apply basic formatting features in presentation like font, font size, font color, text fill, spacing and line spacing Formatting text boxes, word arts, styles bullet and numbering in Microsoft power point. Working with drawing tools, applying shape or picture styles, Applying object borders, object fill, object effects in Microsoft Power point.	16
13.	Working with video, Link to video and sound files using power point.	02
14.	Internet Searching, Browsers, Various functions of Browsers (Eg. Bookmark, Customize Settings), Study of components like switches, bridges, routers, Wi-Fi router,	02
15.	Introduction of Google application, Compose Gmail, File attachment, add signature.	02
16.	Demonstration of Google drive, Sharing File Using Google drive, Spreadsheet, Docs and Google slides	02

Reference Book(s):

Title	Author/s	Publication
Computer Course	R.Taxali	Tata McGraw Hills. New Delhi.
MS-Office for Dummies	Wallace Wang	Wiley India, New Delhi
Basic Computer Engineering	Petes S. J., Francis.	Tata McGraw-Hill Education, 2011

Web Material Link(s):

- http://www.digimat.in/nptel/courses/video/106104128/L01.html
- https://www.youtube.com/watch?v=3QiItmIWmOM

Course Evaluation:

Theory

- Continuous Evaluation Consist of two Tests of 30 Marks and 1 Hour of duration and average of the same will be converted to 30 marks.
- Faculty evaluation consists of 10 marks as per the guidelines provided by the Course Coordinator.
- End Semester Examination will consist of 60 Marks Exam.

Practical:

- Continuous Evaluation Consist of Performance of Practical which should be evaluated out of 10 for each practical in the next turn and average of the same will be converted to 20 Marks.
- Internal Viva component of 20 Marks.
- Practical performance/quiz/test of 30 Marks during End Semester Exam.
- Viva/Oral performance of 30 Marks during End Semester Exam.

Course Outcome(s):

After the completion of the course, the following course outcomes will be able to:

IDCE1010	COMPUTER APPLICATIONS
CO 1	Identify the components of a computer system and demonstrate basic proficiency in commonly used applications.
CO 2	Analyze, synthesize and evaluate school, work or home situations and use application software to complete information processing tasks efficiently and effectively.
CO 3	Apply the concepts of microsoft office – word, excel, and powerpoint to produce professional documentation and presentation.
CO 4	Access the internet and learn to use the browse, search and hyperlink capabilities of web browsers.
CO 5	Identify the significance of multimedia and its utilization in various platforms.

Level of Bloom's Revised Bloom's Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

Module No	Content	RBT Level
1	Basics of Computer system	1,2
2	Computer Software	1,2
3	Using MS-Word	2,3
4	Using MS-Excel	2,3,4
5	Using MS-Powerpoint	2,3
6	Multi Media, Internet Usage and Google Applications	2,3,5

P P Savani University
School of Engineering
Institute of Diploma Studies

Department of Mechanical Engineering

Course Code: IDME1020
Course Name: Engineering Workshop
Prerequisite Course(s): -

Teaching & Examination Scheme:

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
00	02	00	01	00	00	50	00	00	00	50

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:
To help learners to

- Understand basic know-how of various hand tools and their use in different sections of manufacturing
- Understand the use of workshop practices in day to day industrial as well domestic life that help to dissolve the routine problems
- Build the understanding of the complexity of the industrial job, along with time and skills requirements of the job
- Learn about the safety measures to be taken while working in workshop.
- Learn about operation wise tool selection.

Course Content:

Module No.	Content	Hours
1.	**Introduction and Demonstration of Safety Norms and various shops:** Introduction to various shops / sections and workshop layouts, Safety norms to be followed in a workshop.	-
2.	**Fitting shop:** Introduction of fitting shop, Safety, Making a job as per drawing including marking and performing other operations	-
3.	**Carpentry shop:** Introduction of carpentry shop, Safety, Making a job as per drawing including marking and performing other operations	-
4.	**Smithy shop:** Introduction of smithy shop, Safety, Making a job as per drawing including marking and performing other operations	-
5.	**Sheet metal shop:** Introduction of sheet metal shop, Safety, Making a job as per drawing including marking and performing other operations	-

6.	**Pipe fitting:** Introduction of pipe fitting shop, Safety, understanding various pipe fitting tools and performing operations	-
7.	**Machine Shop:** Introduction and demonstration of various machines like Lathe, Drilling, Grinding, Hack Saw Cutting etc.	-

List of Practical:

Sr. No.	List of Practical	Hours
1.	Introduction and Demonstration of Safety Norms and various shops.	02
2.	To Perform a Job of Fitting Shop.	04
3.	To Perform a Job of Carpentry Shop.	06
4.	To Perform a Job of Black Smithy shop.	06
5.	To Perform a Job of Sheet metal Shop.	04
6.	To Perform a Job of Plumbing Shop	04
7.	Introduction to Machine Tool	04

Reference Book(s):

Title	Author/s	Publication
Workshop Technology-I	Hazra and Chaudhary	Media promoters & Publisher private limited.
Workshop practice manual	K.Venkata Reddy	B. S. Publications
Mechanical workshop practice	K.C. John	PHI

Course Evaluation:

Practical:

- Continuous Evaluation Consist of Performance of Practical which should be evaluated out of 10 for each practical in the next turn and average of the same will be converted to 20 Marks.
- Internal Viva component of 20 Marks.
- Practical performance/quiz/test of 30 Marks during End Semester Exam.
- Viva/Oral performance of 30 Marks during End Semester Exam.

Course Outcome(s):

After the completion of the course, the following course outcomes will be able to:

IDME1020	ENGINEERING WORKSHOP
CO 1	Understand the various measuring instruments.
CO 2	Understand the safety norms required in the workshop.
CO 3	Understand the application of various tools required for different operations.
CO 4	Remember the process of manufacture from a given raw material.
CO 5	Explain various manufacturing processes in machine shop.

Level of Bloom's Revised Bloom's Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

Module No	Content	RBT Level
1	Introduction and Demonstration of Safety Norms and Various Shops	2,4
2	Fitting Shop	2,4,6
3	Carpentry Shop	2,4,6
4	Smithy Shop	2,4,6
5	Sheet metal shop	2,3,4
6	Pipe fittings	2,3,5
7	Machine Shop	2,3,4

P P Savani University
Centre for Language Studies

Course Code: CFLS2110
Course Name: Elementary Communicative English-I
Prerequisite Course(s): --

Teaching & Examination Scheme:

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
03	00	00	03	100	00	00	00	--	--	100

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:
To help learners to

- Recall basic listening skills and demonstrate understanding of simple spoken English in various contexts. Recognize and comprehend basic reading materials by identifying main ideas, key details, and vocabulary.
- Interpret and explain the meaning of simple spoken English in everyday situations. Comprehend and summarize information from simple texts, demonstrating understanding of vocabulary and basic grammar structures.
- Utilize acquired vocabulary and expressions to communicate effectively in basic conversations and written interactions. Apply basic grammar structures and vocabulary to produce short written texts with correct grammar and sentence structure.
- Analyze and evaluate spoken and written texts to identify main ideas, supporting details, and specific information. Analyze and identify grammatical structures and vocabulary usage in written and spoken English.
- Evaluate one's own speaking skills by assessing fluency, accuracy, and coherence in basic conversations. Assess and critique written texts for clarity, grammar usage, and coherence.
- Generate short written texts, such as emails, postcards, and descriptions, using correct grammar, vocabulary, and sentence structure.
- Create and engage in basic conversations using appropriate grammar structures and vocabulary to express ideas accurately.

Course Content:

Section I			
Module No.	Content	Hours	Weightage in %
1.	**Listening** Listening to short dialogues and conversations to understand greetings, introductions, and basic information. Simple instructions and following them. Listening to short descriptions and narratives to grasp main ideas and key details. Recorded conversations to understand everyday situations and respond appropriately.	15	25

Section II			
2.	**Reading and Language** Reading short articles, dialogues, and narratives to understand the main ideas, supporting details, and vocabulary. Identifying and understanding basic grammatical structures and sentence patterns. Using context clues to comprehend unfamiliar words and phrases. Reading and understanding simple instructions, signs, and labels	15	25
Section III			
3.	**Speaking Skills, Non-Verbal Aspects and Corporate Grooming and Etiquettes** Engaging in basic conversations on topics like personal information, daily routines, and hobbies. Role-playing various situations, such as ordering food in a restaurant or asking for directions. Describing people, places, and objects using basic vocabulary and sentence structures. Participating in pair or group discussions on familiar topics	15	25
Section IV			
4.	**Writing** Writing short paragraphs and sentences to describe people, places, and daily routines. Composing simple emails, postcards, and messages using appropriate language and structure. Practicing basic sentence formation, grammar usage, and punctuation. Developing writing fluency by expressing personal opinions and ideas on various topics	15	25

Text Book (s):

Title	Author/s	Publication
New Cutting Edge Elementary/ Intermediate Students' Book	Sarah Cunningham Longman and Peter Moor	Pearson Longman

Online References:

https://www.academia.edu/34869668/New_Cutting_Edge_Elementary_Workbook_With_Key

Course Evaluation:

Theory:

- Continuous Evaluation consists of four tests (LSRW), each of 25 marks.

Course Outcome(s):

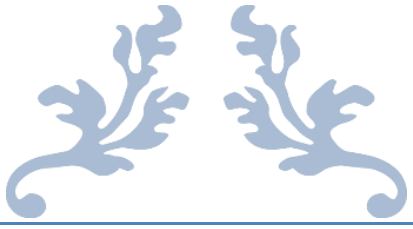
CFLS2110	Elementary Communicative English I
CO 1	Demonstrate basic listening skills by accurately recalling and understanding simple spoken English in various contexts. Identify and recall main ideas, key details, and vocabulary from basic reading
CO 2	materials.
CO 3	Display comprehension of simple spoken English in everyday situations by interpreting and explaining the meaning effectively. Understand and
CO 4	summarize information from simple texts, demonstrating comprehension of vocabulary and basic grammar structures.
CO 5	Apply acquired vocabulary and expressions to communicate effectively in basic

	conversations and written interactions. Demonstrate the application of basic grammar structures and vocabulary to produce short written
CO 6	texts with correct grammar and sentence structure.

Level of Bloom's Revised Bloom's Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

Module No	**Content**	**RBT Level**
1	Listening	1,2,3,4,5,6
2	Reading and Language	1,2,3,4,5,6
3	Speaking Skills, Non-Verbal Aspects	1,2,3,4,5,6
4	Writing	1,2,3,4,5,6



SEMESTER 2

P P Savani University
School of Engineering
Institute of Diploma Studies

Department of Applied Science & Humanities

Course Code: IDSH1040
Course Name: Engineering Mathematics
Prerequisite Course(s): Algebra, Geometry, Trigonometry till 9th Standard level

Teaching & Examination Scheme:

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
3	0	2	5	40	60	-	-	50	0	150

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the course:
To help learners to

- give a comprehensive coverage at an introductory level to the subject of Functions and Limits, Differentiation, Integration and First Order Differential Equations.
- recognize importance of differentiation and integration for solving engineering problems.

Course Content:

SECTION-I			
Module No.	Content	Hours	Weightage in %
1.	**Functions and Limits** Introduction, Function, Types of function, Classification of function, Limit of a function, Properties of limit, Standard limits, limit of trigonometric functions.	5	14
2.	**Differentiation** Introduction, Differentiation, Geometric meaning, Derivative using first principle, Derivative of standard functions, Working rules, Differentiation of composite function, Differentiation of parametric functions, Differentiation of implicit function, Derivative using logarithms, Successive differentiation, Applications of differentiation (Velocity, Acceleration, Maxima & Minima simple problems).	9	18
3.	**Integration** Introduction, Integration of standard functions, Integration by substitution, Integration by parts, Integration using partial fraction, Definite integrals, Theorem on definite integrals, Applications of Integration (Area and Volume simple problems).	9	18
SECTION-II			
4.	**Differential Equations of First order and First degree**	9	18

	Introduction, Formation of differential equations, Solution of differential equations, Separation of variables, Homogeneous equations, Exact Differential Equations, Integrating factor method, Linear differential equation.		
5.	**Complex Number** Introduction, Mathematical Operations, Polar form, Modulus, Amplitude Farm, De Movire's Theorem.	6	18
6.	**Statistics** Introduction, Central tendency, Mean, Mean of discrete observations, Mean of grouped data, Step deviation method, Median, Median for grouped data, Mode, Standard deviation, Standard deviation for grouped data.	7	14

List of Tutorials:

Sr. No.	List of Tutorial	Hours
1.	Functions and Limits-1	2
2.	Functions and Limits-2	2
3.	Differentiation-1	2
4.	Differentiation-2	2
5.	Differentiation-3	2
6.	Integration-1	2
7.	Integration-2	2
8.	Integration-3	2
9.	Differential Equations of First order and First degree-1	2
10.	Differential Equations of First order and First degree-2	2
11.	Complex Number-1	2
12.	Complex Number-2	2
13.	Complex Number-3	2
14.	Statistics-1	2
15.	Statistics-2	2

Text Book:

Title	Author(s)	Publication
Advanced Mathematics for Polytechnic	Dr. N. R. Pandya	Macmillan Publication
Engineering Mathematics - 3rd Edition	Anthony croft & others	Pearson Education Publication

Reference Book:

Title	Author(s)	Publication
Applied Mathematics for Polytechnics - 10th Edition	H. K. Dass	H. K. Dass
Applied Mathematics	W. R.Neelkanth	Sapna Publication
Polytechnic Mathematics	Deshpande S P	Pune Vidyarthi Gruh Prakashan,1984
Polytechnic Mathematics	Prakash D S	S Chand,1985

Course Evaluation:

Theory:

- Continuous Evaluation consists of two tests, each of 30 marks and 1 hour of duration and average of the same will be converted to 30 marks.
- Faculty evaluation consists of 10 marks as per the guidelines provided by the Course Coordinator.
- End Semester Examination consists of 60 marks.

Tutorial:

- Continuous evaluation consists of performance of tutorial which will be evaluated out of 10 Marks for each tutorial and average of the same will be converted to 30 marks.
- MCQ based examination consists of 20 marks.

Course Outcome(s):

After the completion of the course, the following course outcomes will be able to:

IDSH1040	**ENGINEERING MATHEMATICS**
CO1	Apply differentiation and integration for solving engineering problems.
CO2	Implementing statistical methods for solving real world problems.
CO3	Develop the ability to apply differentiation to significant applied problems.
CO4	Estimate the limiting value of algebraic and trigonometric functions.
CO5	Represent complex numbers algebraically and geometrically for solving engineering related problems.

Level of Bloom's Revised Bloom's Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

Module No	**Content**	**RBT Level**
1	Functions and Limits	1,2,3,4
2	Differentiation	2,3,5
3	Integration	2,3,5
4	Differential Equations of First order and First degree	1,2,3,5
5	Complex Number	1,2,3,4,6
6	Statistics	1,2,3,4,5

P P Savani University
School of Engineering
Institute of Diploma Studies

Department of Chemical Engineering

Course Code: IDSH1050
Course Name: Fundamentals of Chemistry
Prerequisite Course(s): --

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
3	2	0	4	40	60	20	30	0	0	150

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:
To help learners to

- The student will understand the interdisciplinary nature of chemistry and to integrate knowledge of mathematics, physics and other disciplines to a wide variety of chemical problems.
- The student will understand the importance of the Periodic Table of the Elements, how it came to be, and its role in organizing chemical information.
- The student will acquire a foundation of chemistry of sufficient breadth and depth.

Course Content:

SECTION-I			
Module. No.	Content	Hours	Weightage in %
1.	**Atomic Structure, Molecular Mass, Acids and Bases** Atom Definition Fundamental particles of Atom their Mass, Charge and Location. Atomic number and Mass number, Definition Isotopes and Isobars with suitable examples. Formation of cation and anion by electronic concept of oxidation and reduction.	06	15
2.	**Molecular Mass** Molecule, Molecular Formula, Molecular Mass, Mole, Definition Simple calculations. Avogadro's Hypothesis – Relationship between Molecular Mass and vapour Density, Avogadro Number.	05	10
3.	**Chemical Bonding and Structure of Molecules** Chemical Bond, Valence, Valence Electrons, Bonding and Non Bonding Electrons, Lewis Symbols, Octet Rule. Definition, Condition for Formation of Ionic Bond, Factors Governing Formation of Ionic Bond, Metallic Bond, Covalent Bond and Co-ordinate Covalent Bond: Hydrogen Bonding,	06	15

4.	**Acids and Bases** Theories of Acids and Bases, Arrhenius Theory, Lowry – Bronsted Theory, Lewis Theory, Advantages of Lewis Theory, pH and pOH Definition, Numerical problems, Indicator, Definition and Examples, Buffer solution, Definition, Types of buffer solution with examples, Application of pH in Industries.	06	10
	SECTION-II		
5.	**Solutions** Definition, Methods of expressing concentration of a solution Molarity, Molality, Normality, Mole fraction and Percentage Mass – Simple problems.	05	10
6.	**Colloids** True solution and Colloidal solution, Definition, Differences, Types of colloids – Lyophilic and Lyophobic colloids. Differences Properties, Tyndall effect, Brownian movement, Electrophoresis and Coagulation. Industrial applications of colloids, Smoke Precipitation by Cottrell's method, Purification of water, Cleansing action of soap, Tanning of leather and Sewage disposal.	05	15
7.	**Electrochemistry** Electrolyte definition, Strong and Weak electrolytes, Examples. Electrolysis definition, Mechanism, Industrial application of Electrolysis, Electroplating, Preparation of surface, Process Factors affecting the stability of the coating, Chrome plating, Electroless plating definition, Advantages of Electroless plating over electroplating , Applications of Electroless plating.	06	15
8.	**Electrochemical-Cell** Electrochemical Cell definition, Representation of a Cell, Single Electrode Potential definition, Galvanic Cell, Formation of Daniel Cell, Electrochemical Series, Definition and Significance, Electrolytic Concentration Cell definition and Formation.	06	10

List of Practical

Sr No	List of Practical/Tutorial	Hours
1.	Using a chemical balance.	02
2.	Introduction to chemistry laboratory – Molarity, Normality, Primary, Secondary standard solutions, Volumetric titrations, Quantitative analysis, Quantitative analysis etc.	04
3.	Demonstration: Preparation of solutions of different concentrations	04
4.	Preparation of standard solution of Oxalic acid.	04
5.	Preparation of standard solution of Sodium Carbonate.	04
6.	Determination of strength of a given solution of Sodium Hydroxide by titrating it against standard solution of Oxalic acid.	04
7.	Determination of strength of a given solution of Hydrochloric acid by titrating it against standard Sodium Carbonate solution.	04
8.	Determination of temporary and permanent hardness in water sample using EDTA as standard solution.	02
9.	Conduct metric titration of strong acid vs. strong base	02

Text Book(s):

Title	Author/s	Publication
Text Book of Engineering Chemistry	Chawla S.	Dhanpat Rai & Co. Pvt. Ltd., Delhi, 2003.
Engineering Chemistry	Sharma B. K.	Krishna Prakashan Media (P) Ltd, Meerut.,2001

Reference Book(s):

Title	Author/s	Publication
Concise Inorganic Chemistry	J.D. Lee	Wiley India
Textbook of Engineering Chemistry (4th Edition)	R. Gopalan, D. Venkappaya, S. Nagarajan	Vikas Publishing house Ltd.

