Syllabus Book

1st Year B. Tech.
Machine Learning & Artificial Intelligence

P P Savani University

School of Engineering
Department of Computer Science Engineering (ML & AI)

Effective From: 2020-21
Authored by: P P Savani University

P P SAVANI UNIVERSITY

SCHOOL OF ENGINEERING

TEACHING & EXAMINATION SCHEME FOR FOURTH YEAR B.TECH. MACHINE LEARNING & ARTIFICIAL INTELLIGENCE PROGRAMME

Sem	Course Code	Course Title	Offered By	Teaching Scheme					Examination Scheme						Total
				Contact Hours				Credit	Theory		Practical		Tutorial		
				Theory	Practical	Tutorial	Total		CE	ESE	CE	ESE	CE	ESE	
1	SESH1070	Fundamentals of Mathematics	SH	2	0	2	4	4	40	60	0	0	50	0	150
	SECV1040	Basics of Civil & Mechanical Engineering	CV	4	2	0	6	5	40	60	20	30	0	0	150
	SECE1050	Programming for Problem Solving	CE	3	4	0	7	5	40	60	40	60	0	0	200
	SESH1240	Electrical & Electronics Workshop	SH	0	2	0	2	1	0	0	50	0	0	0	50
	SEPD1030	Communicative English	SEPD	1	2	0	3	2	50	0	20	30	0	0	100
						Total	**22**	**17**							**650**
2	SESH1080	Linear Algebra & Calculus	SH	3	0	2	5	5	40	60	0	0	50	0	150
	SEIT1030	Object Oriented Programming with Java	IT	3	4	0	7	5	40	60	40	60	0	0	200
	SEIT1010	Introduction to Web Designing	IT	0	2	0	2	1	0	0	50	0	0	0	50
	SEME1020	Engineering Workshop	ME	0	2	0	2	1	0	0	50	0	0	0	50
	SEME1040	Concepts of Engineering Drawing	ME	2	2	0	4	3	40	60	20	30	0	0	150
	SESH1210	Applied Physics	SH	3	2	0	5	4	40	60	20	30	0	0	150
	SEPD1020	Communication Skills	SEPD	1	2	0	3	2	50	0	20	30	0	0	100
						Total	**28**	**21**							**850**

CONTENT

Semester 1

Semester 2

P P Savani University
School of Engineering

Department of Applied Science and Humanities

Course Code: SESH1070
Course Name: Fundamentals of Mathematics
Prerequisite Course(s): Algebra, Geometry, Trigonometry &Pre-Calculus till 12th 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	
2	0	2	4	40	60	0	0	50	0	150

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:
To help learners to
- summarize concept of calculus to enhance ability of analysing mathematical problems.
- acquire knowledge and ability to work with differentiation and integration for
- applications of mathematical techniques in engineering.
- develop the tool of power series for learning advanced Engineering Mathematics.
- analyse and solve system of linear equations and understand characteristics of Matrices.

Course Content:

Section I			
Module No.	Content	Hours	Weightage in %
1	**Calculus** Limits, Continuity, Types of Discontinuity, Successive Differentiation, Rolle's Theorem, LMVT, CMVT, Maxima and Minima.	8	28
2	**Sequence and Series-I** Convergence and Divergence, Comparison Test, Integral Test, Ratio Test, Root Test, Alternating Series, Absolute and Conditional Convergence.	6	20
Section II			
Module No.	Content	Hours	Weightage in %
1	**Sequence and Series-II** Power series, Taylor and Macluarin series, Indeterminate forms and L'Hospitals Rule.	6	20
2	**Matrix Algebra** Elementary Row and Column operations, Inverse of matrix, Rank of matrix, System of Linear Equations, Characteristic Equation, Eigen values and Eigen vector, Diagonalization, Cayley Hamilton Theorem, Orthogonal Transformation	10	32

List of Tutorial:

Sr. No.	Name of Tutorial	Hours
1.	Calculus-1	2
2.	Calculus-2	2
3.	Integration	2
4	Sequence and Series-1	2
5.	Sequence and Series-2	2
6.	Sequence and Series-3	2
7.	Matrix Algebra-1	2
8.	Matrix Algebra-2	2
9.	Matrix Algebra-3	2
10.	Matrix Algebra-4	2