Web Material Link(s):

https://onlinecourses.nptel.ac.in/noc21_cy45/preview
https://nptel.ac.in/noc/courses/noc17/SEM2/noc17-cy03/

Course Evaluation:

Theory:

- Continuous Evaluation consists of two tests each of 30 marks and 1 Hour of duration, which will be converted to 30 marks.
- Faculty evaluation consists of 10 marks as per the guidelines provided by the course coordinator.
- End Semester Examination consists of 60 marks.

Practical:

- Continuous Evaluation consists of performance of Practical which should be evaluated out of 10 marks for each practical and average of the same will be converted to 10 marks.
- Internal Viva consists of 10 marks.
- Practical performance/quiz/drawing/test of 15 marks during End Semester Exam.
- Viva/Oral presentation consists of 15 marks during End Semester Exam.

Course Outcome(s):

After the completion of the course, the following course outcomes will be able to:

IDSH1050	FUNDAMENTALS OF CHEMISTRY
CO1	Implement and evaluate quality control procedures.
CO2	Perform and validate laboratory procedures to conduct tests.
CO3	Improve industrial or chemical processes and laboratory equipment.
CO4	Prepare and purify compounds using standard chemical procedure

Level of Bloom's Revised Bloom's Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

Module No	Content	RBT Level
1	Atomic Structure, Molecular Mass, Acids and Bases	1, 2
2	Molecular Mass	1, 2, 3
3	Chemical Bonding and Structure of Molecules	1, 2, 3
4	Acids and Bases	2, 3, 4
5	Solutions	2, 3, 4
6	Colloids	2, 3, 4

7	Electrochemistry	1, 2, 5
8	Electrochemical-Cell	1, 2, 5

P P Savani University
School of Engineering
Institute of Diploma Studies

Department of Civil Engineering

Course Code: IDCV1010
Course Name: Engineering Mechanics
Prerequisite Course(s): -

Teaching & Examination Scheme:

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
03	02	00	04	40	60	20	30	00	00	150

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:
To help learners to

- understand different types of forces, systematic evaluation of effect of these forces, behavior of rigid and deformable bodies subjected to various types of forces, at the state of rest or motion of the particles.
- understand behavior of structural element under the influence of various loads.

Course Content:

SECTION-I			
Module No.	Content	Hours	Weightage in %
1.	**Introduction Engineering Mechanics** Basic concepts: Definitions, Basic assumptions, Scalar & Vector quantities, Free, Forced and fixed vectors, Force System: Force, Classification & Representation,	05	10
2.	**Coplanar Concurrent Force system** Force as a Vector, Composition of forces, Parallelogram Law, Resolution, Principle of Transmissibility of forces, Resultant of coplanar force system., Equilibrium of coplanar force system, Free body diagrams, Determination of reactions, Equilibrium of a body under three forces, Lami's theorem	09	20
3.	**Coplanar Non-Concurrent force systems:** Moment of a force, Vector representation, Moment for coplanarforce system, Varignon's theorem, Couple, Vector representation, Resolution of a force into a force and a couple., force Systems: Coplanar Concurrent Force system and Coplanar Non-Concurrent force system.	09	20
SECTION-II			
4.	**Friction:** Introduction, Wet and Dry friction, Theory of Dry friction, Angle of friction, Angle of Repose, Cone of friction, Coulomb's laws of friction.	04	15

5.	**Centre of Gravity:** Center of Gravity, Center of Mass and Centroid of curves, areas, volumes, Determination of centroid by integration, Centroid of composite bodies.	09	15
6.	**Moment of Inertia:** Definition of Moment of inertia of area, Perpendicular axis theorem and Polar moment of Inertia, Parallel axis theorem, Moment of inertia of simple areas by integration, Moment of Inertia of Composite Areas., Moment of Inertia of masses, Parallel axis theorem for mass moment of inertia, Mass moment of inertia of simple bodies by integration, Mass moment of inertia of composite bodies	09	20

List of Practical:

Sr. No.	List of Practical	Hours
1.	Coplanar Concurrent Forces	04
2.	Law of parallelogram	02
3.	Coplanar Non concurrent forces	02
4.	Lami's Theorem	02
5.	Coefficient of static friction	02
6.	Parallel force system	02
7.	Numerical practice on Force System	04
8.	Numerical practice on C.G.	04
9.	Numerical practice on M.I.	04
10.	Numerical practice on Friction	04

Reference Book(s):

Title	Author/s	Publication
Applied Mechanics	S. B. Junnarkar & H. J. Shah	Charotar Publication
Engineering Mechanics,	Meriam and Karaige,	Wiley-India
Engineering Mechanics: Statics & Dynamics	S Rajsekaran	Vikas Publication
Engineering Mechanics of Solids	Popov E.P	Prentice Hall of India
Engineering Mechanics,	Meriam and Karaige,	Wiley-India

Course Evaluation:

Theory:

- Continuous evaluation consists of two tests each of 15 marks and 1 hour of duration.
- Submission of assignment which consists of solving 20 numerical and it carried 10 marks of evaluation.
- End semester examination will consist of 60 marks exam.

Practical:

- Continuous Evaluation consists of performance of practical which should be evaluated out of 10 marks for each practical and average of the same will be converted to 10 marks.
- Internal viva consists of 10 marks.
- Practical performance/quiz/drawing/test consists of 15 marks during End Semester Exam.

- Viva/Oral performance consists of 15 marks during End Semester Exam.

Course Outcome(s):

After the completion of the course, the following course outcomes will be able to:

IDCV1010	ENGINEERING MECHANICS
CO 1	Identify fundamental principles of mechanics, equilibrium, statics reactions and internal forces in statically determinate beams.
CO 2	Understand, the basics of friction and its importance.
CO 3	Apply principles of statics to determine c.g and m.i of a different geometrical shape.
CO 4	Analyze problems and solve the problem related to mechanical elements and analyze the deformation behavior for different types of loads.

Level of Bloom's Revised Bloom's Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

Module No	Content	RBT Level
1	Introduction Engineering Mechanics	1,2
2	Coplanar Concurrent Force system	1,2,3
3	Coplanar Non-Concurrent force systems	1,2,3,5
4	Friction	1,2,3,4,5
5	Centre of Gravity	1,2,4,5
6	Moment of Inertia	2,2,4,5

P P Savani University
School of Engineering
Institute of Diploma Studies

Department of Information Technology

Course Code: IDIT1010
Course Name: Introduction to Computer Programming
Prerequisite Course (s): NA

Teaching & Examination Scheme:

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
03	04	00	05	40	60	40	60	00	00	200

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:

To help learners to

- develop understanding of basic concepts that can be used in programming language.
- develop the algorithm as well as flowchart for particular problem.
- enforce logical thinking.
- understand the fundamentals of programming concepts and methodology.

Course Content:

SECTION-I			
Module No.	Content	Hours	Weightage in %
1.	**Introduction to Programming Language** Classification of Programming Languages, Generations of Programming Languages - Machine Language, Assembly Language, High-Level Language, 4GL.	04	05
2.	**Introduction to C, Constants, Variables and Data Types:** Features of C Language, the Structure of C Program, Flow Charts and Algorithms Types of Errors, Debugging, Tracing the Execution of the Program, Watching Variables Values in Memory. Character Set, C Tokens, Keyword and Identifiers, Constants and Variables, Data Types - Declaration and Initialization, User Define Type Declarations - Typedef, Enum, Basic Input, and Output Operations, Symbolic Constants, Overflow and Underflow of Data.	07	15
3.	**Operators, Expressions, and Managing I/O Operations:** Introduction to Operators and its Types, Evaluation of Expressions, Precedence of Arithmetic Operators, Type Conversions in Expressions, Operator Precedence and Associatively. Introduction to Reading a Character, Writing a Character, Formatted Input and Output.	07	15

4.	**Conditional Statements:** Decision Making & Branching: Decision Making with If and If - else Statements, Nesting of If-else Statements, The Switch and go-to statements, Ternary (?:) Operator. Looping: The while Statement, The Break Statement & The Do. While loop, The FOR loop, Jump within loops - Programs.	05	15
SECTION-II			
5.	**Arrays:** Introduction, One-dimensional Arrays, Two-dimensional Arrays, Concept of Multidimensional Arrays.	07	15
6.	**Strings:** Declaring and Initializing String Variables, Arithmetic Operations on Characters, Putting Strings Together, Comparison of Two Strings, String Handling Functions.	07	15
7.	**User-Defined Functions:** Concepts of User-defined Functions, Prototypes, function Definition, Parameters, Parameter Passing, Calling a Function, Recursive Function, Macros and Macro Substitution	08	20

List of Practical:

Sr. No	List of Practical	Hours
1.	Introduction to C programming environment, compiler, Linker, loader, and editor. C Program to display "HELLO PPSU"	04
2.	Working with basic elements of C languages (different input functions, different output functions, different data types, and different operators)	08
3.	Working with C control structures (if statement, if-else statement, nested if-else statement, switch statement, break statement, goto statement)	10
4.	Working with C looping constructs (for loop, while loop, do-while and nested for loop)	10
5.	Working with the array in C (1-D array, and 2-D array)	08
6.	Working with strings in C (input, output, different string inbuilt functions)	08
7.	Working with user-defined functions in C (function with/without return type, function with/without argument, function and array)	08
8.	Working with recursive function in C	04

Text Book(s):

Title	Author/s	Publication
Programming in ANSI C	E. Balagurusamy	Tata McGraw Hill
Introduction to Computer Science	ITL Education Solutions Limited	Pearson Education

Reference Book(s):

Title	Author/s	Publication
Programming in C	Ashok Kamthane	Pearson
Let Us C	Yashavant P. Kanetkar	Tata McGraw Hill
Introduction to C Programming	Reema Thareja	Oxford Higher Education
Programming with C	Byron Gottfried	Tata McGraw Hill

Web Material Link(s):

- http://www.digimat.in/nptel/courses/video/106104128/L01.html
- https://www.youtube.com/watch?v=3QiItmIWmOM

Course Evaluation:

Theory:

- Continuous Evaluation consists of two tests, each of 30 marks and 1 hour of duration and average of the same will be converted to 30 marks.
- Faculty evaluation consists of 10 marks as per the guidelines provided by the Course Coordinator.
- End Semester Examination consists of 60 marks.

Practical:

- Continuous Evaluation consists of performance of practical which will be evaluated out of 10 marks for each practical and average of the same will be converted to 20 marks.
- Internal viva consists of 20 marks.
- Practical performance/quiz/drawing/test consists of 30 marks during End Semester Exam.
- Viva/ Oral performance consists of 30 marks during End Semester Exam.

Course Outcome(s):

After the completion of the course, the student will be able to

- learn the fundamentals of programming.
- develop efficient programs with their own logic & capabilities.
- understand the syntax and semantics of the C language.

Course Outcome(s):

After the completion of the course, the following course outcomes will be able to:

IDIT1010	**INTRODUCTION TO COMPUTER PROGRAMMING**
CO 1	Infer the basic concepts of data representation, algorithms and coding methods in computer system.
CO 2	Interpret the knowledge about c programming syntax.
CO 3	Apply basic principles of imperative and structural programming to solve complex problems.
CO 4	Design, develop and debug programs of c programming language.

Level of Bloom's Revised Bloom's Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

Module No	**Content**	**RBT Level**
1	Introduction to Programming Language	1, 2
2	Introduction to C, Constants, Variables and Data Types:	1, 2, 3
3	Operators, Expressions, and Managing I/O Operations	2,3,4,6
4	Conditional Statements	2,4,5
5	Arrays	2, 4,6
6	Strings	2, 4,6
7	User-Defined Functions	2,4,6

P P Savani University
School of Engineering
Institute of Diploma Studies

Department of Science & Humanities

Course Code: IDSH1060
Course Name: Electrical & Electronics Workshop
Prerequisite Course(s): Concept of Science up to 9th Standard

Teaching & Examination Scheme

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
00	02	00	01	00	00	50	00	00	00	50

Objective(s) of the course:
To help learner to

- think in core concept of their engineering application by studying various topics involved in branch specific applications.
- identify basic fundamental electronic components in circuits.
- learn to use common electronic component on breadboard.
- understand components of instruments, terminology and applications.
- demonstrate the ability to collect and analyze data and to prepare coherent reports of his or her findings.

Sr. No.	List of Practical	Hours
1	To Understand & Draw the symbols of various electronic devices.	2
2	To identify resistors, capacitors using Different codes.	2
3	Verification of Truth tables of Logic Gates (NAND, NOR, EX-OR, AND, OR, NOT).	4
4	To study cathode ray oscilloscope and perform measurements.	4
5	To study digital multi-meter and perform testing of various components.	2
6	To study soldering- de-soldering techniques.	2
7	To study wiring diagram of ceiling Fan.	2
8	How Fluorescent Lights Work.	2
9	To study about stair case wiring two-way switch.	2
10	Explaining the function of Refrigerator and Air conditioner.	4
11	Explaining the core concept of power transmission.	4

Evaluation:

- Continuous Evaluation consists of performance of practical which will be evaluated out of 10

marks for each practical and average of the same will be converted to 20 marks.

- Internal viva consists of 30 marks.

Course Outcome:

After completion of the course, the student will be able to

- demonstrate the ability to think in core concept of their engineering application by studying various topics involved in branch specific applications.
- develop the ability to collect and analyze data and to prepare coherent reports of his or her findings.

Course Outcome(s):

After the completion of the course, the following course outcomes will be able to:

IDSH1060	ELECTRICAL & ELECTRONICS WORKSHOP
CO 1	Identify the ability to design various electronic circuit on a bread board
CO 2	Recognize the basic electronic devices and components in a circuit connection.
CO 3	Identify the ability to design a pcb.
CO 4	Define the practical side of basic physics laws.

Level of Bloom's Revised Bloom's Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

Module No	Content	RBT Level
1	Electronic Components	1,2,3,4
2	Electronic Devices	1,2,3,4
3	Understanding of Breadboard	1,2,4,5,6
4	Wiring of Breadboard	1,2,4,5,6
5	Ohm's Law	1,2,3,4
6	Rectifiers	1,2,3,5,6
7	KCL & KVL	1,2,3,4,6
8	LDR	1,2,3,6
9	Electricity Lab	1,2,3,4
10	CRO	1,2,4,5
11	PCB	1,2,6

P P Savani University
Centre for Language Studies

Course Code: CFLS2120
Course Name: Elementary Communicative English II
Prerequisite Course(s): -- A1

Teaching & Examination Scheme:

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
02	00	00	02	100	00	00	00	--	--	100

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:
To help learners to:

- Recall basic listening skills and demonstrate understanding of simple spoken English in various contexts. Recognize and comprehend basic reading materials by identifying main ideas, key details, and vocabulary.
- Interpret and explain the meaning of simple spoken English in everyday situations. Comprehend and summarize information from simple texts, demonstrating understanding of vocabulary and basic grammar structures.
- Utilize acquired vocabulary and expressions to communicate effectively in basic conversations and written interactions. Apply basic grammar structures and vocabulary to produce short written texts with correct grammar and sentence structure.
- Analyze and evaluate spoken and written texts to identify main ideas, supporting details, and specific information. Analyze and identify grammatical structures and vocabulary usage in written and spoken English.
- Evaluate one's own speaking skills by assessing fluency, accuracy, and coherence in basic conversations. Assess and critique written texts for clarity, grammar usage, and coherence.
- Generate short written texts, such as emails, postcards, and descriptions, using correct grammar, vocabulary, and sentence structure.
- Create and engage in basic conversations using appropriate grammar structures and vocabulary to express ideas accurately.