Text Book(s):

Title	Author/s	Publication
Thomas' Calculus	George B. Thomas, Maurice D. Weir & Joel Hass	Pearson
Elementary linear Algebra	Howard Anton and Chrish Rorres	Wiley

Reference Book(s):

Title	Author(s)	Publication
Advanced Engineering Mathematics	E Kreyszig	John Wiley and Sons
A textbook of Engineering Mathematics	N P Bali and Manish Goyal	Laxmi
Higher Engineering Mathematics	B S Grewal	Khanna
Engineering Mathematics for First Year	T Veerarajan	Tata Mc Graw Hill
Engineering Mathematics-1 (Calculus)	H. K. Dass and Dr. Rama Verma	S. Chand

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 10 marks.
- Internal Viva consists of 10 marks.

Course Outcome(s):
After completion of the course, the student will be able to
- make use of concepts of limit, continuity and differentiability for analysing mathematical problems.
- use concepts of Limit, Derivatives and Integrals.
- examine series for its convergence and divergence.
- solve linear system using matrices.

P P Savani University
School of Engineering

Department of Civil Engineering

Course Code: SECV1040
Course Name: Basics of Civil & Mechanical 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	
4	2	0	5	40	60	20	30	0	0	150

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:

To help learners to
- study the fundamentals of mechanical systems.
- study and appreciate significance of mechanical engineering in different fields of engineering.
- carry out simple land survey and recent trends in civil engineering.
- understand components of building, building terminology and construction materials.

Course Content:

Section I			
Module No.	Content	Hours	Weightage in %
1.	**Civil Engineering: An Overview** Introduction, Branches, Scope, Impact, Role of Civil Engineer, Unit of Measurement, Unit Conversion (Length, Area, Volume)	03	04
2.	**Introduction to Surveying and Levelling:** Introduction, Fundamental Principles, Classification **Linear Measurement:** Instrument Used, Chaining on Plane Ground, Offset, Ranging **Angular Measurement:** Instrument Used, Meridian, Bearing, Local Attraction **Levelling:** Instrument Used, Basic Terminologies, Types of Levelling, Method of Levelling **Modern Tools:** Introduction to Theodolite, Total Station, GPS	07	12
3.	**Building Materials and Construction:** Introduction (Types and Properties) to Construction Materials Like Stone, Bricks, Cement, Sand, Aggregates, Concrete, Steel. Classification of Buildings, Types of Loads	10	14

Module No.	Content	Hours	Weightage in %
	Acting on Buildings, Building Components and their Functions, Types of Foundation and Importance, Symbols Used in Electrical Layout, Symbols Used for Water Supply, Plumbing and Sanitation		
4.	**Construction Equipment:** Types of Equipment- Functions, Uses. Hauling Equipment- Truck, Dumper, Trailer. Hoisting Equipment- Pulley, Crane, Jack, Winch, Sheave Block, Fork Truck. Pneumatic Equipment-Compressor. Conveying Equipment- Package, Screw, Flight/scrap, Bucket, Belt Conveyor. Drill, Tractor, Ripper, Rim Pull, Dredger, Drag Line, Power Shovel, JCB, HOE.	04	08
5.	**Recent Trends in Civil Engineering:** Mass Transportation, Rapid Transportation, Smart City, Sky Scarper, Dams, Rain Water Harvesting, Batch Mix Plant, Ready Mix Concrete Plant, Green Building, Earth Quake Resisting Building, Smart Material	06	12