Course Content:

Section I			
Module No.	Content	Hours	Weightage in %
1.	**Listening** Listening to short dialogues and conversations to understand greetings, introductions, and basic information. Simple instructions and following them. Listening to short descriptions and narratives to grasp main ideas and key details. Recorded conversations to understand everyday situationsand respond appropriately.	15	25

Section II			
2.	**Reading and Language** Reading short articles, dialogues, and narratives to understand the main ideas, supporting details, and vocabulary. Identifying and understanding basic grammatical structures and sentence patterns. Using context clues to comprehend unfamiliar words and phrases. Reading and understanding simple instructions, signs, and labels	15	25
Section III			
3.	**Speaking Skills, Non-Verbal Aspects and Corporate Grooming and Etiquettes** Engaging in basic conversations on topics like personal information, daily routines, and hobbies. Role-playing various situations, such as ordering food in a restaurant or asking for directions. Describing people, places, and objects using basic vocabulary and sentence structures. Participating in pair or group discussions on familiar topics	15	25
Section IV			
4.	**Writing** Writing short paragraphs and sentences to describe people, places, and daily routines. Composing simple emails, postcards, and messages using appropriate language and structure. Practicing basic sentence formation, grammar usage, and punctuation. Developing writing fluency by expressing personal opinions and ideas on various topics	15	25

Text Book (s):

Title	Author/s	Publication
New Cutting Edge Intermediate Students' Book	Sarah. Cunningham Longman and Peter Moor	Pearson Longman
New Cutting Edge Upper Intermediate Student's' Book	Sarah. Cunningham Longman and Peter Moor	Pearson Longman

Online References:

- **https://www.academia.edu/34869668/New_Cutting_Edge**
- **https://www.academia.edu/34869668/New_Cutting_Edge_Upper**

Course Evaluation:

Theory:

- Continuous Evaluation consists of four tests(LSRW) each of 25 marks.

Course Outcome(s):

After completion of the course, the student will be able to

CFLS2120	Elementary Communicative English II
CO 1	Demonstrate basic listening skills by accurately recalling and understanding simple spoken English in various contexts. Identify and recall main ideas, key details, and

	vocabulary from basic reading materials
CO 2	Display comprehension of simple spoken English in everyday situations by interpreting and explaining the meaning effectively. Understand and summarize information from simple texts, demonstrating comprehension of vocabulary and basic grammar structures.
CO 3	Apply acquired vocabulary and expressions to communicate effectively in basic conversations and written interactions. Demonstrate the application of basic grammar structures and vocabulary to produce short.
CO 4	Assessing spoken and written texts to identify main ideas, supporting details, and specific information accurately. Analyze and identify grammatical structures and vocabulary usage in written and spokenEnglish
CO 5	Evaluate one's own speaking skills by assessing fluency, accuracy, andcoherence in basic conversations. Assess and critique written texts for clarity, grammar usage, and coherence.
CO 6	Generate short written texts, such as emails, postcards, and descriptions, using correct grammar, vocabulary, and sentence structure. Create and engage in basic conversations using appropriate grammar structures and vocabulary to express ideas accurately and creatively.

Level of Bloom's Revised Bloom's Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

Module No	Content	RBT Level
1	Listening	1,2,3,4,5,6
2	Reading and Language	1,2,3,4,5,6
3	Speaking Skills, Non-Verbal Aspects	1,2,3,4,5,6
4	Writing	1,2,3,4,5,6

SECOND YEAR DIPLOMA IN COMPUTER ENGINEERING

	P P SAVANI UNIVERSITY																	
	SCHOOL OF ENGINEERING																	
	P P SAVANI INSTITUTE OF DIPLOMA STUDIES																	
	TEACHING & EXAMINATION SCHEME FOR DIPLOMA IN COMPUTER ENGINEERING PROGRAMME AY:2024-25(BATCH:2024)																	
Sem.	**Course Code**	**Course Title**	**Course Category**	**Offered By**	**Teaching Scheme**					**Examination Scheme**								
					Contact Hours				**Credit**	**Theory**		**Practical**		**Tutorial**		**Total**	
					Theory	**Practical**	**Tutorial**	**Total**		**CE**	**ESE**	**CE**	**ESE**	**CE**	**ESE**		
3	IDSH2010	Discrete Mathematics	Interdisciplinary	SH	3	0	2	5	5	40	60	0	0	50	0	150	
	IDCE2011	Data Structures	Major/Core	CE	3	2	0	5	4	40	60	20	30	0	0	150	
	IDCE2020	Database Management System	Major/Core	CE	3	4	0	7	5	40	60	40	60	0	0	200	
	IDIT2010	Object Oriented Concepts & Programming	Major/Core	IT	3	4	0	7	5	40	60	40	60	0	0	200	
	IDIT2020	Web Application Design	Major/Core	IT	0	4	0	4	2	00	00	100	0	0	0	100	
	CLSC2010	Universal Human Values	VAC	CLSC	2	0	0	2	2	00	00	100	0	0	0	100	
							Total	**30**	**23**							**900**	
4	IDCE2030	Operating System	Major/Core	CE	3	2	0	5	4	40	60	20	30	0	0	150	
	IDCE2040	Network Essentials	Major/Core	CE	3	2	0	5	4	40	60	20	30	0	0	150	
	IDIT2031	Web Technology	Major/Core	IT	0	4	0	4	2	0	0	100	0	0	0	100	
	IDIT2040	Mobile Application Development	Major/Core	IT	3	4	0	7	5	40	60	40	60	0	0	200	
	IDCE2050	Computer Architecture	Major/Core	CE	3	2	0	5	4	40	60	20	30	0	0	150	
	IDCE2910	Project	Minor	CE	4			4	4	00	00	100	0	0	0	100	
							Total	**30**	**23**							**850**	

SEMESTER 3

P P Savani University
School of Engineering
Institute of Diploma Studies

Department of Applied Science and Humanities

Course Code: IDSH2010
Course Name: Discrete Mathematics
Prerequisite Course (s): NIL

Teaching & Examination Scheme:

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
03	00	02	05	40	60	00	00	50	00	150

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:
To help learners to

- extend concepts of set theory by study of relation and lattice.
- illustrate mathematical logic with various techniques of program verification.
- apply knowledge of discrete mathematics for problem solving skills necessary to succeedin design and analysis of algorithms, database management, software engineering and computer networks.

Course Content:

Section I			
Module No.	Content	Hours	Weightage in %
1.	**Set, Relation and function** Set, Basic operations on sets, Introduction of Relation, Type of Relation, Properties of Relation ,Equivalence Relation, Partial Ordering, Type of function, Composition of Function	10	20
2.	**Introduction to Graphs** Graphs and their basic properties – degree, path, cycle, semi Group, subgraph, isomorphism, Eulerian and Hamiltonian walk, trees.	12	30
Section II			
1.	**Mathematical Logic and Proofs** Properties, Logical operator, Algebra of Proposition, Predicates and Quantifiers, Rules of Inference, Proof Method,	10	22
2.	**Tree and Group Theory** Introduction to Tree, Rooted Tree, Properties of tree, Binary tree, Spanning trees, Minimum Spanning tree, Graph and Graph model, Type of Graph, Representing Graph and Isomorphism.	13	28

List of Tutorials:

Sr. No	Name of Tutorial	Hours
1.	Set, Relation and function	2
2.	Set, Relation and function	2
3.	Set, Relation and function	2
4.	Set, Relation and function	2
5.	Introduction to Graphs	2
6.	Introduction to Graphs	2
7.	Introduction to Graphs	2
8.	Introduction to Graphs	2
9.	Mathematical Logic and Proofs	1
10.	Mathematical Logic and Proofs	2
11.	Mathematical Logic and Proofs	2
12.	Mathematical Logic and Proofs	2
13.	Tree and Group Theory	2
14.	Tree and Group Theory	2
15.	Tree and Group Theory	2
16.	Tree and Group Theory	1

Text Book:

Title	Author/s	Publication
Discrete Mathematics and Its Applications	Kenneth Rosen	McGraw Hill, New York.

Reference Book(s):

Title	Author/s	Publication
A Textbook of Discrete Mathematics	Dr. Swapan Kumar Sarkar	S. Chand & Company Ltd., New Delhi.
Discrete Mathematical Structure with Applications to Computer Science	J.P. Trembly, R. Manohar	Tata McGraw-Hill Publishing Company Ltd. New Delhi.
Graph Theory with Applications to Engineering and Computer Science	Narsingh Deo	PHI Learning Pvt. Ltd. New Delhi.

Web Material Links:

- **http://nptel.ac.in/courses/111107058/**
- **http://nptel.ac.in/courses/111106086/**
- **http://nptel.ac.in/courses/111104026/**

Course Evaluation:

Theory:

- Continuous evaluation consists of two tests each of 30 Marks and 1 Hour of duration.
- Submission of assignments which consists of 10 Questions to be answered under each module and it carried of 10 Marks of continuous evaluation.

- End Semester Examination will consist of 60 Marks.

Tutorial:

- Continuous evaluation consists of performance of tutorial which should be evaluated out of 10 Marks for each tutorial in the next turn and average of the same will be converted to 30 Marks.
- MCQ based examination of 10 Marks.
- Internal Viva of 10 Marks.

Course Outcome(s):

After the completion of the course, the following course outcomes will be able to:

IDSH2010	**DISCRETE MATHEMATICS**
CO 1	Understand the basic principles of sets, function and relations to solve its application problems.
CO 2	Interpret different traversal methods for tree and graph and solve model problem in computer science using graphs and trees.
CO 3	Develop logical argument using truth table and rules of inferences in predicate calculus.
CO 4	Use the properties of different algebraic structures.

Level of Bloom's Revised Bloom's Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

Module No	**Content**	**RBT Level**
1	Set, Relation and function	1,2,4,6
2	Introduction to Graphs	1,2,3,5,6
3	Mathematical Logic and Proofs	1,2,3,4,6
4	Tree and Group Theory	1,2,3,5,6

P P Savani University
School of Engineering
Institute of Diploma Studies

Department of Computer Engineering

Course Code: IDCE2011
Course Name: Data Structures
Prerequisite Course (s): Introduction to Computer Programming

Teaching & Examination Scheme:

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
03	02	00	04	40	60	20	30	00	00	150

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:
To help learners to
- understand linear and non-linear data structures and its applications.
- analyze various searching and sorting algorithms and its impacts on data structures.
- develop logic building and problem solving skills.

Course Content:

Section I			
Module No.	Content	Hours	Weigh tage in %
1.	**Introduction** Introduction, Data types, Types of Data Structure,Primitive and non-primitive data structures.	05	15
2.	**Array and Strings** Row major arrays, column major arrays, overview ofvarious array operations, searching an element into an array, string representation, string operations	07	15
3.	**Stack and Queue** Linear and non-linear data structures, Stack: array representation of stack, PUSH POP operations on stack, Queue: Array representation of Queue, Operations on Queue, Applications of queue, Circular queue	10	20
Section II			
1.	**Linked List** Pointers Revision, Revision of Structure, Revision of structure using pointers, Dynamic Memory Allocation, Linked list Presentation, Types of Linked List, Basic operations on singly linked list , circular linked list, Applications of linked list	08	18
2.	**Sorting and Hashing**	07	18

	Sorting Methods: Bubble Sort, Selection Sort, Quick Sort, Insertion Sort, Merge Sort, Radix Sort, Hashing Concepts, Hash functions: Division Method, Middle Square Method, and Folding Method.		
3.	**Trees** Non-linear data structure, Tree definition, Representation of Tree, Binary Tree Traversals, Conversion from general to binary tree, Threaded Binary Tree, Heap, Binary Search Tree,2-3 Tree, AVL Tree, Applications of Trees	08	14
	TOTAL	**45**	**100**

List of Practical:

Sr. No	Name of Practical	Hours
1.	Array and String Programs	01
2.	Programs to perform various operations on Stack	04
3.	Programs to perform various operations on Queue	02
4.	Programs to perform various operations on Linked List	02
5.	Programs to perform various types of sorting algorithms.	04
6.	Programs to perform various operations on Tree	02
	TOTAL	**15**

Reference Book(s):

Title	Author/s	Publication
Data and File Structures using C,	Thareja, Reema	Oxford University Press
Data Structures using C	ISRD Group.	McGraw Hill

Web material link:

- https://www.coursera.org/learn/data-structures
- https://nptel.ac.in/courses/106102064/
- https://nptel.ac.in/courses/106106127/

Course Evaluation:

Theory:

- Continuous Evaluation consists of two tests each of 30 marks and 1 hour of duration, which will be converted to 30 marks.
- Faculty evaluation consists of 10 marks as per the guidelines provided by the course coordinator.
- End Semester Examination consists of 60 marks

Practical:

- Continuous Evaluation consists of performance of practical which will be evaluated out of 10 marks for each practical and average of the same will be converted to 10 marks.
- Internal viva consists of 10 marks.
- Practical performance/quiz/drawing/test consists of 15 marks during End Semester Exam.
- Viva/ Oral performance consists of 15 marks during End Semester Exam.

Course Outcome(s):

After the completion of the course, the following course outcomes will be able to:

IDCE2011	DATA STRUCTURES
CO1	Differentiate primitive and non-primitive data structures.
CO2	Design and apply appropriate data structures for solving computing problems.
CO3	Compile the knowledge of different data structures to enhance the performance of a program.
CO4	Apply sorting and searching algorithms to the small and large datasets.
CO5	Analyze algorithms for specific problems.

Level of Bloom's Revised Bloom's Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

Module No	Content	RBT Level
1	Introduction	2,4
2	Array and Strings	1,2,3
3	Stack and Queue	2,4,5
4	Linked List	2,4,5
5	Sorting and Hashing	2,4,6
6	Trees	2,5

P P Savani University
School of Engineering
Institute of Diploma Studies

Department of Computer Engineering

Course Code: IDCE2020
Course Name: Database Management System
Prerequisite Course (s): --

Teaching & Examination Scheme:

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
03	04	00	05	40	60	40	60	00	00	200

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:
To help learners to
- understand database concepts, applications, data models, schemas and instances.
- implement the relational database design and data modelling using entity-relationship (ER) model.
- use of SQL in querying the database
- demonstrate Normalization process.
- learn the new emerging Technologies and Applications in database.

Course Content:

SECTION-I			
Module No.	Content	Hours	Weightage in %
1.	**Introduction to Databases and Transactions** What is database system, purpose of database system,view of data, relational databases, database architecture, transaction management	07	15
2.	**Data Model** The importance of data models, Basic building blocks, Business rules, The evolution of data models, Degrees ofdata abstraction.	07	15
3.	**Database Design ,ER-Diagram and Unified Modeling Language** Database design and ER Model: overview, ER-Model, Constraints, ER-Diagrams, ERD Issues, weak entity sets, Codd's rules, Relational Schemas, Introduction to UML **Relational database model**: Logical view of data, keys, and integrity rules. Relational Database design: features ofgood relational database design, atomic domain and Normalization (1NF, 2NF, 3NF, BCNF).	09	20
SECTION - II			

1.	**Relational Algebra and Calculus** Relational algebra: introduction, Selection and projection, set operations, renaming, Joins, Division, syntax, semantics. Operators, grouping and ungrouping, relational comparison. Calculus: Tuple relational calculus, Domain relational Calculus, calculus vs algebra, computational capabilities.	08	20
2.	**Constraints, Views and SQL** What is constraints, types of constrains, Integrity constraints, Views: Introduction to views, data independence, security, updates on views, comparison between tables and views **SQL**: data definition, aggregate function, Null Values, nested sub queries, Joined relations. Triggers.	08	15
3.	**Transaction management and Concurrency control**. Transaction processing, Transaction & System Concepts,Desirable properties of transaction, Basic concepts ofconcurrency control, Concepts of locks , Live Lock, Deadlock	06	15

List of Practical:

Sr. No	Name of Practical	Hours
1.	To study DDL-create and DML-insert commands	10
2.	Create table and insert sample data in tables.	04
3.	Apply the constraints like Primary Key, Foreign key, NOT NULL to the tables.	04
4.	Perform queries involving predicates LIKE, BETWEEN, IN etc	04
5.	To Perform various data manipulation commands, aggregate functions and sorting concept on all created tables.	06
6.	To study Single-row functions	04
7.	Displaying data from Multiple Tables (join)	06
8.	To apply the concept of Aggregating Data using Group functions.	04
9.	To solve queries using the concept of sub query.	04
10.	To study Transaction control commands	06
11.	Write Cursor	04
12.	Write Trigger	04

Reference Book(s):

Title	Author/s	Publication
Database System Concepts	A. Silberschatz, S. Sudarshan& H. F. Korth	fifth Edition McGraw-Hill
SQL/ PL/SQL	Bayross, Ivan	BPB

Web material link:

- http://swayam.gov.in

- https://www.w3schools.com/sql/
- https://in.udacity.com/
- https://www.codecademy.com/learn/learn-sql

Course Evaluation:

Theory:

- Continuous Evaluation consists of two tests each of 30 marks and 1 hour of duration, whichwill be converted to 30 marks.
- Faculty evaluation consists of 10 marks as per the guidelines provided by the coursecoordinator.
- End Semester Examination consists of 60 marks

Practical:

- Continuous Evaluation consists of performance of practical which will be evaluated out of 20 marksfor each practical and average of the same will be converted to 20 marks.
- Internal viva consists of 20 marks.
- Practical performance/quiz/drawing/test consists of 30 marks during End Semester Exam.
- Viva/ Oral performance consists of 30 marks during End Semester Exam.

Course Outcome(s):

After completion of the course, the student will be able to

- recognize the various elements of Database Management Systems
- recognize the purpose of query processing, optimization and demonstrate the SQL query evaluation

Course Outcome(s):

After the completion of the course, the following course outcomes will be able to:

IDCE2020	DATABASE MANAGEMENT SYSTEM
CO 1	Describe DBMS architecture, physical and logical database designs, database modeling, relational, hierarchical and network models.
CO 2	Classify physical data, conceptual data and its conversion into relational databases.
CO 3	Demonstrate an understanding of normalization theory and apply such knowledge to be normalization of a database.
CO 4	Learn and apply structure query language (sql) for database definition and database manipulation.

Level of Bloom's Revised Bloom's Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

Module No	Content	RBT Level
1	Introduction to Databases and Transactions	1, 2
2	Data Model	1, 2, 6
3	Database Design ,ER-Diagram and Unified Modeling Language	2,4,6
4	Relational Algebra and Calculus	2,4
5	Constraints, Views and SQL	2,4
6	Transaction management and Concurrency control	2,4,5

P P Savani University
School of Engineering
Institute of Diploma Studies

Department of Information Technology

Course Code: IDIT2010
Course Name: Object Oriented Concepts & Programming
Prerequisite Course (s): --

Teaching & Examination Scheme:

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
03	04	00	05	40	60	40	60	00	00	200

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:
To help learners to
- understand the basic object oriented programming concepts and apply them in problem solving.
- illustrate inheritance concepts for reusing the program.