Section II			

Module No.	Content	Hours	Weightage in %
1.	**Basic Concepts of Thermodynamics:** Prime Movers - Meaning and Classification; the Concept of Force, Pressure, Energy, Work, Power, System, Heat, Temperature, Specific Heat Capacity, Internal Energy, Specific Volume; Thermodynamic Systems, All Laws of Thermodynamics	04	06
2.	**Fuels and Energy:** Fuels Classification: Solid, Liquid and Gaseous; their Application, Energy Classification: Conventional and Non-Conventional Energy Sources, Introduction and Applications of Energy Sources like Fossil Fuels, Solar, Wind, and Bio-Fuels, LPG, CNG, Calorific Value	04	06
3.	**Basics of Steam Generators:** Introduction, Classification, Cochran, Lancashire and Babcock and Wilcox Boiler, Functioning of Different Mountings and Accessories	LAB	12
4.	**Basics of I.C Engines:** Construction and Working of 2 Stroke & 4 Stroke Petrol and Diesel Engines, Difference Between 2-Stroke - 4 Stroke Engine & Petrol-Diesel Engine, Efficiency of I. C. Engines	12	14
5.	**Power Transmission Elements:** Construction and Applications of Couplings, Clutches and Brakes, Difference Between Clutch and Coupling, Types of Belt Drive and Gear Drive	10	12

List of Practical:

Sr. No.	Name of Practical	Hours
1.	Unit conversation Exercise and Chart preparation of building components	02
2.	Linear measurements	02
3.	Angular measurements	02
4.	Determine R. L of given point by Dumpy level. (Without Change Point)	02
5.	Determine R. L of given point by Dumpy level. (With Change Point)	02
6.	Presentation on various topics as in module about recent trends	04
7.	To understand construction and working of various types of boilers	04
8.	To understand construction and working of mountings	04
9.	To understand construction and working of accessories	04
10.	To understand construction and working 2 –stroke & 4 –stroke Petrol Engines	02
11.	To understand construction and working 2 –stroke & 4 –stroke Diesel Engines	02

Text Book(s):

Title	Author(s)	Publication
Elements of Mechanical Engineering	S. B. Mathur, S. Domkundwar	Dhanpat Rai & Sons Publications
Elements of Mechanical Engineering	Sadhu Singh	S. Chand Publications
Elements of Civil Engineering	Anurag A. Kandya	Charotar Publication
Surveying Vol. I & II	Dr. B. C. Punamia	Laxmi Publication

Reference Book(s):

Title	Author(s)	Publication
Thermal Engineering	R. K. Rajput	Laxmi Publications
Basic Mechanical Engineering	T.S. Rajan	Wiley Eastern Ltd., 1996.
Surveying and Levelling	N. N. Basak	Tata McGraw Hill
Surveying Vol. I	S. K. Duggal	Tata McGraw Hill
Surveying and Levelling	R. Subramanian	Oxford University
Building Construction and Construction Material	G. S. Birdie and T. D. Ahuja	Dhanpat Rai Publishing
Engineering Material	S.C. Rangwala	Charotar Publication

Web Material Link(s):
- http://nptel.ac.in/course.php
- http://nptel.ac.in/courses/105107157/
- http://nptel.ac.in/courses/105101087/
- http://nptel.ac.in/courses/105107121/
- http://nptel.ac.in/courses/105104100/

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 Course Coordinator.
- End Semester Examination will consist 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 of 15 marks during End Semester Exam.
- Viva/Oral performance of 15 marks during End Semester Exam.

Course Outcome(s):

After completion of the course, the student will be able to
- know the principles and working of basic mechanical systems.
- comprehend importance of mechanical engineering in various fields of engineering.
- know about different civil engineering fields with an overview of building material, building construction and recent developments in civil engineering.

P P Savani University
School of Engineering

Department of Computer Engineering

Course Code: SECE1050
Course Name: Programming for Problem Solving
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	
3	4	0	5	40	60	40	60	0	0	200

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:

To help learners to
- understand the basic components of a computer system.
- identify an 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 Computers:** Introduction, Central Processing Unit, Main Memory Unit, Interconnection of Units, Communication between Units of a Computer System. Memory Representation and Hierarchy, Random Access Memory, Read-only Memory, Classification of Secondary Storage Devices, Types of I/O Devices. Classification of Programming Languages, Generations of Programming Languages - Machine Language, Assembly Language, High-Level Language, 4GL.	04	10
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.	06	15

Module No.	Content	Hours	Weightage in %
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.	05	10
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.	07	15
Section II			
Module No.	Content	Hours	Weightage in %
1.	**Arrays:** Introduction, One-dimensional Arrays, Two-dimensional Arrays, Concept of Multidimensional Arrays.	05	12
2.	**Strings:** Declaring and Initializing String Variables, Arithmetic Operations on Characters, Putting Strings Together, Comparison of Two Strings, String Handling Functions.	04	10
3.	**User-Defined Functions:** Concepts of User-defined Functions, Prototypes, function Definition, Parameters, Parameter Passing, Calling a Function, Recursive Function, Macros and Macro Substitution	04	10
4.	**Structure and Unions:** Introduction, Structure Definition, Declaring and Initializing Structure Variables, Accessing Structure Members, Copying & Comparison of Structures, Arrays of Structures, Arrays within Structures, Structures within Structures, Structures and Functions, Unions.	04	08
5.	**Pointers and File Management:** Basics of Pointers, a Chain of Pointers, Pointer and Array, Pointer to an Array, an Array of Pointers, Pointers and Functions, Dynamic Memory Allocation. Introduction to file Management and its Functions.	06	10

List of Practical:

Sr. No.	Name of Practical	Hours
1.	Introduction to Unix Commands (creating a folder, creating a file, deleting a file, renaming files, copy a file from one location to another, listing entire directories and files, list directories, listing files, moving files from one location to another)	02
2.	Introduction to C programming environment, compiler, Linker, loader, and editor.	02

3.	Working with basic elements of C languages (different input functions, different output functions, different data types, and different operators)	06
4.	Working with C control structures (if statement, if-else statement, nested if-else statement, switch statement, break statement, goto statement)	06
5.	Working with C looping constructs (for loop, while loop, do-while and nested for loop)	10
6.	Working with the array in C (1-D array, and 2-D array)	04
7.	Working with strings in C (input, output, different string inbuilt functions)	04
8.	Working with user-defined functions in C (function with/without return type, function with/without argument, function and array)	06
9.	Working with recursive function in C	02
10.	Working with structure and union in C (structure declaration, initialization, an array of structures, structure within structure, structure and functions, an array within structure and union)	08
11.	Working with pointer in C (initialization, pointer to pointer, pointer and array, an array of pointer, pointer and function)	06
12.	Working with files in C (opening a file, data insertion, and extraction from file, file management functions)	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	ReemaThareja	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 practical performance which should be evaluated out of 10 for each practical and average of the same will be converted to 20 marks.
- Internal viva consists of 20 marks.
- Practical performance/quiz/test consists of 30 marks during End Semester Exam.
- Viva-voce consists of 30 marks during End Semester Exam.

Course Outcome(s):

After completion of the course, the students 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.

Department of Mechanical Engineering

Course Code: SEME1050
Course Name: Electrical & Electronics 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	
0	2	0	1	0	0	50	0	0	0	50

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:

To help learners to

- expose to the fundamental principles, concepts, methods and circuits to understand the electronic system.
- learn to use common electronic component on breadboard.
- make the student understand about instruments and terminologies used in electrical & electronic circuits and their applications.

List of Practical:

Sr. No	Name of Practical	Hours
1.	Understanding of electronic components with their specifications	2
2.	Understanding of Galvanometer, Voltmeter, Ammeter, Wattmeter and Multimeter	2
3.	Understanding of breadboard connections	2
4.	Drawing and wiring of basic circuits on breadboard	2
5.	Verification of Ohm's law	2
6.	Kirchhoff's laws (KVL, KCL)	2
7.	Study of CRO, measurement of amplitude (voltage) & time period (frequency)	4
8.	Half wave, full wave using centre tap transformer and full wave bridge rectifier	4
9.	Electrical wiring system	2
10.	Faraday's laws of Electromagnetic Induction and Electricity Lab	2
11.	LDR characteristics	2
12.	PCB designing	4

Text Book(s):

Title	Author(s)	Publication
Electronic Principles	Albert Malvino and David J Bates	Mc Graw Hill(7th Edition)
Principles of Electronics	V. K. Mehta, Rohit Mehta	S. Chand

Reference Book(s):

Title	Author(s)	Publication
Electronic Devices	Thomas L. Floyd	Pearson (7th Edition)
Electronic Devices and Circuits	David A. Bell	Oxford Press (5th Edition)
Integrated Electronics	Jacob Millman, Christos	Tata McGraw Hill (2nd Edition)

Course Evaluation:
Practical:
- Continuous Evaluation consist of performance of practical which should be evaluated out of 10 for each practical and at the end of the semester the average of the same will be converted to 10 Marks.
- Internal viva consists of 20 marks.
- Internal practical performance of 20 marks at the end of the semester.