Course Content:

Section I			
Module No.	Contentt	Hours	Weightage in %
1.	**OOP Concepts and Java Programming** Classes and objects, data abstraction, encapsulation, inheritance, benefits of inheritance, polymorphism, procedural and object oriented programming paradigm, Object-Oriented programming, Java data types, Type Casting and type conversion, Arrays.	07	15
2.	**Operators and Control Statements** Operators: Arithmetic, Bitwise, Relational, Boolean logical, Assignment, Ternary, Operator precedence, Control statements: if-else, if-else ladder, nested if-else and switch statements, Iteration statements: while, do-while, for; Jump statements: break, continue.	08	15
3.	**Introduction to Classes** Classes and Objects, Access modifiers, Constructors, The garbage collector & finalizer, 'this' keyword, Class vs. instance members, 'static' keyword, Command line arguments, Wrapper classes.	08	20
Section II			

1.	**String Handling** String constructors, Concatenation and conversion of astring, Changing case of string, Character extraction, String comparison, Introduction to scanner class	08	15
2.	**Inheritance, Packages and Interface:** Inheritance, Super and sub class, Hiding methods, Abstract classes, Final methods and classes, Packages, Access protection, Interfaces.	08	20
3.	**Introduction to Exception Handling:** Fundamentals of exception – handling, Exception types, Tryand catch.	06	15

List of Practical:

Sr. No	Name of Practical	Hours
1.	Write a program to print Hello World on console.	02
2.	a) Write a program to find the area of square and triangle. b) Write a program to print ASCII code for given character.	04
3.	a) Write a program to display total numbers of months and days for given days. Example: if input is 62 days, output should be 2 months and 2 days. b) Write a program to find maximum of three numbers.	04
4.	a) Write a program to print first N numbers in ascending and descending order, where N is the user input. b) Write a program to reverse the given digit.	04
5.	Create a student class with student_id, subject_code and marks which takes input using method getdata() and display result using putdata() method.	04
6.	Write a program for Box class which contains default constructor and parameterized constructor for width, height, depth and the method volume which finds the volume of Box.	04
7.	Create a class Biodata having fields name, qualification and date of birth. Class Biodata inherits a class Address having fields city and pin. Write a program to display all details for 2 persons.	04
8.	a) Write three classes for examination result: Student, Exam and Result. Student class has data members enrollment no, exam number and student name. Create the class Exam by inheriting student class. Exam class adds fields representing the marks scored in three subjects. Derive Result from the Exam class and it has its own fields such as total_marks and percentage. b) Create a class Grandfather which has the attributes surname and nationality. Create another class called Father which inherits Grandfather and has the attributes name, surname and nationality. Create class called Son which inherits Grandfather and has the attributes name, surname and nationality. Write a program to display the specified details.	10
9.	Create interface for Sports which will be inherited by Football class and Cricket class with getscore() method.	04
10.	Describe abstract class called Shape which has three subclasses say Triangle, Rectangle, and Circle. Define one method area() in the abstract class and override this area() in these three subclasses to calculate for specific object i.e. area() of Triangle subclass should calculate area of triangle etc. Same for Rectangle and Circle.	04
11.	Write a program that performs following string operations. String length, String copy, String concatenation, Character extraction, String comparison	10

12.	a) Write a program that handle arithmetic exception generated by division by zero error. b) Write a program to handle the exception using try and multiple catch block	06

Reference Book(s):

Title	Author/s	Publication
The Complete Reference, Java 2	Herbert Schildt	Fifth Edition TMH
Programming in Java	Sachin Malhotra & Saurabh Chaudhary	Oxford University Press.
Java Programming	D. S. Malik	Cengage Learning

Web material link:

- http://java.sun.com/
- http://www.oracle.com/technetwork/java/index.html
- http://www.oracle.com/technetwork/java/javase/overview/index.html
- http://download.oracle.com/javase/7/docs/api/index.html

Course Evaluation:

Theory:

- Continuous Evaluation consists of two tests each of 30 marks and 1 hour of duration, which will beconverted to 30 marks.
- Faculty evaluation consists of 10 marks as per the guidelines provided by the course coordinator.
- End Semester Examination consists of 60 marks

Practical:

- Continuous Evaluation consists of performance of practical which will be evaluated out of 20 marks for each practical and average of the same will be converted to 20 marks.
- Internal viva consists of 20 marks.
- Practical performance/quiz/drawing/test consists of 30 marks during End Semester Exam.
- Viva/ Oral performance consists of 30 marks during End Semester Exam.

Course Outcome(s):

After completion of the course, the student will be able to

- describe object oriented concepts
- perform programs related to basic concepts of Java.
- apply methods of string class to manipulate string.

Course Outcome(s):

After the completion of the course, the following course outcomes will be able to:

IDIT2010	OBJECT ORIENTED CONCEPTS & PROGRAMMING
CO 1	Interpret the basic concepts of object oriented programming and apply them in problem solving.
CO 2	Recognize different data types, operators and functionalities of java programming.
CO 3	Develop the application by applying the different java programming concepts.
CO 4	Demonstrate programs on file handling, exception handling and multithreading.

Level of Bloom's Revised Bloom's Taxonomy in Assessment

1: Remember	2: Understand	3: Apply

4: Analyze	5: Evaluate	6: Create

Module No	Content	RBT Level
1	OOP Concepts & Java Programming	1, 2
2	Operators and Control Statements	1, 2, 3
3	Introduction to Classes	1, 2, 3
4	String Handling	2, 3, 4
5	Inheritance, Packages and Interface	2, 3, 4
6	Introduction to Exception Handling	2, 3, 4

P P Savani University
School of Engineering
Institute of Diploma Studies

Department of Information Technology

Course Code: IDIT2020
Course Name: Web Application Design
Prerequisite Course (s): --

Teaching & Examination Scheme:

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
00	04	00	02	00	00	100	00	00	00	100

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:
To help learners to

- understand working of Internet/ Websites, Client Server Model and Internet Tools.
- understand and develop HTML Web pages.
- control the Look and feel of web pages by using CSS

List of Practical(s):

Sr. No	Name of Practical	Hours
1.	**Introduction to Web Designing:** Internet, WWW, Browser, Search engine Client Server Model, URL, Web Pages, Website and Web Services, Types of Websites	04
2.	HTML Tags and Attributes, Types of HTML Tags, Rules of nesting, Basic Tags (HTML Tag. Head Tag, Title Tag, Body Tags).	04
3.	**Page Formatting:** Adding a new Paragraph, Adding a line break, Inserting a blank space, changing page background , Div and Span tags	04
4.	**Text Formatting:** Html Headings, Formatting elements (<b> Bold text , Important text ,<i> Italic text , Emphasized text , <mark> Marked text, <small> Small text, <del> Deleted text, <ins> Inserted text, <sub> Subscript text, <sup> Superscript text), Comments, Horizontal Lines	04
5.	**Creating Lists:** Ordered List, Unordered Lists, Definition Lists	04
6.	Images, Text Links, Image Links, opening a page in New Window or Tab, Linking to an area of same page	04
7.	Introduction to Table Tags	04
8.	Frames & Iframe	04
9.	HTML Forms , XHTML	04
10.	Cascading Style Sheets Introduction, Benefits of CSS, CSS Syntax, CSS Implementation (inline, internal and external), CSS Selectors (ID Selectors, Class Selectors, Grouping Selectors, Universal Selectors, CSS Pseudo-classes), CSS properties (background-color,	12

	background-image, border-style, height, width, color, text-align, font-family, font-style, font-size, font-weight), Box Model in CSS(margin, border, padding)	
11.	Small Project using HTML and CSS	12

Reference Book(s):

Title	Author/s	Publication
Head First HTML and CSS: A Learner's Guide to Creating Standards-Based Web Pages	Elisabeth Robson Eric Freeman	O Reilly Publications
Web Technologies, Black Book	-	Kogent Learning SolutionsInc

Web material link:

- https://www.w3schools.com/html/
- https://www.w3schools.com/css/
- https://www.w3schools.com/bootstrap/

Course Evaluation:

Practical:

- Continuous Evaluation consists of performance of practical which will be evaluated out of 10 marksfor each practical and average of the same will be converted to 30 marks.
- Practical performance/quiz/drawing/test consists of 30 marks.
- Small Project(Website) developed consists of 40 marks

Course Outcome(s):

After the completion of the course, the following course outcomes will be able to:

IDIT2020	WEB APPLICATION DESIGN
CO 1	Describe the concepts of world wide web, and the requirements of effective web design.
CO 2	Apply html, css and javascript concepts by completing hands on activities.
CO 3	Memorize different tags responsible for web application development.
CO 4	Design and produce a front end web pages for a specified client.

Level of Bloom's Revised Bloom's Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

Module No	Content	RBT Level
1	Introduction to Web Designing	2,3
2	HTML Tags and Attributes	1,2,4
3	Page Formatting	2,3,4
4	Text Formatting	2,4
5	Creating Lists	2,4
6	Images, Text Links, Image Links	1,2,4
7	Introduction to Table Tags	2,3,6
8	Frames & Iframe	1,4
9	HTML Forms	4,6
10	Cascading Style Sheets	1,2,6
11	Small Project using HTML and CSS	6

P P Savani University

Centre for Life Skills Courses (CLSC)

Course Code: CLSC2010
Course Name: Universal Human Values

Teaching & Examination Scheme:

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
02	00	00	02	0	0	100	0	0	0	100

Course Description:
Turns a universal vision for enlightened youth into reality through a value based holistic education .IPDC effectively allows students to shape their success through a series of interactive lectures and discussions. IPDC ensures the development of intelligent quotient, physical quotient, emotional quotient, and spiritual quotient, of these quotients to enable youths to unleash their full inner potential.

Objective(s) of the Course:
- To provide students with a holistic education – focused on increasing their intelligence quotient, physical quotient, emotional quotient and spiritual quotient
- To provide students with hard and soft skills, making them more marketable when entering the workforce
- To educate students on their social responsibilities as citizens of India
- To provide students with a value-based education which will enable them to be successful in their family, professional, and social relationships.
- To teach self-analysis and self-improvement exercises to enhance the potential of the participants.

Course Content:

Lecture No.	Content	Hours	Weightage in %
1.	• **Remaking Yourself** **1. Restructuring Yourself.** Students learn how self-improvement enables them to secure a bright future with 6 powerful thought process that can develop their IQ, PQ, EQ, and SQ. **2. Power of Habit.** Study of how habits work with practical techniques that can be used to develop good habits in their life. **3. Being addiction-free.** Students will explore the detrimental effects of addictions on one's health, personal & family's life. They will learn how to being addiction free. **4. Impact of company.** Students will understand the type of company we keep has a crucial role in determining who we are & who we will become, they will develop the ability to create a appositive environment around them.	12	40
2.	• **Learning from Legends** **1. Tendulkar and Ratan Tata.** Students will learn the lessons from the inspirational lives of India's legends through relatable case studies.	03	10

3.	• **From House to Home** **1. Bonding the Family** Students will understand the importance of strong family relationships, how to overcome generation gap & connect with their family more.	03	10
4.	• **Facing Failures** **1. Welcoming Challenges** Through the study of successful figures this lecture enables students to face difficulties through a positive perspective. **2. Significance of Failures** Failure is a student's daily source of fear, negativity & depression, they will be given the constructive skills to understand failure as formative learning experiences.	6	20
5.	• **An Ideal Citizen** **1. An Ideal Citizen-1** Students will learn to become value-based citizens, develop good values in their lives. They start by exploring the values of responsibility & integrity. **2. An Ideal Citizen-2** Students will learn that by developing the values of loyalty, sincerity & punctuality they become indispensable & can leave a strong impression.	6	20

Text Book:

Title	Author(s)	Publication
IPDC Workbook	IPDC Team	BAPS Vidyapith

Course Evaluation:
Theory:
1. Quizzes and MCQ examinations to evaluate knowledge and comprehension.
2. Group discussions and case studies.
3. Presentations and viva.

Course Outcome(s):

CLSC 2010	UNIVERSAL HUMAN VALUES
CO1	To provide students with a holistic education – focused on increasing their intelligence quotient, physical quotient, emotional quotient, and spiritual quotient
CO2	To provide students with hard and soft skills, making them more marketable when entering the workforce
CO3	To educate students on their social responsibilities as citizens of India
CO4	To provide students with a value-based education that will enable them to be successful in their family, professional, and social relationships.
CO5	To teach self-analysis and self-improvement exercises to enhance the potential of the participants.

Level of Bloom's Revised Bloom's Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

Module No	Content	RBT Level
1	Remaking Yourself	1,2,3,5,6
2	Learning from Legends	1,2,3,4,6
3	From House To Home	1,2,3,6
4	Facing Failures	1,2,3,6
5	An Ideal Citizen	1,2,3,4,5,6

SEMESTER 4

P P Savani University

School of Engineering

Institute of Diploma Studies

Department of Computer Engineering

Course Code: IDCE2030

Course Name: Operating System

Prerequisite Course (s): --

Teaching & Examination Scheme:

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
03	02	00	04	40	60	20	30	00	00	150

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:

To help learners to

- understand the services of an operating system provides to its users and system itself.
- apply various CPU scheduling algorithms and recognize the classic synchronization problems.
- compare methods for handling deadlocks and apply various memory management techniques. describe file systems.

Course Content:

Section I			
Module No.	Content	Hours	Weightage in %
1.	**Introduction to Operating System** What operating systems do? Computer System architecture, Operating System structure, Operating System operations, Process management, Memory management, Storage management, Protection and security, Distributed system, Special-purpose systems, Computing environments, Open-source Operating Systems	06	15
2.	**Process Management** Process concept, Process scheduling, Operations on processes, Inter-process communication, Process Scheduling: Basic concepts, Scheduling criteria, Scheduling algorithms.	10	20
3.	**Synchronization & Deadlocks** Background, The critical section management and semaphores (Concepts only) , System model, Deadlock characterization, Methods for handling deadlocks, Deadlock prevention, Deadlock avoidance, Deadlock detection, Recovery from deadlock.	06	15
Section II			
1.	**Memory Management Strategies** Background, Swapping, Contiguous memory allocation, Paging, Structure of page table, Segmentation	08	20

2.	**Virtual Memory Management** Background, Demand paging, Copy-on-write, Page Replacement, Allocation of frames.	07	15
3.	**File System** File concept, Access methods, Directory and disk structure, File system mounting, File sharing, Protection	08	15

List of Practical(s):

Sr. No	Name of Practical	Hours
1.	Install & test different types of Operating System & compare its features	02
2.	Compare various process scheduling algorithm	02
3.	Test and run basic unix commands.	02
4.	Test commands related with File editing with Vi, Vim, gedit, gcc.	02
5.	Test and run Advanced unix commands	02
6.	Create a shell script to print ”Hello”.	02
7.	Create a Shell script to read and display content of a file.	02
8.	Create a Shell script to read from command line.	02
9.	Create a Shell script to append content of one file to another	02
10.	Create a Shell script to accept a string in lower case letters from a user, & convert to upper case letters.	02
11.	Create a Shell script to find numbers of characters, words & lines of a given input file	02
12.	Create a Script to reverse a string and display it.	02
13.	Create a Script to check a string is palindrome.	02
14.	Create a Shell script to add two numbers.	02
15.	Create a shell script to reverse the digits of a given 5-digit number. (for eg. , if the no. is 57429 then answer is 92475).	02

Reference Book(s):

Title	Author/s	Publication
Operating System Principles(Chapters-1, 3, 5, 6, 7, 8, 9, 10 and 11)	Abraham Silberschatz, Peter Baer Galvin, Greg Gagne	8th edition, Wiley-India.
Operating Systems, I	Chandra Mohan	PHI, 2013

Web material link:

- http://www.tutorialspoint.com/operating_system/https://nptel.ac.in/courses/106102064/
- http://courses.cs.vt.edu/~csonline/OS/Lessons/index.html
- http://www.nptel.ac.in/

Course Evaluation:

Theory:

- Continuous Evaluation consists of two tests each of 30 marks and 1 hour of duration, which willbe converted to 30 marks.
- Faculty evaluation consists of 10 marks as per the guidelines provided by the course coordinator.
- End Semester Examination consists of 60 marks

Practical:

- Continuous Evaluation consists of performance of practical which will be evaluated out of 10 marks for each practical and average of the same will be converted to 10 marks.
- Internal viva consists of 10 marks.
- Practical performance/quiz/drawing/test consists of 15 marks during End Semester Exam.
- Viva/ Oral performance consists of 15 marks during End Semester Exam.

Course Outcome(s):

After completion of the course, the student will be able to

- understanding advanced concepts in operating systems.
- understand security issues in operating systems.
- learn principles of Distributed and multiprocessor operating systems

Course Outcome(s):

After the completion of the course, the following course outcomes will be able to:

IDCE2030	OPERATING SYSTEM
CO 1	Summarize the basic concepts in operating systems like kernel, shell, types and views of operating system.
CO 2	Categorize the operating system's resource management and memory management techniques.
CO 3	Differentiate between multiprocessing, multiprogramming and multitasking.
CO 4	Describe the various cpu scheduling algorithms.
CO 5	Apply Unix/Linux operating system commands and execute various shell scripts.