Course Outcome(s):
After completion of the course, the students will be able to
- understand and identify small basic electronic circuits used in day to day life.
- design and wire-up small circuits on breadboard.
- troubleshoot electronic circuits using basic instruments.
- design and prepare PCBs on their own.
- Identify electronic and electrical circuits will be developed in students.

Center for Skill Enhancement and Professional Development

Course Code: SEPD1030
Course Name: Communicative English
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	
1	2	00	02	50	--	20	30	--	--	100

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:
To help learners to
- utilize their knowledge of grammar effectively for communicative purpose.
- learn language in authentic contexts.
- use English efficiently for routine.
- sharpen receptive skills for better comprehension by providing authentic resources.
- Enable themselves to express ideas clearly and accurately with fluent speaking & writing skills.
- gain confidence in speaking & writing English in an academic and professional context.
- analyze and improve pronunciation.

Course Content:

Module No.	Content	Hours	Weightage in %
1.	**Foundational Grammar & Vocabulary** - Functional use of pronoun, adjective, adverb, preposition, and conjunction - Narration of Past, Present and Future events - Vocabulary	03	20
2.	**Communicative English** - Phrases to express likes/dislikes, request, inquiry, order, predict, complain, question, answer, invite (accepting/ denying) - Idioms & Proverbs	04	30
3.	**Receptive Skills** - Introduction to Receptive Skills - Techniques/strategies of Reading - Techniques/strategies of Listening - Types of Listening Skills	04	25

4.	**Productive Skills** • Speech modulation and its importance • Phonetics and Transcription for effective pronunciation • Speaking in various contexts • Cohesion and Coherence/ Building Paragraphs • Technical Writing (Application/ Letter/ Review/ Report) • E-mail etiquettes	04	25

List of Practical:

Sr. No	Name of Practical	Hours
1.	Introduction to Foundational Grammar & Vocabulary – Ice Breaker	02
2.	Foundational Grammar – practice of pronoun, adjective, adverb, preposition, and conjunction with context	02
3.	Foundational Grammar – Narrating past, present and future events	02
4.	Communicative English – exposure to structures & phrases to express various language functions	02
5.	Communicative English – practice of using idioms, proverbs & phrases to communicate effectively	02
6.	Communicative English – Role play for requesting, inquiring, ordering, predicting, complaining, questioning, answering, inviting (accepting/denying)	02
7.	Communicative English – Role play for Requesting, inquiring, ordering, predicting, complaining, questioning, answering, inviting (accepting/denying)	02
8.	Practice of reading through authentic resources – Summarizing and Paraphrasing.	02
9.	Practice of reading through authentic resources – Skimming and Scanning	02
10.	Comprehensive Listening: Note Taking and Note Making	02
11.	Comprehensive Listening: Summarizing and Paraphrasing	02
12.	Speech for Fluency – phonetics	02
13.	Conversational Skills	02
14.	Leave Application/ Request Letter/Business Letter	02
15.	Notice/Memo/Agenda/ Minutes	02

Reference Book(s):

Title	Author(s)	Publication
Communicative English	Dr. Anuradha, Dr. Minal Batra	Nirmal Publishing, First edition (2016)
Communicative Grammar of English	Geoffrey Leech, Jan Sartvik	Longman, 3rd edition (6 January 2003)
Advanced Skills for Communication in English: Book I	V. Jaya Santhi	New century book house
Engineers' Guide to Technical Writing	Kenneth G. Budinski	ASM International, 2001
Communication Skills	Parul Popat & Kaushal Kotadia	Pearson, 2015
Practical Techniques to Develop Communication Skills	Parul Popat & Kaushal Kotadia	Pothi Prakashan, 2015

Web Material Link(s):

- https://www.researchgate.net/publication/301351158_Advanced_Skills_for_Communication_in_English_Book_I
- https://anekawarnapendidikan.files.wordpress.com/2014/04/a-communicative-grammar-of-english-by-geoffrey-leech.pdf
- https://archive.org/details/FunctionalEnglish/page/n1
- https://www.talkenglish.com/grammar/grammar.aspx
- http://toefl.uobabylon.edu.iq/papers/itp_2015_3158553.pdf
- https://msu.edu/course/be/485/bewritingguideV2.0.pdf
- https://www.khanacademy.org
- http://www.kantakji.com/media/6494/t121.pdf

Course Evaluation:

Theory:
- Continuous Evaluation consists of two tests each of 30 marks and average of the same will be converted to 30 marks.
- There will be a submission consisting 10 marks as per the guidelines of course coordinator.
- Faculty Evaluation consists of 10 marks as per the guidelines provided by the Course Coordinator.

Practical:
- Continuous Evaluation consists of performance of Practical which should be evaluated out of 10 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
- expand his/her vocabulary.
- use variety of sentence structures.
- use English effectively in academic and professional spectrum.
- enhance comprehensive listening.
- write English effectively with improved grammar and vocabulary.
- practice strategies for comprehensive reading in English.
- speak English fluently and efficiently.
- effectively use LSRW skills in English.

Department of Applied Science and Humanities

Course Code: SESH1080
Course Name: Linear Algebra & Calculus
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	
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

- learn about and work with vector space, linear transformation and inner product space.
- apply concepts of linear algebra for solving science and engineering problems.
- introduce the concept of improper integral and Beta-Gamma Function.
- develop the tool of Fourier series for learning advanced Engineering Mathematics.

Course Content:

Section I			
Module No.	Content	Hours	Weightage in %
1.	**Vector Space** Concept of vector space, Subspace, Linear Combination, Linear Dependence and Independence, Span, Basis and Dimension, Row Space, Column Space and Null Space, Rank and Nullity.	9	20
2.	**Linear Transformation** Introduction of Linear Transformation, Kernal and Range, Rank and Nullity, Inverse of Linear Transformation, Rank Nullity Theorem, Composition of Linear Maps, Matrix associated with linear map.	7	15
3.	**Inner Product Space** Inner Product, Angle and Orthogonality, Orthogonal projection, Gram- Schmidt process and QR Decomposition, Least square decomposition, Change of basis.	7	15
Section II			
Module No.	Content	Hours	Weightage in %
1.	**Beta and Gamma function** Improper Integrals, Convergence, Properties of Beta and Gamma Function, Duplication Formula (without proof)	6	14

2.	**Fourier Series** Periodic Function, Euler Formula, Arbitrary Period, Even and Odd function, Half Range Expansion, Parseval's Theorem	8	18
3.	**Curve tracing** Tracing of Cartesian Curves, Polar Coordinates, Polar and Parametric Form of Standard Curves, Areas and Length in Polar co-ordinates	8	18

List of Tutorial:

Sr. No.	Name of Tutorial	Hours
1.	Vector Space-1	4
2.	Vector Space-2	2
3.	Linear Transformation-1	2
4	Linear Transformation-2	2
5.	Inner Product-1	2
6.	Inner Product-2	2
7.	Beta and Gamma Function-1	2
8.	Beta and Gamma Function-2	2
9.	Curve tracing-1	2
10.	Curve tracing-2	2

Text Book(s):

Title	Author/s	Publication
Thomas' Calculus	George B. Thomas, Maurice D. Weir and Joel Hass	Pearson
Elementary Linear Algebra	Howard Anton and Chrish Rorres	Wiley

Reference Book(s):

Title	Author(s)	Publication
Advanced Engineering Mathematics	E Kreyszig	John Wiley & Sons
A textbook of Engineering Mathematics	N P Bali and Manish Goyal	Laxmi
Higher Engineering Mathematics	B S Grewal	Khanna
Engineering Mathematics for First Year	T Veerarajan	Tata Mc Graw Hill
Engineering Mathematics-1 (Calculus)	H. K. Dass and Dr. Rama Verma	S. Chand

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 10 marks.
- Internal Viva consists of 10 marks.

Course Outcome(s):

After completion of the course, the student will be able to
- understand the concepts of Vector Space, Linear Transformation and inner product
- space.
- evaluate functions like Gamma, Beta functions & their relation which is helpful to evaluate some definite integral arising in various branch of engineering.
- understand the concept of Fourier series.