Level of Bloom's Revised Bloom's Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

Module No	Content	RBT Level
1	Introduction to Operating System	1, 2
2	Process Management	2, 3, 4, 5
3	Synchronization & Deadlocks	2, 3, 4, 5, 6
4	Memory Management Strategies	2, 3, 4, 6
5	Virtual Memory Management	2, 3, 5
6	File System	1, 2, 3, 5, 6

P P Savani University
School of Engineering
Institute of Diploma Studies

Department of Computer Engineering

Course Code: IDCE2040
Course Name: Network Essentials
Prerequisite Course (s): --

Teaching & Examination Scheme:

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
03	02	00	04	40	60	20	30	00	00	150

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:
To help learners to

- understand networking topologies.
- understand LANs, WANs and the Internet.
- understand network protocols
- understand TCP/IP

Course Content:

Section I			
Module No.	Content	Hours	Weightage in %
1.	**Overview of Networking** Introduction to networks and networking, LAN, VLAN, CAN, MAN, WAN, Internet and Intranet etc. Uses and benefits of Network, Server-client based network, peer to peer networks.	07	14
2.	**Network Hardware and Components** Concept of Server, client, node, segment, backbone, host etc. Analog and Digital transmission, Network Interface Card, Crimping tools and Color standards for Straight crimping and Cross crimping Functions of NIC, Repeaters, Hub, Switches, Routers, Bridges, Router etc.	08	18
3.	**Transmission Media and Topologies** Media types: STP cable, UTP cable, Coaxial cable, Fiber cable, Base band and Broadband transmission, Cables and Connectors, Physical and logical topologies, Bus, Star, Ring and Mesh topologies	08	18
Section II			

1.	**Protocols and Services** OSI and TCP/IP model, HTTP, FTP and other Different types of protocols, OSI Model, Media Access Method, DNS services, DHCP services, WINS services and RAS services, Web services, Proxy Services etc.	08	15
2.	**TCP/IP and Sub-netting** Introduction about TCP/IP and Sub-nettings, configuring IP address and sub nettings with different Routers and Network, TCP/IP Errors and Solutions	08	20
3.	**Introduction to Wireless Networks.** Introduction to wireless LAN IEEE 802.11, WiMax and Li-Fi, Introduction to Bluetooth - architecture, application, Comparison between Bluetooth and WiFi	07	15

List of Practical:

Sr. No	Name of Practical	Hours
1.	Cable Crimping using Different Color Codes (Straight and Cross Cable)	04
2.	Installation and configuring Peer to Peer and Server-Client Network	04
3.	Implementation on various Topologies in Cisco Packet Tracer	08
4.	Installation and Configuring FTP, HTTP Services	04
5.	Installation and Configuring DNS & DHCP Services	04
6.	Network Troubleshooting	06

Reference Book(s):

Title	Author/s	Publication
Networking Complete	Thareja, Reema	BPB Publication
Computer Networking	Andrew S. Tanenbawan	By PHI

Web material link:

- https://www.ibm.com/in-en/cloud/learn/networking-a-complete-guide
- https://www.cisco.com/c/dam/global/fi_fi/assets/docs/SMB_University_120307_Networking_Fundamentals.pdf

Course Evaluation:

Theory:

- Continuous Evaluation consists of two tests each of 30 marks and 1 hour of duration, which will be converted to 30 marks.
- Faculty evaluation consists of 10 marks as per the guidelines provided by the course coordinator.
- End Semester Examination consists of 60 marks

Practical:

- Continuous Evaluation consists of performance of practical which will be evaluated out of 10 marksfor each practical and average of the same will be converted to 10 marks.
- Internal viva consists of 10 marks.
- Practical performance/quiz/drawing/test consists of 15 marks during End Semester Exam.
- Viva/ Oral performance consists of 15 marks during End Semester Exam.

Course Outcome(s):

After the completion of the course, the following course outcomes will be able to:

IDCE2040	**NETWORK ESSENTIALS**
CO 1	Represent the architecture of a network and how the various components work together to achieve data communications.
CO 2	Explain the role and function of the layers that form part of a specified protocol stack such as tcp/ip and how these layers work together to support applications such as the web etc.
CO 3	Construct a simple simulated network using pcs, switches and routers and perform basic configuration, verification and troubleshooting.
CO 4	Distinguish the different types of networks based on the topologies.

Level of Bloom's Revised Bloom's Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

Module No	**Content**	**RBT Level**
1	Overview of Networking	1, 2
2	Network Hardware and Components	2, 3, 4, 5
3	Transmission Media and Topologies	2, 3, 4
4	Protocols and Services	2, 3, 4
5	TCP/IP and Sub-netting	2, 3, 5
6	Introduction to Wireless Networks	1, 2, 4

P P Savani University

School of Engineering

Institute of Diploma Studies

Department of Information Technology

Course Code: IDIT2031

Course Name: Web Technology

Prerequisite Course (s): --

Teaching & Examination Scheme:

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
00	04	00	02	00	00	100	00	00	00	100

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:

To help learners to

- develop interactive web based application using PHP and MySQL

List of Practical(s):

Sr. No	Name of Practical	Hours
1.	Introduction to PHP. Installation of WAMP/XAMPP Server.	02
2.	Write a PHP script to display Welcome message.	02
3.	Write a PHP script to demonstrate arithmetic operators, comparison operator, and logical operator.	02
4.	Write PHP Script to print Fibonacci series.	02
5.	Write PHP Script to generate result and display grade.	02
6.	Write PHP Script to find maximum number out of three given numbers.	02
7.	Write PHP Script for addition of two 2x2 matrices.	02
8.	Write PHP script to demonstrate Variable function.	02
9.	Write PHP script to obtain 5! Using function	02
10.	Write PHP script to demonstrate string function.	02
11.	Write PHP script to demonstrate Date functions	02
12.	Write PHP script to demonstrate Math functions	02
13.	Write PHP script to demonstrate Array functions.	02
14.	Write PHP script to demonstrate File functions	02
15.	Create student registration form using text box, check box, radio button, select, submit button. And display user inserted value in new PHP page.	02
16.	Create Website Registration Form using text box, check box, radio button, select, submit button. And display user inserted value in new PHP page.	02
17.	Write two different PHP script to demonstrate passing variables through a URL	02
18.	Write two different PHP script to demonstrate passing variables with sessions.	02
19.	Write PHP script to demonstrate passing variables with cookies	02
20.	Write a program to keep track of how many times a visitor has loaded the page	02

21.	Write an example of Error-handling using exceptions	02
22.	Write a PHP script to connect MySQL server from your website.	02
23.	Write a program to read customer information like cust_no, cust_name, Item_purchase, and mob_no, from customer table and display all these information in table format on output screen	02
24.	Write a program to edit name of customer to "Bob" with cust_no =1, and to delete record with cust_no=3.	02
25.	Write a program to read employee information like emp_no, emp_name, designation and salary from EMP table and display all this information using table format.	02
26.	Create a dynamic web site using PHP and MySQL	10

Reference Book(s):

Title	Author/s	Publication
Beginning PHP and MySQL, 4th Edition	W. Jason Gilmore	Apress, 2010
PHP: The Complete Reference	Steven Holzner	McGraw-Hill, 2008

Web material link:

Software: WAMP server / XAMPP server, 'C' Panel, Text Editor

- http://www.codecademy.com/tracks/web
- http://www.codecademy.com/tracks/php
- http://www.w3schools.com/PHP
- http://www.tutorialpoint.com
- http://www.homeandlearn.co.uk

Course Evaluation:

Practical:

- Continuous Evaluation consists of performance of practical which will be evaluated out of 10 marks for each practical and average of the same will be converted to 30 marks.
- Practical performance/quiz/drawing/test consists of 30 marks.
- Small Project(Website) developed consists of 40 marks

Course Outcome(s):

After completion of the course, the student will be able to

- design and develop a Web site using form controls for presenting web based content.
- debug the Programmes by applying concepts and error handling techniques of PHP.

- create dynamic Website/ Web based Applications, using PHP, MySQL database

Course Outcome(s):

After the completion of the course, the following course outcomes will be able to:

IDIT2031	WEB TECHNOLOGY
CO 1	Analyze given assignment to select sustainable web development and design methodology.
CO 2	Design and develop the programs by applying concepts and error handling techniques of php.
CO 3	Create dynamic website/ web based applications, using php, mysql database
CO 4	Construct modern interactive web applications as per industry standards.

Level of Bloom's Revised Bloom's Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

Module No	Content	RBT Level
1	Introduction to PHP	2
2	PHP Syntax	1, 2
3	Operators in PHP	1, 2, 4
4	Arrays and Matrices in PHP	1,2,4
5	Functions in PHP	1,2,3,5
6	Cookies and Sessions	2,5
7	Database Connectivity	2,6

P P Savani University
School of Engineering
Institute of Diploma Studies

Department of Information Technology

Course Code: IDIT2040
Course Name: Mobile Application Development
Prerequisite Course (s): --IDIT2010

Teaching & Examination Scheme:

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
03	04	00	05	40	60	40	60	00	00	200

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:
To help learners to

- understand life cycle of an application/activity.
- learn design of responsive mobile applications.
- develop mobile application using open source technologies.

Course Content:

Section I			
Module No.	Content	Hours	Weightage in %
1.	**Introduction of Android** Android Operating System, History of Mobile Software Development, Open Handset Alliance (OHA), The Android Platform, Installation, Android SDK, Android Manifest file	06	20
2.	**Exploring User Interface Screen Elements** Introducing Android Views, Layouts, TextView, Buttons, Check Boxes, Radio Groups, Indicators, SeekBar, Context Menus, User Events, Styles and Themes, Dates and Times, Toolbar	08	15
3.	**Designing User Interfaces with Layouts** Creating User Interfaces in Android, View versus ViewGroup, Layout Classes such as Fame Layout, Linear Layout, Relative Layout, Table Layout, Multiple Layouts on a Screen, Data-Driven Containers, Organizing Screens with Tabs, Scrolling Support.	08	15
Section II			

1.	**Drawing and Working with Animation** Working with Canvases and Paints, Working with Text, Working with Bitmaps, Working with Shapes, Working with Animation.	08	15
2.	**Android Storage APIs** Working with Application Preferences such as Creating Private and Shared Preferences, Adding, Updating, and Deleting Preferences. Working with Files and Directories, Storing SQLite Database such as Creating an SQLite Database, Creating, Updating, and Deleting Database Records, Closing and Deleting a SQLite Database.	08	20
3.	**Different APIs** Telephony APIs, Google Speech APIs, Android Location APIs, Android Google Maps	07	15

List of Practical:

Sr.No	Name of Practical	Hours
1.	Install the Android Studio and Setup the Development Environment	04
2.	Create an Application to demonstrate activity (Application Life Cycle)	04
3.	Create an Application to demonstrate different types of layouts	04
4.	Create an Application to implement simple calculator using text view, edit view, option button and button	04
5.	Create an Application to develop app having multiple activities and user should be able switch between the activities by using intents	04
6.	Create an Application to demonstrate list view	04
7.	Create an Application to demonstrate photo gallery	04
8.	Create an Application to demonstrate Date picker and time picker	04
9.	Develop an simple application with context menu and option menu	04
10.	Create an Application to demonstrate the functionality of Shared Preferences.	04
11.	Develop a sample Android application having navigation items similar to Gmail Application.	04
12.	Create an Application to demonstrate a service	04
13.	Create an Application to demonstrate the application of intent class	04
14.	Create an Application to create a text file in a external memory	04
15.	Create an Application to store and fetch data from SQLite database.	04

Reference Book(s):

Title	Author/s	Publication
Beginning Android 4 Application Development	Wei-Meng Lee	Wiley India
Head First Android Development: A Brain-Friendly Guide	David Griffiths and DawnGriffiths	O`Relilly

Web material link:

- http://swayam.gov.in/
- http://spoken-tutorial.org/

- https://developer.android.com/

Course Evaluation:

Theory:

- Continuous Evaluation consists of two tests each of 30 marks and 1 hour of duration, whichwill be converted to 30 marks.
- Faculty evaluation consists of 10 marks as per the guidelines provided by the coursecoordinator.
- End Semester Examination consists of 60 marks

Practical:

- Continuous Evaluation consists of performance of practical which will be evaluated out of 20marks for each practical and average of the same will be converted to 20 marks.
- Internal viva consists of 20 marks.
- Practical performance/quiz/drawing/test consists of 30 marks during End Semester Exam.
- Viva/ Oral performance consists of 30 marks during End Semester Exam.

Course Outcome(s):

After completion of the course, the student will be able to

- describe object oriented concepts
- perform programs related to basic concepts of Java.
- apply methods of string class to manipulate string.

Course Outcome(s):

After the completion of the course, the following course outcomes will be able to:

IDIT2040	MOBILE APPLICATION DEVELOPMENT
CO 1	Describe the different mobile technologies and mobile development platform.
CO 2	Identify how mobile application works, its lifecycle and resources.
CO 3	Assess communication technologies into android applications.
CO 4	Design and implement application with user interface, use of APIs for data storage.

Level of Bloom's Revised Bloom's Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

Module No	Content	RBT Level
1	Introduction of Android	1, 2
2	Exploring User Interface Screen Elements	2, 3, 4, 5, 6
3	Designing User Interfaces with Layouts	2, 3, 4, 6
4	Drawing and Working with Animation	2, 3, 4, 6
5	Android Storage APIs	2, 3, 5, 6
6	Different APIs	3, 4, 5, 6

P P Savani University
School of Engineering
Institute of Diploma Studies

Department of Information Technology

Course Code: IDCE2050
Course Name: Computer Architecture
Prerequisite Course(s): Nil

Teaching & Examination Scheme:

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
03	02	00	04	40	60	20	30	00	00	150

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:
To help learners to
- impart basic concepts of computer architecture and organization.
- explain key skills of constructing cost-effective computer systems.
- help students in understanding various memory devices

Course Content:

Section I			
Module No.	Content	Hours	Weigh tage in %
1.	**Computer Data Representation** Data Representation: decimal, binary, octal and hexadecimal numbers, conversion from one number system to another, fixed point representation, signed magnitude, 1's complement and 2's complement representation, addition and subtraction of binary numbers using different representation	08	20
2.	**Computer Architecture & Register-Transfer and Micro-operations** Overview of computers and basics of Digital Electronics-Flip Flops, Registers, Shift registers, Register - Transfer-Language, Register Transfer, Bus Transfer and Memory Transfer, Arithmetic Micro-Operations Addition, Subtraction, Complements, Negation, Increment and Decrement, Logic micro operations, Shift Micro operation.	08	15
3.	**Basic Computer Organization** Instruction codes, Computer registers, Computer instructions, Timing and Control, Instruction cycle, Memory-Reference Instructions, Input-output and interrupt	07	15
Section II			

1.	**Memory Organization** Memory Hierarchy, Associative Memory, Cache Memory, Virtual Memory	08	20
2.	**Input-Output Organization** Input-Output Interface, Asynchronous Data Transfer, Modes of Data Transfer, DMA Transfer	07	15
3.	**Microprocessor and Parallel Processing** Block diagram of 8086, Registers and applications of microprocessor, Parallel Processing – Flynn's classification, Pipelining.	07	15

List of Practical(s):

Sr. No	Name of Practical	Hours
1.	Number System Programs. Conversion from decimal to binary and vice versa.	08
2.	To design the circuit of half adder and full adder	02
3.	To design the circuit of half subtractor and full subtractor	02
4.	To design a 4*1 and 8*1 Multiplexer.	04
5.	To design a 4 bit combinational shifter.	02
6.	To design a BCD adder	02
7.	To design 2:4 Decoder	02
8.	To design an ALU.	04
9.	To design a Control Unit.	04

Reference Book(s):

Title	Author/s	Publication
Computer System Architecture	M. Morris Mano	Pearson
Computer Architecture and Organization	Ghoshal, Subrata	Pearson
Computer Architecture & Organization	M. Murdocca & V. Heuring	WILEY

Web material link:

- https://nptel.ac.in/courses/106/105/106105163/
- http://www.intel.com/pressroom/kits/quickreffam.htm
- web.stanford.edu/class/ee282/

Course Evaluation:

Theory:

- Continuous Evaluation consists of two tests each of 30 marks and 1 hour of duration, which willbe converted to 30 marks.
- Faculty evaluation consists of 10 marks as per the guidelines provided by the course coordinator.
- End Semester Examination consists of 60 marks

Practical:

- Continuous Evaluation consists of performance of practical which will be evaluated out of 10 marks for each practical and average of the same will be converted to 10 marks.
- Internal viva consists of 10 marks.
- Practical performance/quiz/drawing/test consists of 15 marks during final submission.

- External viva consists of 15 marks.

Course Outcome(s):

After completion of the course, the student will be able to

- identify various components of computer and their interconnection.
- identify basic components and design of the CPU: the ALU and control unit.
- compare and select various Memory devices as per requirement.

Course Outcome(s):

After the completion of the course, the following course outcomes will be able to:

IDCE2050	COMPUTER ARCHITECTURE
CO 1	Define different number systems, binary addition and subtraction, 2's complement representation and operations with this representation.
CO 2	Demonstrate and understand the internal components and functions of a basic computer which include: i/o, memory, alu and control unit.
CO 3	Compare and select various memory devices as per requirement.
CO 4	Implement elementary assembly language programs.
CO 5	Design, evaluate and create simple logic circuits using gates and Boolean algebra.

Level of Bloom's Revised Bloom's Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

Module No	Content	RBT Level
1	Computer Data Representation	1, 2
2	Computer Architecture & Register- Transfer and Micro-operations	1, 2, 3
3	Basic Computer Organization	1, 2, 3
4	Memory Organization	2, 3, 4
5	Input-Output Organization	2, 3, 4
6	Microprocessor and Parallel Processing	2, 3, 4

P P Savani University
School of Engineering
Institute of Diploma Studies

Department of Computer Engineering

Course Code: IDCE2910
Course Name: Project
Prerequisite Course(s): Nil

Teaching & Examination Scheme:

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
04			04	0	0	100	00	0	0	100

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:
To help learners to

- identify, analyze and articulate projects with a comprehensive and systematic approach.
- develop creative thinking.
- perform in a team.