Department of Information Technology

Course Code: SEIT1030
Course Name: Object Oriented Programming with Java
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	
3	4	0	5	40	60	40	60	0	0	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** Programming language Types and Paradigms, Flavors of Java, Java Designing Goal, Features of Java Language, JVM –The heart of Java, Java's Magic Bytecode.	03	05
2.	**Object-Oriented Programming Fundamentals** Class Fundamentals, Object and Object reference, Object Lifetime and Garbage Collection, Creating and Operating Objects, Constructor and initialization code block, Access Control, Modifiers, Nested class, Inner Class, Anonymous Classes, Abstract Class and Interfaces, Defining Methods, Method Overloading, Dealing with Static Members, Use of "this" reference, Use of Modifiers with Classes & Methods, Generic Class Types.	06	15
3.	**Java Environment and Data types** The Java Environment: Java Program Development, Java Source File Structure, Compilation Executions; Basic Language Elements: Lexical Tokens, Identifiers, Keywords, Literals, Comments, Primitive Data-types, and Operators.	05	10

			Hours	
4.	**Class and Inheritance** Use and Benefits of Inheritance in OOP, Types of Inheritance in Java, Inheriting Data Members and Methods, Role of Constructors in inheritance, Overriding Super Class Methods, Use of "super", Polymorphism in inheritance, Type Compatibility and Conversion, Implementing interfaces.	07	15	
5.	**Java Packages** Organizing Classes and Interfaces in Packages, Package as Access Protection, Defining Package, CLASSPATH Setting for Packages, Making JAR Files for Library Packages, Import and Static Import, Naming Convention for Packages.	02	05	

Section II				
Module No.	Content	Hours	Weightage in %	
1.	**Array and String Concepts** Defining an Array, Initializing & Accessing Array, Multi-Dimensional Array, Operation on String, Using Collection Bases Loop for String, tokenizing a String, Creating Strings using String Buffer.	04	10	
2.	**Exception Handling** The Idea behind Exception, Exceptions & Errors, Types of Exception, Control Flow In Exceptions, JVM reaction to Exceptions, Use of try, catch, finally, throw, throw in Exception Handling, In-built and User Defined Exceptions, Checked and Un-Checked Exceptions.	05	10	
3.	**Thread** Understanding Threads, Needs of Multi-Threaded Programming, Thread Life-Cycle, Thread Priorities, Synchronizing Threads, InterCommunication of Threads.	06	15	
4.	**Applet** Applet & Application, Applet Architecture, Parameters to Applet.	03	05	
5.	**Input-Output Operations in Java** Streams and the new I/O Capabilities, Understanding Streams, The Classes for Input and Output, The Standard Streams, Working with File Object, File I/O Basics, Reading and Writing to Files, Buffer and Buffer Management, Read/Write Operations with File, Channel, Serializing Objects.	04	10	

List of Practical:

Sr. No	Name of Practical	Hours
1.	Introduction to Java Environment and Netbeans	02
2.	Implementation of Java programs with classes and objects	04

3.	Implementation of Java programs to create functions, constructors with overloading and overriding	04
4.	Implementation of Java programs to demonstrate different access specifiers	04
5.	Implementation of Java programs using the concept of inner classes	02
6.	Implementation of Java programs for variables, data types, operators	04
7.	Implementation of Java programs for inheritance (single, multilevel, hierarchical)	04
8.	Implementation of Java programs to demonstrate the use of super keyword	02
9.	Implementation of Java programs for anonymous and abstract classes	02
10.	Implementation of Java programs for Interface	02
11.	Implementation of Java programs to demonstrate Java packages	02
12.	Implementation of Java programs to use arrays and string	06
13.	Implementation of Java programs for exception handling using all keywords (try, catch, throw, throws and finally)	04
14.	Implementation of Java programs to demonstrate the life cycle of thread	02
15.	Implementation of Java programs for the concepts of thread priority, synchronization, inter-thread communication	06
16.	Implementation of Applets, AWT and Web Servers	06
17.	Implementation of file handling operations	04

Text Book(s):

Title	Author/s	Publication
Core Java Volume I – Fundamentals	Cay Horstmann and Gray Cornell	Pearson