Course Content:

Module No.	Content	Hours	Weightage in %
1.	**Selection of Title** Select a topic of interest to work upon which can be from any domain. After selecting the topic and proposing the title, get approval from the concerned faculty	08	10
2.	**Literature Review** Study in detail about the topic chosen.	12	10
3.	**Project Proposal** Prepare the proposal on the aspect of the selected area to work upon.	12	20
4.	**Implementation** Implementation of the proposal in any of the programming languages	16	40
5.	**Report Writing** The report must be prepared as per suggested guidelines consisting of Preamble, Objectives, Scope, Introduction, Conclusions, Recommendations and Annexure.	10	10
6.	**Presentation & Question-Answer** At the end of the semester, the student/group of students shall give a presentation of their work followed by a viva-voce examination.	02	10

Course Evaluation:

Sr. No	Evaluation Criteria	Marks
1.	Selection of the topic (Within first 14 Days of commencement of semester)	10
2.	Initial Presentation of the topic	10
3.	An actual work carried out.	10
4.	Report writing as per guidelines.	10
5.	Project and report submission	10
6.	Presentation & Question-Answer session.	50
	Total	**100**

Course Outcome(s):

After completion of the course, the students will be able to

IDIT2910	PROJECT
CO 1	Support the theoretical learning with practice and integrate knowledge for engineering applications.
CO 2	Adapt to real time industry exposure and experience.
CO 3	Solve challenging projects for commercial, societal and environment benefit.
CO 4	Explain the importance of planning, documentation, punctuality and work ethics.
CO 5	Document the work which is carried out in proper format with industry standards.

Level of Bloom's Revised Bloom's Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

Module No	Content	RBT Level
1	Selection of Title	2
2	Literature Review	1, 2
3	Project Proposal	2, 3, 4
4	Implementation	2, 3, 4
5	Report Writing	2, 3, 5, 6
6	Presentation & Question-Answer	1, 2, 3, 4, 5, 6

THIRD YEAR
DIPLOMA IN COMPUTER ENGINEERING

	P P SAVANI UNIVERSITY																	
	SCHOOL OF ENGINEERING																	
	INSTITUTE OF DIPLOMA STUDIES																	
	TEACHING & EXAMINATION SCHEME FOR DIPLOMA ENGINEERING PROGRAMME AY:2024-25(BATCH:2024)																	
Sem.	**Course Code**	**Course Title**	**Course Category**	**Offered By**	**Teaching Scheme**					**Examination Scheme**								
					Contact Hours				**Credit**	**Theory**		**Practical**		**Tutorial**		**Total**	
					Theory	**Practical**	**Tutorial**	**Total**		**CE**	**ESE**	**CE**	**ESE**	**CE**	**ESE**		
5	IDCE3050	Software Engineering	Major/Core	CE	2	0	1	**3**	3	40	60	0	0	50	0	**150**	
	IDCE3011	Computer Networks	Major/Core	IT	3	2	0	**5**	4	40	60	20	30	0	0	**150**	
	IDIT3020	Programming with Python	Major/Core	IT	3	4	0	**7**	5	40	60	40	60	0	0	**200**	
	IDCE3020	Fundamentals of Linux	Major/Core	CE	0	4	0	**4**	2	0	0	100	0	0	0	**100**	
		Elective	Minor		2	2	0	**4**	3	40	60	20	30	0	0	**150**	
	IDCE3910	Summer Training	Minor	CE	4			**0**	4	0	0	100	0	0	0	**100**	
		Language Training Elective Course	AEC	CFLS	3	0	0	**3**	3	100	0	0	0	0	0	**100**	
		Life Skill Elective Course	VAC	CLSC	2	0	0	**2**	2	100	0	0	0	0	0	**100**	
							Total	**28**	**26**							**1050**	
6	IDIT3070	System Administration and IT Infrastructure	Major/Core	IT	2	2	0	**4**	3	40	60	20	30	0	0	**150**	
	IDCE3040	Introduction to Computer Security	Major/Core	CE	3	2	0	**5**	4	40	60	20	30	0	0	**150**	
	TNPC3010	Corporate Grooming & Etiquette	SEC	TNPC	3	0	0	**3**	3	100	0	0	0	0	0	**100**	
	IDCE3750	MOOC Course	SEC	CE	3	0	0	**3**	3	100	0	0	0	0	0	**100**	
	IDCE3920	Project/Training	RP/OJT	CE	11			**11**	11	0	0	200	300	0	0	**500**	
							Total	**26**	**24**							**1000**	

Electives (Sem-5)	IDIT3510	.NET Technology		IT	2	2	0	4	3	40	60	20	30	0	0	**150**
	IDIT3520	Advanced Java Programming		IT	2	2	0	4	3	40	60	20	30	0	0	**150**
	IDCE3510	Fundamentals of IoT with Python		CE	2	2	0	4	3	40	60	20	30	0	0	**150**

SEMESTER 5

P P Savani University
School of Engineering
Institute of Diploma Studies

Department of Computer Engineering

Course Code: IDCE3050
Course Name: Software Engineering
Prerequisite Course(s): Nil

Teaching & Examination Scheme:

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
02	00	01	03	40	60	00	00	50	00	150

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the course:
To help learners to

- study the pioneer of Software Development Life Cycle, Development models and AgileSoftware Development.
- study fundamental concepts in software testing, including software testing objectives, process, criteria, strategies, and methods.
- discuss various software testing issues and solutions in software unit test; integration,regression, and system testing.
- learn the process of improving the quality of software work products.
- gain the techniques and skills on how to use modern software testing tools to supportsoftware testing projects.
- expose Software Process Improvement and Reengineering.

Course Content:

SECTION-I			
Module No.	Content	Hours	Weightage in %
1.	**Introduction to Software Engineering** System Concepts: Types of systems: (open, closed, static and dynamic systems). Introduction, Programs v/s Software Products Emergence of Software Engineering- Early Computer Programming, High-level Language Programming, Control flow-based Design, Data Structure Oriented Design, Object Oriented Design	04	15
2.	**Software Life Cycle Models** Requirement of Life Cycle Model, Classic Waterfall Model, Prototyping Model, Evolutionary Model, Spiral Model, Introduction to agile methodology, Comparison of different Life Cycle Models	06	20
3.	**Software Planning** Responsibilities of Software Project Manager - Metrics for Project Size Estimation- LOC (Lines of Code), Function	05	15

	Point Metric - Project estimation Techniques- Using COCOMO Model.		
SECTION II			
Module No.	Content	Hours	Weightage in %
1.	**Requirement Analysis and Specification** Requirement gathering and Analysis, Software Requirement Specifications (SRS), Characteristics of good SRS	03	10
2.	**Software Design and Implementation** Characteristics and features of good Software Design Cohesion and Coupling, Software design Approaches- Function Oriented Design (Data flow diagrams, Data dictionary, Decision Trees and tables), Object Oriented Design, Structured Coding Techniques, Coding Styles, and documentation	06	25
3.	**Software Testing** Concept of Testing, Testing type cycle (V-Model), Verification v/s Validations, Unit Testing, Black Box Testing, White Box Testing, Integration testing, System testing, Configuration management, Overview of test cases.	06	15

List of Tutorials:

Sr. No.	List of Tutorial	Hours
1.	Develop a SRS on a given topic/project/problem.	2
2.	Develop DFD Model (level 0 and level 1 DFD) of the problem.	4
3.	Develop sequence diagram.	4
4.	Develop class diagrams.	4
5.	Use testing tools such as J-meter, Canoo Web Test.	4
6.	Use a project management tool such as Microsoft project or Gantt project etc (Team week, Target process, Gantt project)	4
7.	Write test cases for any known application.	2
8.	Take any system and study its system specification and report the various bugs.	6

Text Book:

Title	Author(s)	Publication
Fundamentals of Software Engineering	Rajib Mall	PHI Learning
Software engineering: A Practitioner's Approach	Roger Pressman	McGraw Hill Education

Reference Book:

Title	Author(s)	Publication
Software Engineering – An Engineering Approach	James F.Peters & Witold Pedrycz	Wiley
Software Engineering – Principles and Practice	Waman Jawadekar	McGraw Hill Education

Web Material Link(s):

- https://nptel.ac.in/courses/106101061/

Course Evaluation:

Theory:

- Continuous Evaluation consists of two tests, each of 30 marks and 1 hour of duration and average of the same will be converted to 30 marks.
- Faculty evaluation consists of 10 marks as per the guidelines provided by the Course Coordinator.
- End Semester Examination consists of 60 marks.

Tutorial:

- Continuous evaluation consists of performance of tutorial which will be evaluated out of 10 Marks for each tutorial and average of the same will be converted to 10 marks.
- Internal Viva consists of 10 marks.
- Practical performance/quiz/test consists of 15 marks during End Semester Exam.
- Viva/oral performance consists of 15 marks during End Semester Exam.

Course Outcome(s):

After the completion of the course, the following course outcomes will be able to:

IDCE3010	**SOFTWARE ENGINEERING**
CO 1	Understand fundamentals of software development process.
CO 2	Ability to recognize user requirements and develop SRS (software requirement specification) for effective software design.
CO 3	Analyze testing methods to ensure software quality as per different quality standards.
CO 4	Learn to apply knowledge of modern tools for efficient software project management.
CO 5	Identify various process models available for software engineering activities of software engineering like software requirements, software design, software construction, software management, and software quality etc.

Level of Bloom's Revised Bloom's Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

Module No	**Content**	**RBT Level**
1	Introduction to Software Engineering	1, 2, 3
2	Software Life Cycle Models	1, 2, 3, 4
3	Software Planning	1, 2, 3, 4
4	Requirement Analysis and Specification	1, 2, 3
5	Software Design and Implementation	1, 2, 3, 4
6	Software Testing	1, 2, 3, 4

P P Savani University
School of Engineering
Institute of Diploma Studies

Department of Computer Engineering

Course Code: IDCE3011
Course Name: Computer Networks
Prerequisite Course(s): Nil

Teaching & Examination Scheme

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
3	2	0	4	40	60	20	30	0	0	150

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the course:

To help students to

- understand the concept of data communication.
- understand the concepts and layers of OSI and TCP-IP reference models.
- get familiar with different protocols and network components.

Course Content:

Module No.	Content	Hours	Weightage in %
1.	**Introduction:** Overview of network essentials, Revised TCP/IP, Protocols and Standards.	4	10
2.	**Physical Layer** Data and transmission techniques, Multiplexing, Transmission media, Asynchronous Communication, Wirelesstransmission.	7	15
3.	**Data Link Layer** Layer design issues, services provided to network layers, Framing, Error control, and Flow control, Data link control and protocols – Simplex protocol, Sliding window protocol.	7	15
4.	**Medium Access Sub Layer** Channel Allocations, Multiple Access protocols- ALOHA, CSMA, CSMA/CD protocols, Collision-free protocols.	5	10
	SECTION II		
Module No.	Content	Hours	Weightage in %
1.	**Network Layer** A network Layer design issue, Routing algorithms, andprotocols, Congestion Control Algorithms, Internetworking, Addressing, N/W Layer Protocols and recent developments	8	20
2.	**Transport Layer**	6	15

	Transport services, Design issues, transport layer protocols, Congestion Control, QOS and its improvement.		
3.	**Application Layer** Client-Server Model, DNS, SMTP, FTP, HTTP, WWW, and recent development	8	15

List of Practical:

Sr. No.	List of Practical	Hours
1.	Implement Packet Generation having information of packet number (2-dig), Total no of packets (2 dig), & data itself in the packet.	08
2.	Implementation flow control algorithms, CRC, VRC, LRC	06
3.	Implement CSMA/CD between two machines	06
4.	Implement Token ring between 3 machines.	06
5.	Study of switches, Hubs, Routers, and gateway.	04

Text Book:

Title	Author(s)	Publication
Data Communication and Networking	Behrouz A. Forouzan	Tata McGraw Hill

Reference Books:

Title	Author(s)	Publication
Computer Networks	Andrew S Tanenbaum	PHI Learning
Data and Computer Communications	William Stallings	Prentice Hall
TCP/IP Illustrated Volume-I	Kevin R. Fall, W.Richard Stevens	Addition Wesley
Internetworking with TCP/IP Volume-I	Douglas E. Comer	PHI

Web Material Link(s):

- http://www.tutorialspoint.com/computer_fundamentals/computer_networking.html
- https://nptel.ac.in/courses/106105080/
- https://www.udemy.com/new-2016-networking-fundamentals-for-beginners/
- https://www.cisco.com/c/en_in/training-events/training-certifications/certifications.html

Course Evaluation:

Theory:

- Continuous Evaluation consists of two tests each of 30 marks and 1 Hour of duration, whichwill be converted to 30 marks.
- Faculty evaluation consists of 10 marks as per the guidelines provided by the coursecoordinator.
- End Semester Examination consists of 60 marks.

Practical:

- Continuous Evaluation consist of the performance of practical which will be evaluated out of10 marks for each practical and average of the same will be converted to 10 marks.
- Internal viva consists of 10 marks.
- Practical performance/quiz/test consists of 15 marks during End Semester Exam.
- Viva/oral performance consists of 15 marks during End Semester Exam.

Course Outcome(s):

After the completion of the course, the student will be able to

IDCE3011	COMPUTER NETWORKS
CO 1	Distinguish the working of network protocols, application and OSI reference model and TCP/IP reference model.
CO 2	Explain various service provided by computer network and its uses.
CO 3	Describe concept of network interface and performance issues in the networks.
CO 4	Evaluate network tools for implementing network protocols.

Level of Bloom's Revised Bloom's Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

Module No	Content	RBT Level
1	Introduction	2,4
2	Physical Layer	1,2,4
3	Data Link Layer	2,4
4	Medium Access SubLayer	1,2
5	Network Layer	2,3,6
6	Transport Layer	2,4
7	Application Layer	2,5

P P Savani University
School of Engineering
Institute of Diploma Studies

Department of Information Technology

Course Code: IDIT3020
Course Name: Programming with Python
Prerequisite Course(s): -

Teaching & Examination Scheme:

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
03	04	00	05	40	60	40	60	00	00	200

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:

To help learners to

- understand basics of object-oriented programming.
- identify appropriate approach to computational problems.
- develop logic building and problem-solving skills.

Course Content:

SECTION I			
Module No.	Content	Hours	Weightage in %
1.	**Introduction to Python** Brief History of Python, Python Versions, Installing Python, Environment Variables, Executing Python from the Command Line, IDLE, Editing Python Files, Python Documentation, Getting Help, Dynamic Types, Python Reserved Words, Naming Conventions	03	6
2.	**Decision Structures in Python** Conditional Blocks Using if, Else and Else If, Simple for Loops in Python, For Loop Using Ranges, String, List and Dictionaries Use of While Loops in Python, Loop Manipulation Using Pass, Continue, Break and Else.	04	5
3.	**Array and Strings in Python** Arrays, Basic Strings, Accessing Strings, BasicOperations, String Slicing, Testing, Searching and Manipulating Strings, Function and Methods	03	8
4.	**Collections** Introduction, Lists, Tuples, Sets, Dictionaries, Sorting Dictionaries, Copying Collections, Summary	06	8
5.	**Functions, Modules and Packages in Python** Introduction to Functions, defining a Function, CallingFunction, Types of Functions, Function Arguments,Anonymous Functions, Global and Local Variables,Importing Module, Math Module, Random Module,	07	13

	Introduction to Packages: Numpy, Pandas, Matplotlib.		
SECTION II			
Module No.	Content	Hours	Weightage in %
1.	**Python Object Oriented Programming** OOP Concept of Class, Object and Instances, Constructor, Class, Attributes, Methods, Using Properties to Control Attribute Access, and Destructors,Inheritance, Overlapping and Overloading Operators. Objects in Python: Creating Python Classes, Modules and Packages, Inheritance in Python, Polymorphism in Python.	08	19
2.	**Files in Python** Introduction to File Input and Output, Writing Data to a File, Reading Data From a File, Additional File Methods,Using Loops to Process Files, Processing Records.	07	15
3.	**Regular Expression in Python** RE Module, Basic Patterns, Regular Expression Syntax, Regular Expression Object, Match Object, Search Object, Findall method, Split method, Sub Method	03	07
4.	**Exception Handling in Python** Handling IO Exceptions, Working with Directories, Metadata, Errors, Run Time Errors, The Exception Model, Exception Hierarchy, Handling Multiple Exceptions, Throwing Mechanism, Caching Mechanism	04	09

List of Practical:

Sr. No.	Details of Practical	Hours
1.	Introduction to Python (Introduction to IDLE, different data types, InputOutput in Python, Operators, Operator precedence).	08
2.	Working with Strings.	08
3.	Implementation of Dictionaries, Sets, Tuples and Lists and its variousmethods in Python.	12
4.	Working with decision structures in Python	08
5.	Working with functions and modules in Python	04
6.	Working with Object-oriented paradigms in Python	08
7.	Implementation of file handling in Python.	04
8.	Working with RE module in Python.	04
9.	Exception handling in Python.	04

 # Use of different libraries will be covered in Practical Assignments.

Text Book(s):

Title	Author(s)	Publication
Python Programming: A modular Approach	Sheetal Taneja, Naveen Kumar	Pearson
Think Python: How to Think Like a Computer Scientist	Allen Downey	Green Tea Press

Reference Book(s):

Title	Author(s)	Publication
Python Cookbook	David Ascher, Alex Martelli Oreilly	O Reilly Media

Web Material Link(s):

- https://www.tutorialspoint.com/python/
- https://www.w3schools.com/python/

Course Evaluation:

Theory:

- Continuous Evaluation consists of two tests, each of 30 marks and 1 hour of duration andaverage of the same will be converted to 30 marks.
- Faculty evaluation consists of 10 marks as per the guidelines provided by the CourseCoordinator.
- End Semester Examination consists of 60 marks.

Practical:

- Continuous Evaluation Consist of Performance of Practical which should be evaluated out of 10 for each practical in the next turn and average of the same will be converted to 20 Marks.
- Internal Viva component of 20 Marks.
- Practical performance/quiz/drawing/test of 30 Marks during End Semester Exam.
- Viva/Oral performance of 30 Marks during End Semester Exam.

Course Outcome(s):

After the completion of the course, the student will be able to

IDIT3020	**PROGRAMMING WITH PYTHON**
CO 1	Interpret the fundamental python syntax, semantics and fluent in the use of python control flow statements.
CO 2	Determine the methods to create and manipulate python programs by utilizing the data structures like lists, dictionaries, tuples and sets.
CO 3	Articulate the object oriented programming concepts such as encapsulation, inheritance and polymorphism as used in python.
CO 4	Identify the commonly used operations involving file systems and regular expressions.

Level of Bloom's Revised Bloom's Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

Module No	**Content**	**RBT Level**
1	Introduction to Python	1, 2,4
2	Decision Structures in Python	1, 2, 3
3	Array and Strings in Python	1, 2, 3
4	Collections	2, 3, 4
5	Functions, Modules and Packages in Python	2, 3, 4
6	Python Object Oriented Programming	2, 3, 4
7	Files in Python	2,3,4
8	Regular Expression in Python	3,4,5
9	Exception Handling in Python	2,3

P P Savani University
School of Engineering
Institute of Diploma Studies

Department of Computer Engineering

Course Code: IDCE3020
Course Name: Fundamentals of Linux
Prerequisite Course (s): --

Teaching & Examination Scheme:

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
00	04	00	02	00	00	100	00	00	00	100

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:
To help learners to

- understand basic commands of Linux operating system.
- provide basic knowledge of file operations and its security.
- learn about shell script editors.
- learn about conditional and looping statements in shell script.

List of Practical(s):

Sr. No	List of Practicals	Hours
1.	a) Introduction to Linux Operating System. b) Explain the following basic commands: man, echo, printf, who, who am i, wc, exit, pwd, history, ls, clear, cal, date.	02
2.	a) Explain the following file management commands: cd, cd .., mkdir, rmdir, rm, cat, cp, mv. b) Explain wild-card characters: *, ?.	04
3.	Create the following directory hierarchy: Parent directory: College, Two sub directories of College: PPSU,SCET,CGPIT, Two sub directories of PPSU: Automobile, Civil Two sub directories of SCET: Computer, Electrical Two sub directories of CGPIT: Electronics, Mechanical. Now create file1 and file2 in Automobile directory, create file3 in Electrical directory and file4 in Mechanical directory. Perform the following task: Copy file2 in Electronics directory using absolute and relative path.	04
4.	Explain the following filters: grep, head, tail, cut, paste.	04
5.	a) Explain the following process utility commands: ps, kill. b) Explain basic disk utility commands: du, df.	04
6.	a) Introduction to shell script.	04
7.	b) Write a shell script to print Hello World.	04

8.	Write a shell script to read a command line argument and print its value.	04
9.	Write a shell script to list all the directory files in a directory.	04
10.	Write a shell script which copies the contents of file1 to file2 without using cp command.	04
11.	Write a script that finds area of a triangle for a specified base and height.	04
12.	Write a shell script that displays a list of menu to the user and the user selects a choice from the list and the shell executes accordingly. Menu: 1.List all the files 2.Print today's date 3.Print the users of the system	04
13.	Write a shell script to get total number of words and lines in given file.	08
14.	• Write a C program that makes a copy a file using standard I/O and system calls. • Write a client and server programs(using c)for interaction between server and client processes using Internet Domain sockets. • Write a program to implement the shared memory. • Write a client and server programs(using c)for interaction between server and client processes using Internet Domain sockets. • Write a C program that illustrates two processes communicating using shared memory.	08

Reference Book(s):

Title	Author/s	Publication
Unix Concepts and Applications	Das S.	McGraw Hill
The Design of UNIX Operating System	Bach M. J.	PHI publication
Linux Kernel Programming	Beck M., Et. Al.	Pearson publication

Web Material Link(s):

- https://ubuntu.com/tutorials/command-line-for-beginners#1-overview
- https://www.youtube.com/watch?v=NAfI0mi8ybg

Course Evaluation:

Practical

- Continuous Evaluation Consist of Performance of Practical which should be evaluated out of 10 for each practical in the next turn and average of the same will be converted to 40 Marks.
- Practical performance/quiz/test of 30 Marks during End Semester Exam.
- Viva/Oral performance of 30 Marks during End Semester Exam.

Course Outcome(s):

After the completion of the course, the following course outcomes will be able to:

IDCE3020	FUNDAMENTALS OF LINUX
CO 1	Demonstrate the basic knowledge of Linux commands and file handling utilities by using Linux shell environment
CO 2	Evaluate the concept of shell scripting programs by using an AWK and SED commands.
CO 3	Create the directory, how to change and remove the directory
CO 4	Analyze the process of how the parent and child relationships
CO 5	Define IPC mechanism

Level of Bloom's Revised Bloom's Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

Module No	Content	RBT Level
1	Linux OS	1, 2, 3,4,5,6

P P Savani University
School of Engineering
Institute of Diploma Studies

Department of Computer Engineering

Course Code: IDCE3910
Course Name: Summer Training
Prerequisite Course(s): -

Teaching & Examination Scheme:

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
04			01	00	00	100	00	00	00	100

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:
To help learners to

- have first-hand experience the real time situations in industrial scenario.
- get familiar with engineering applications in industrial spectrum.
- learn to adapt themselves in professional scenario.

Outline of the Course:

Sr. No	Content
1.	Selection of Companies
2.	Company Information collection
3.	Report Writing
4.	Presentation & Question-Answer

Course Evaluation:

Sr. No.	Evaluation criteria	Marks
1	Actual work carried & Report Submission	50
2	Final Presentation & Question-Answer session	50
	Grand Total:	**100**

Course Outcome(s):

After completion of the course, the students will be able to

IDCE3910	SUMMER TRAINING
CO 1	Study, analysis and describe about the surrounding industrial environment.
CO 2	Describe use of advanced tools and techniques industry.
CO 3	Interact with industrial personnel and follow engineering practices and discipline prescribed in industry.
CO 4	Develop awareness about general workplace behavior and build interpersonal and team skills.
CO 5	Prepare professional work reports and presentations.

Report Writing Guidelines

A. Report Format:

1. Title Page (to be provided by the respective supervisor)

The title page of the project shall give the following information in the order listed:

- Full title of the project as approved by the Mentor;
- The full name of the student/Group of students with enrollment number;
- The qualification for which the project is submitted;
- The name of the institution to which the project is submitted;
- The month and year of submission.

2. Project Certification Form
   [The form should be duly filled signed by the supervisors.]
3. Acknowledgements
   [All persons (e.g. supervisor, technician, friends, and relatives) and organization/authorities who/which have helped in the preparation of the report shall be acknowledged.]
4. Table of Contents/Index with page numbering
5. List of Tables, Figures, Schemes
6. Summary/abstract of the report.
7. Introduction/Objectives of the identified problem
8. Data Analysis and Finding of Solution
9. Application of the identified solution
10. Future Scope of enhancement of the Project and Conclusion
11. "Learning during Project Work", i.e. "Experience of Journey during Project Duration"
12. References(must)
13. Bibliography
14. Annexures (if any)

B. Guideline for Report Formatting:

- Use A4 size page with 1" margin all sides
- Header should include Project title and footer should contain page number and enrollment numbers
- Chapter Name should be of Cambria font, 20 points, Bold
- Main Heading should be of Cambria font, 14 points, Bold
- Sub Heading should be of Cambria font, 12 points, Bold
- Sub Heading of sub heading should be of Cambria font, 12 points, Bold, Italic
- Paragraph should be of Cambria font, 12 points, no margin at the start of the paragraph
- Line spacing for all content – 1.15, before - 0, after - 0
- No chapter number for references
- Before chapter 1, give page numbers in roman letter

P P Savani University
School of Engineering
Institute of Diploma Studies

Department of Information Technology

Course Code: IDIT3510
Course Name: .NET Technology
Prerequisite Course(s): NIL

Teaching & Examination Scheme:

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
02	02	00	03	40	60	20	30	00	00	150

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:
To help learners to
- understand the .NET framework and its applications.
- understand the basics of C#.
- understand ASP.NET web services and web service security.

Course Content:

Section – I			
Module No.	Content	Hours	Weightage in %
1.	**Introduction to .NET Framework** .NET Overview, NET framework, course mechanics, CLR, Assemblies (monolithic vs. component-based applications), Execution Model, Client-Side vs. Server-Side Programming.	05	16
2.	**Basics and Console Applications in C#** Name Spaces, Constructors, Destructors, Function Overloading, Inheritance, Operator Overloading, Modifier Properties, Indexers, Attributes, Reflection API, Console Applications, Generating Console Output, Processing Console Input.	05	16
3.	**C#.NET** Language Features and Creating .NET Projects, Namespaces Classes and Inheritance, Namespaces Classes and Inheritance, C, Exploring the Base Class Library, Debugging and Error Handling, Data Types, Exploring Assemblies and Namespaces, String Manipulation, Files and I/O, Collections.	05	18
Section II			
Module No.	Content	Hours	Weightage in %
1.	**Windows Forms and Controls in details** The Windows Forms Model, Creating Windows Forms Windows Forms Properties and Events, Windows Form Controls, Menus, Dialogs, Tool Tips, Printing - Handling Multiple Events, GDI+, Creating Windows Forms Controls.	04	14
2.	**ASP.NET** Introduction to ASP.NET, Working with Web and HTML Controls, Using Rich Server Controls, Login controls, Overview of ASP.NET Validation Controls, Using the Simple Validations, Using the Complex Validators Accessing Data using ADO.NET, Using the Complex Validators Accessing Data using ADO.NET,	04	12

	Configuration Overview, ASP.NET state management, tracing, caching, error handling, security, deployment.		
3.	**Managing State** Preserving State in Web Applications and Page-Level State, Using Cookies to Preserve State, ASP.NET Session State, Storing Objects in Session State, Configuring Session State, Setting Up an Out-of-Process State Server, Storing Session State in SQL Server, Using Cookieless Session IDs, Application State Using the DataList and Repeater Controls, Overview of List-Bound Controls, Creating a Repeater Control and DataList Control.	07	24

List of Practical:

Sr. No.	Name of Practical	Hours
1.	Introduction to .NET.	04
2.	Working with .NET and C#.	02
3.	Write C# code to convert infix notation to postfix notation.	02
4.	Write a C# code to convert the following currency conversion. Dollar to Rupee, Euro to Rupee, Pound to Rupee.	02
5.	Working with ASP.NET.	02
6.	Write a program to Enable-Disable Textbox and change the width of Textbox programmatically in ASP.NET.	02
7.	Write a program to increase and decrease the font size.	02
8.	Session and Cookie.	04
9.	Write ASP.NET program to Store Objects in Session State and Storing Session State in SQL Server.	04
10.	Write a C# code to Perform Celsius to Fahrenheit Conversion and Fahrenheit to Celsius conversion.	02
11.	Simple Object Access Protocol (SOAP) and Web Services.	04

Text Book(s):

Title	Author/s	Publication
Professional C#4.0 and .Net 4	Christian Nagel, Bill Evjen, Jay Glynn, K. Watson, M. Skinner	Wrox Publication
C# The Basics	Vijay Mukhi.	BPB Publications

Reference Book(s):

Title	Author/s	Publication
ASP.NET Complete Reference.	Matthew Macdonald and Robert Standefer	McGraw Hill Education

Web Material Link(s):

- https://teamtreehouse.com/learn/csharp
- https://www.asp.net/aspnet/videos
- https://www.asp.net/web-forms/videos/aspnet-35

Course Evaluation:

Theory:

- Continuous Evaluation consists of two tests each of 30 marks and 1 Hour of duration, which will be converted to 30 marks.
- Faculty evaluation consists of 10 marks as per the guidelines provided by the course coordinator.
- End Semester Examination consists of 60 marks.

Practical:

- Continuous Evaluation consists of the performance of practical which will be evaluated out of 10 marks for each practical and average of the same will be converted to 10 marks.

- Internal viva consists of 10 marks.
- Practical performance/quiz/test consists of 15 marks during End Semester Exam.
- Viva/oral performance consists of 15 marks during End Semester Exam.

Course Outcome(s):

After completion of the course, the students will be able to

IDIT3510	.NET Technology
CO 1	Describe the Microsoft .net framework and asp.net page structure.
CO 2	Construct windows and web application with variety of gui controls.
CO 3	Integrate the database connectivity using inbuilt data access tools such as ado.net.
CO 4	Prepare and deploy secure web application and web services.

Level of Revised Bloom's Taxonomy in Assessment:

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

Module No	Content	RBT Level
1	Introduction to .NET Framework	1,2
2	Basics and Console Applications in C#	1,2,4
3	C#.NET	1,2
4	Windows Forms and Controls in details	2,3,4
5	ASP.NET	1,2
6	Managing State	2,5,6

P P Savani University
School of Engineering
Institute of Diploma Studies

Department of Information Technology

Course Code: IDIT3520
Course Name: Advance Java Programming
Prerequisite Course: -

Teaching & Examination Scheme:

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
2	2	0	3	40	60	20	30	0	0	150

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:
To help learners to

- understand J2EE architecture.
- construct web application using servlets, Java Server pages.
- learn advanced java programming concepts like hibernate, Enterprise java beans, etc.

Course Content:

Section I			
Module	**Content**	**Hours**	**Weightage in %**
1.	**Client Server Technology** Introduction to Single Tier Architecture, Two Tier Architecture, Multitier Architecture, HTTP protocol: Request and Response, Web Container, Web Server, Overview of J2EE, J2EE Architecture, J2EE Technology.	05	10
2.	**Servlets Programming** Introduction, Servlet Implementation, Servlet configuration, Servlet life cycle, servlet session, Context and Collaboration, Web Archive files, Deployment Descriptor, Deployment Configuration.	05	20
3.	**Java Server Page** **JSP:** Overview, lifecycle, Architecture, **JSP Elements:** Directives, Scripting, Action tags, Implicit Objects, Comments, Custom Tags, page, **Scope:** page, request, session, JSP Exception Handling.	05	20
Section II			
Module	**Content**	**Hours**	**Weightage in %**
1.	**JDBC** Introduction to java database programming, JDBC driver types, Steps to connect JDBC, JDBC statement interface, JDBC prepared statement interface, JDBC callable statement interface, Transaction management, Java beans.	05	15
2.	**Web Services** Introduction, Web Service Technology, J2EE for web service, developing web services.	03	10
3.	**Hibernate**	03	15

	Introduction, Hibernate Architecture, component of Hibernate, Hibernate query Language, Hibernate O/R mapping.		
4.	**Java Web Frameworks: Spring MVC** Overview of Spring, Spring Architecture, bean life cycle, XML Configuration on Spring, Aspect – oriented Spring, Managing Database, Managing Transaction	04	10

List of Practical:

Sr. No	Name of Practical	Hours
1.	Introduction to client-server architecture	02
2.	Study and implementation of servlet programming	06
3.	Study and implementation of java server page	06
4.	Study and implementation of java database connectivity	06
5.	Study and implementation of web service	04
6.	Study and implementation of hibernate	04
7.	Study and implementation of Spring Framework	02

Text Book(s):

Title	Author/s	Publication
Complete Reference J2EE	James Keogh	Mc Graw Hill

Reference Book(s):

Title	Author/s	Publication
Spring in Action 3rd edition	Craig walls	Manning
JDBC™ API Tutorial and Reference	Maydene Fisher, Jon Ellis, Jonathan Bruce	Addison Wesley

Web Material Link(s):

- https://www.javatpoint.com/servlet-tutorial/
- https://www.javatpoint.com/jsp-tutorial/

Course Evaluation:

Theory:

- Continuous Evaluation consists of two tests each of 30 marks and 1 Hour of duration, which will be converted to 30 marks.
- Faculty evaluation consists of 10 marks as per the guidelines provided by the course coordinator.
- End Semester Examination consists of 60 marks.

Practical:

- Continuous Evaluation consists of the performance of practical which will be evaluated out of 10 marks for each practical and average of the same will be converted to 10 marks.
- Internal viva consists of 10 marks.
- Practical performance/quiz/test consists of 15 marks during End Semester Exam.
- Viva/oral performance consists of 15 marks during End Semester Exam.

Course Outcome(s):

After completion of the course, the students will be able to

IDIT3520	ADVANCE JAVA PROGRAMMING
CO 1	Implement Networking and Data base connectivity in Java for given application.

CO 2	Design and implement webpage with dynamic content and server-side web application using Servlet and JSP.
CO 3	Apply the different web services on dynamic web-based applications.
CO 4	Analyze and Implement database independent application using ORM (Object Relation Mapping) Hibernate.
CO 5	Use web application framework and apply Model-View-Controller architecture to build complex client-server applications.

Level of Revised Bloom's Taxonomy in Assessment:

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

Module No	Content	RBT Level
1	Client Server Technology	1,2,4,6
2	Servlet Programming	2,4,5,6
3	Java Server Pages	2,4,5,6
4	JDBC	1, 2, 3, 5, 6
5	Web Service	2,4,5,6
6	Hibernate	2,5,6
7	Spring Framework	2,3,6

P P Savani University
School of Engineering
Institute of Diploma Studies

Department of Computer Engineering

Course Code: IDCE3510
Course Name: Fundamentals of IoT with Python
Prerequisite Course: NIL

Teaching & Examination Scheme:

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
2	2	0	3	40	60	20	30	0	0	150

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:
To help learners to

- understand IoT Concepts and Architecture
- learn Python Programming for IoT.
- learn IoT system development and deployment

Course Content:

Section I			
Module	**Content**	**Hours**	**Weightage in %**
1.	**Introduction to IoT and Python** Overview of IoT, IoT Architecture, Introduction to Python, Setting Up the Python Environment, Basic Python Programming.	05	10
2.	**IoT Hardware and Sensors** IoT Hardware Platforms Sensors and Actuators, Interfacing Sensors with Raspberry Pi, Using GPIO Pins with Python	05	20
3.	**Communication Protocols and Data Transmission** Communication Protocols, Implementing MQTT with Python, Data Serialization, Sending Sensor Data to the Cloud	05	20
Section II			
Module	**Content**	**Hours**	**Weightage in %**
1.	**Data Processing and Analysis** Introduction to Data Processing, Using Python Libraries, Data Visualization, Real-time Data Processing.	05	15
2.	**IoT Security and Privacy** IoT Security Fundamentals, Secure Communication, Device Security, Privacy Concerns.	05	15
3.	**IoT System Integration and Deployment** IoT System Design, Integration with Cloud Services, Edge Computing, Deployment Strategies.	05	20

List of Practical:

Sr. No	Name of Practical	Hours
1.	• Write a Python script to perform basic arithmetic operations. • Create a Python program to manipulate strings and lists. • Install Python and set up a development environment (IDE). • Install necessary libraries such as numpy, pandas, and matplotlib. • Write a Python script that reads input from the user and prints a response. • Implement a Python program using loops, conditionals, and functions.	05
2.	Introduction to Raspberry Pi, Interfacing Sensors, Controlling Actuators, Building a Basic IoT Project	05
3.	Implementing MQTT, HTTP Communication**,** Data Serialization with JSON, Cloud Data Transmission	05
4.	• Write a Python script to collect sensor data and store it in a CSV file. • Use Pandas to read, filter, and aggregate sensor data from a CSV file. • Create line plots, bar charts, and histograms using Matplotlib to visualize sensor data. • Implement real-time data plotting to visualize live sensor data. • Use Python to process and analyze streaming data from sensors in real-time.	05
5.	• Implement SSL/TLS for secure communication between devices. • Encrypt sensor data before transmission and decrypt it on the receiving end.	05
6.	Develop and deploy a comprehensive IoT solution that integrates all learned components, such as a smart home system or an industrial monitoring solution	05

Text Book(s):

Title	Author/s	Publication
Fundamentals of IoT with Python	Dr. Emily Johnson	TechEdu Press

Reference Book(s):

Title	Author/s	Publication
Internet of Things: Principles and Paradigms	Rajkumar Buyya, Amir Vahid Dastjerdi	Morgan Kaufmann
Python Programming for Raspberry Pi, Sams Teach Yourself in 24 Hours	Richard Blum, Christine Bresnahan	Sams Publishing

Web Material Link(s):

- Introduction to the Internet of Things (IoT) – Coursera
- Python for IoT: Working with Sensors and Raspberry Pi - Real Python

Course Evaluation:

Theory:

- Continuous Evaluation consists of two tests each of 30 marks and 1 Hour of duration, which will be converted to 30 marks.
- Faculty evaluation consists of 10 marks as per the guidelines provided by the course coordinator.
- End Semester Examination consists of 60 marks.

Practical:

- Continuous Evaluation consists of the performance of practical which will be evaluated out of 10 marks for each practical and average of the same will be converted to 10 marks.
- Internal viva consists of 10 marks.
- Practical performance/quiz/test consists of 15 marks during End Semester Exam.
- Viva/oral performance consists of 15 marks during End Semester Exam.

Course Outcome(s):

After completion of the course, the students will be able to

IDCE3510	FUNDAMENTALS OF IOT WITH PYTHON
CO 1	Understand IoT Fundamentals.
CO 2	Develop IoT Applications with Python
CO 3	Integrate and Communicate with IoT Hardware
CO 4	Process and Analyze IoT Data.
CO 5	Implement IoT Security and Deployment.

Level of Revised Bloom's Taxonomy in Assessment:

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

Module No	Content	RBT Level
1	Introduction to IoT and Python	2
2	IoT Hardware and Sensors	3
3	Communication Protocols and Data Transmission	3
4	Data Processing and Analysis	4
5	IoT Security and Privacy	5
6	IoT System Integration and Deployment	6

SEMESTER 6

P P Savani University
School of Engineering
Institute of Diploma Studies

Department of Information Technology

Course Code: IDIT3040
Course Name: System Administration and IT Infrastructure
Prerequisite Course(s): Nil

Teaching & Examination Scheme:

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
2	4	0	4	40	60	40	60	00	00	200

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the course:
To help learners to

- understand the roles and responsibilities of a System Administrator.
- know the most common IT infrastructure services you'll encounter when handling system administration tasks.
- understand how to setup and manage the IT infrastructure services to help a business stay productive, keep information secure, and deliver applications to its users.
- how to add users, passwords, and use group policies in Active Directory and OpenLDAP.
- know the tradeoffs between on-site and off-site backups, understand the value and importance of backup and recovery testing, know different options for data backup (as well as the risks) and understand the purpose and contents of a disaster recovery plan.

Course Content:

SECTION-I			
Module No.	Content	Hours	Weightage in %
1.	**Introduction to System Administration** Basics of system administration, organizational policies, IT infrastructure services, user and hardware provisioning, routine maintenance, troubleshooting, and managing potential issues.	5	15
2.	**Network and Infrastructure Services** Role of IT infrastructure services in system administration, server operating systems, virtualization, network services, DNS for web services, and how to troubleshoot network services.	5	20
3.	**Software and Platform Services** Configure email services, security services, file services, print services, and platform services, and troubleshoot platform services and common issues to look out for.	5	15
SECTION-II			
Module No.	Content	Hours	Weightage in %

1.	**Directory Services** Active Directory and OpenLDAP, concept of centralized management and how this can help SysAdmins maintain and support all the different parts of an IT infrastructure	12	25
2.	**Data Recovery & Backups** how to backup and recover data, designing a disaster recovery plan and writing post-mortem documentation	13	25

List of Practical:

Sr. No.	List of Practical	Hours
1.	Systems Administration Tasks, What is System Administration?	2
2.	Intro to IT Infrastructure Services	2
3.	Physical Infrastructure Services	2
4.	Network Services	2
5.	Service Management in Linux	2
6.	Service Management in Windows	2
7.	Getting familiar with DNS and DHCP	2
8.	File, Print, and Platform Services	2
9.	Managing websites with Apache2	2
10.	Troubleshooting Platform Services	2
11.	Software and Platform Services	2
12.	Introduction to Directory Services	2
13.	Using Active Directory Centralized Management and LDAP	2
14.	Planning for Data Recovery	2
15.	Disaster Recovery Plans	2
16.	Post-Mortems``	2
17.	Data Recovery & Backups	2
18.	Final Project - assess the IT infrastructure of three fictitious (but very real life based!) companies and provide recommendations and advice about how to support their IT infrastructure.	26

Text Book:

Title	Author(s)	Publication
Modern System Administration	O'Reily	O'Reily

Reference Book:

Title	Author(s)	Publication
The Practice of System and Network Administration	Thomas A. Limoncelli , Christina J. Hogan, Strata R. Chalup	Addison Wesley

Course Evaluation:

Theory:

- Continuous Evaluation consists of two tests, each of 30 marks and 1 hour of duration and average of the same will be converted to 30 marks.

- Faculty evaluation consists of 10 marks as per the guidelines provided by the Course Coordinator.
- End Semester Examination consists of 60 marks.

Practical:

- Continuous evaluation consists of performance of practical which will be evaluated out of 10 Marks for each tutorial and average of the same will be converted to 30 marks.
- MCQ based examination consists of 30 marks.
- Project work consists of 40 marks.

Course Outcome(s):

IDIT3040	SYSTEM ADMINISTRATION AND IT INFRASTRUCTURE
CO 1	Utilize best practices for choosing hardware, vendors, and services for your organization
CO 2	Understand how the most common infrastructure services that keep an organization running work, and how to manage infrastructure servers
CO 3	Manage an organization's computers and users using the directory services, Active Directory, and OpenLDAP
CO 4	Choose and manage the tools that your organization will use

Level of Revised Bloom's Taxonomy in Assessment:

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

Module No	Content	RBT Level
1	Introduction to System Administration	1,2,4
2	Network and Infrastructure Services	2,3,4,6
3	Software and Platform Services	1,2,3,4
4	Directory Services	1,2,3
5	Data Recovery & Backups	2,4,5

P P Savani University
School of Engineering
Institute of Diploma Studies

Department of Computer Engineering

Course Code: IDCE3040
Course Name: Introduction to Computer Security
Prerequisite Course(s): -

Teaching & Examination Scheme:

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
03	02	00	04	40	60	20	30	00	00	150

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:

To help learners to

- identify and classify various cybercrimes with respect to organizational weaknesses in order to mitigate the security risk and estimate the impact on society and world.
- interpret and apply Indian IT laws in various legal issues.

Course Content:

SECTION I			
Module No.	Content	Hours	Weightage in %
1.	**Information Security Concepts** Information security issues, goals, architecture, attacks, Security Services and Mechanisms.	08	20
2.	**Introduction to Cryptography**: Network security model, Cryptographic systems, Cryptanalysis, Steganography. **Types of Cryptography**: Symmetric key and Asymmetric Key Cryptography, Encryption and Decryption Techniques.	07	15
3.	**Cryptographic Algorithms**: Cryptographic hash, Message Digest, Data Encryption Standard, Advanced Encryption Standard, RSA, ECC (Introductory concepts only)	08	15
SECTION II			
Module 0No.	Content	Hours	Weightage in %
1.	**Security Threats and Vulnerabilities** Overview of Security Threats and Vulnerability: Types of attacks on Confidentiality, Integrity and Availability. Vulnerability and Threats. **Malware:** Viruses, Worms, Trojan horses **Security Counter Measures**: Intrusion Detection Systems, Antivirus Software	12	25
2.	**Ethical Issues in Information Security & Privacy**	10	25

	Information Security, Privacy and Ethics, Cyber Crime and Cyber Terrorism, Hacking: Ethical issues		

List of Practical:

Sr. No.	Details of Practical	Hours
1.	TCP scanning using NMAP	2
2.	Port scanning using NMAP	2
3.	TCP / UDP connectivity using Netcat	2
4.	Network vulnerability using OpenVAS	4
5.	Web application testing using DVWA	2
6.	Manual SQL injection using DVWA	4
7.	XSS using DVWA	4
8.	Automated SQL injection with SqlMap	4
9.	Design based Problems (DP)/Open Ended Problem:	6

Text Book(s):

Title	Author(s)	Publication
Cryptography and Network Security	Behrouz A. Forouzon	McGraw Hill
Cybersecurity for Beginners	Raef Meeuwisse	Cyber Simplicity Ltd

Reference Book(s):

Title	Author(s)	Publication
Cyber Security	Nina Godbole, SunitBelapure	Wiley India, New Delhi
Anti-Hacker Tool Kit,4th Edition	Mike Shema	McGrawHill Publication
The Indian Cyber Law	Suresh T. Vishwanathan;	Bharat Law House New Delhi
Handbook of Applied Cryptography	Menezes, van Oorschot and Vanstone	CRC Press
Computer Security, 3/e	Gollmann	Wiley

Web Material Link(s):

- https://nptel.ac.in/courses/106105031/
- https://www.javatpoint.com/cyber-security-tutorial

Course Evaluation:

Theory:

- Continuous Evaluation consists of two tests, each of 30 marks and 1 hour of duration andaverage of the same will be converted to 30 marks.
- Faculty evaluation consists of 10 marks as per the guidelines provided by the CourseCoordinator.
- End Semester Examination consists of 60 marks.

Practical:

- Continuous Evaluation consists of performance of practical which will be evaluated out of 10 marks for each practical and average of the same will be converted to 10 marks.

- Internal viva consists of 10 marks.
- Practical performance/quiz/drawing/test consists of 15 marks during End Semester Exam.
- Viva/ Oral performance consists of 15 marks during End Semester Exam.

Course Outcome(s):

After the completion of the course, the student will be able to

IDCE3040	**INTRODUCTION TO COMPUTER SECURITY**
CO 1	Study different tools used in penetration testing.
CO 2	Study and understand cyber laws.
CO 3	Implement necessary approaches and techniques to build protection mechanisms in order to secure information and computer networks.

Level of Bloom's Revised Bloom's Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

Module No	**Content**	**RBT Level**
1	Introduction to Cryptography	1, 2,4
2	Overview of Cyber Security	1,2,5
3	Cyber Security Vulnerabilities and Cyber Security Safeguards	1, 2, 3
4	Cyberspace and the Law	1, 2, 3
5	Cyber Forensics	2, 3, 4
6	Intrusion Detection and Prevention	2, 3, 4

P P Savani University
Centre for Language Studies

Course Code: TNPC3010
Course Name: Corporate Grooming & Etiquette
Prerequisite Course/s:-

Teaching & Examination Scheme:

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
03	00	00	03	100	00	00	00	00	00	100

CE: Continuous Evaluation, ESE: End Semester Exam

Objectives of the Course:

To help learners to

- learn corporate and professional structure and mannerisms.
- acquire self-development skills to balance casual and formal situation.
- polish their personal skills for apt behavior in the context of corporate structure.
- develop adequate Skill set required for the workplace.
- become aware about the professional etiquettes and tactics to follow them.

Course Content:

SECTION - I			
Module	Content	Hours	Weightage in %
1	**Corporate Grooming** • Introduction to corporate culture • Corporate Expectations • Need of Self-Grooming to the Corporate Expectations • Understanding and importance of Professionalism	10	33
2	**Personal Skills** • Behavioral skills • Language Skills • Knowledge Skills • Problem Solving Skills • Developing professional attitude	06	20
SECTION - II			
3	**Management Skills** • Self-management • Time management • Work life balance	06	20

4	**Organizational Etiquettes** • General Workplace Etiquettes • Presentation Etiquettes • Meeting Etiquettes	08	27

Reference Book (s):

Title	Author/s	Publication
Grooming and Etiquette for Corporate Men and Women	John Chibaya Mbuya	2009
Effective Communication Skills for Public Relations	Andy Green	Kogan Page, 2006
Personality Development and Soft Skills	Barun Mitra	Oxford University Press, 2016
The EQ Edge: Emotional Intelligence and Your Success	Stein, Steven J. & Howard E. Book	Wiley & Sons, 2006.
Cross Cultural Management: Concepts and Cases	Madhavan	Oxford University Press, 2016
Corporate Grooming and Etiquette	Sarvesh Gulati	Rupa Publications India Pvt. Ltd., 2012
Behavioral Science: Achieving Behavioral Excellence for Success	Dr. Abha Singh	John Wiley & Sons, 2012

Course Evaluation:

Theory:

Continuous Evaluation consists of 100 marks. This carries two tests/presentations/group discussions each of 50 marks.

Course Outcome(s):

After completion of the course, the students will be able to

CO 1	Understand the importance of professional etiquettes and ways to improve the same.
CO 2	Gain the knowledge and practice of skill sets required in corporate set up.
CO 3	Learn personal management skills in the organizational context.
CO 4	Develop an awareness about the corporate etiquettes.
CO 5	Understand the importance of self grooming

Level of Bloom's Revised Bloom's Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

Module No	Content	RBT Level
1	Corporate Grooming	1,2,3,4,5
2	Personal Skills	1,2,3,4,5,6
3	Management Skills	1,2,3,4,5
4	Organizational Etiquettes	2,3,4,5

P P Savani University
School of Engineering
Institute of Diploma Studies

Department of Computer Engineering

Course Code: IDCE3920
Course Name: Project/TrainingPrerequisite Course(s):
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Teaching & Examination Scheme

Teaching Scheme (Hours/Week)				Examination Scheme (Marks)						
Theory	Practical	Tutorial	Credit	Theory		Practical		Tutorial		Total
				CE	ESE	CE	ESE	CE	ESE	
11			11	00	00	200	300	00	00	500

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:
To help learners to

- identify, analyze and articulate projects with a comprehensive and systematic approach.
- develop creative thinking.
- develop Ability to solve problem
- learn working in a team.

Guidelines(s):

Sr. No.	Content	Hours	Weightage in %
1.	**Selection of Project Title** After selecting the Project and proposed title, get approval from the Expert Panel	10	10
2.	**Literature Review / Requirement Analysis** Study in detail about the project definition chosen	10	10
3.	**System Design** Prepare the required documents in consultation with Mentor Introduction, Purpose, System Overview, System Design Constraints, Roles and Responsibilities, System Architecture, Database Design, System Security Controls, Project Reference	10	20
4.	**Implementation** Implementation of the project in any of the programming languages	20	40
5.	**Report Writing** The report must be prepared as per suggested guidelines consisting of Preamble, Objectives, Scope, Introduction, Conclusions, Recommendations and Annexure	05	10
6.	**Presentation Preparation** At the end of the semester, the student/group of students shall give a presentation of their work followed by a viva-voce examination	05	10

Course Evaluation:

Sr. No	Evaluation Criteria	Marks
1.	Selection of the topic (Within first 30 Days of commencement of semester)	10
2.	Initial Presentation of the topic (Within 31 to 45 Days of commencement of semester)	10
3.	An actual work carried out. (Within 46 to 70 Days of commencement of semester)	40
4.	Report writing as per guidelines.	10
5.	Presentation & Question-Answer session.	30

Course Outcome(s):

After the completion of the course, the following course outcomes will be able to:

IDCE3920	PROJECT/TRAINING
CO 1	Identify a problem in the domain of information technology and communication which requires in-depth investigation.
CO 2	Identify, discuss and justify the procedure, materials and technical aspects required for a project work.
CO 3	Formulate and implement innovative ideas in a concerned field.
CO 4	Work as an individual or in a team in development and execution of project

Level of Bloom's Revised Bloom's Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

Module No	Content	RBT Level
1	Selection of Project Title	1, 2, 3
2	Literature Review / Requirement Analysis	1, 2, 3, 4
3	System Design	1, 2, 3, 4
4	Implementation	4, 5, 6
5	Report Writing	1, 2, 3, 4
6	Presentation Preparation	1, 2, 3, 4

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