Reference Book(s):

Title	Author/s	Publication
Java the complete reference	Herbert Schildt	McGraw Hill
Thinking in Java	Bruce Eckel	Pearson
Learning Java	Patrick Niemeyer & Jonathan Knudsen	O'Reilly Media

Web Material Link(s):

* https://www.coursera.org/learn/object-oriented-java

Course Evaluation:
Theory:
* Continuous Evaluation consists of two tests each of 30 marks and 1 Hour of duration, which will be converted out of 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 per each practical and average of the same will be converted to 20 marks.
* Internal viva consists of 20 marks.

- Practical performance/quiz/test consists of 30 marks.
- External viva consists of 30 marks.

Course Outcome(s):

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

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

P P Savani University
School of Engineering

Department of Information Technology

Course Code: SEIT1010
Course Name: Introduction to Web Designing
Course Prerequisite(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	
0	2	0	1	0	0	50	0	0	0	50

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:

To help the learners to
- understand basic components of internet.
- learn basic web technologies such as HTML, JavaScript and CSS.
- develop basic knowledge of website designing.

Course Content:

Module No.	Content	Hours	Weightage in %
1.	Introduction to World Wide Web, Web Server, Website, Website design Principles, Planning the Website, Navigation, Introduction to HTML, CSS, Java Script	30	100%

List of Practical:

Sr. No	Name of Practical	Hours
1.	Implementation of HTML tags	12
2.	Designing Websites with basic CSS	4
3.	Designing of Responsive Website Designs using Java Script	4
4.	Development of mini project based on HTML, CSS and Java Script	10

Reference Book:

Title	Author/s	Publication
HTML Black Book	Steven Holzner	Dreamtech press

Web Material Link(s):
- https://www.w3schools.com/

Course Evaluation:
Practical:
- Continuous Evaluation consist of performance of practical which will be evaluated out of 10 for each practical and average of the same will be converted to 20 marks.
- Prepared project during practical hours will be evaluated as a part of final submission which carries 30 marks.

Course Outcome(s):
After the completion of the course, the student will be able to
- learn the fundamentals of website designing.
- apply knowledge of HTML, CSS, and JavaScript to build static and dynamic websites.

Department of Information Technology

Course Code: SEME1020
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	
0	2	0	1	0	0	50	0	0	0	50

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:
To help learners to
- learn about the safety measures required to be taken while using working in workshop.
- learn about how to select the appropriate tools required for specific operation.
- learn about different manufacturing technique for production out of the given raw material.
- understand applications of machine tools, hand tools, power tools and welding process.

Course Content:

Section I			
Module No.	Content	Hours	Weightage in %
1.	**Introduction:** 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 other Performing Operations.	-	-
3.	**Carpentry and Drilling Shop:** Introduction of Carpentry Shop; Preparation of Job as per Drawing including Marking and other Performing Operations.	-	-
4.	**Sheet Metal Shop:** Introduction of Sheet Metal Shop; Preparation of Job as per Drawing including Marking and other Performing Operations	-	-
5.	**Smithy Shop:** Introduction of Sheet Metal Shop; Preparation of Job as per Drawing including Marking and other Performing Operations	-	-
6.	**Introduction to Machine Tools:** Introduction and Demonstration of various Machine Tools like Lathe, Drilling, Grinding, Hack Saw Cutting etc.	-	-

7.	**Introduction to Welding & Plumbing:** Introduction and Demonstration of Welding process. Introduction and Demonstration of Plumbing Shop.	-	-

List of Practical:

Sr. No	Name of Practical	Hours
1.	Introduction and Demonstration of Safety Norms. Different Measuring Instruments.	02
2.	To Perform a Job of Fitting Shop.	06
3.	To Perform a Job of Carpentry Shop.	06
4.	To Perform a Job of Sheet Metal Shop.	06
5.	To Perform a Job of Black Smithy Shop.	04
6.	Introduction and Demonstration of Grinding & Hacksaw Cutting Machine.	02
7.	Introduction and Demonstration of Plumbing Shop & Welding Process.	04

Text Book(s):

Title	Author(s)	Publication
Elements of Workshop Technology Vol. I	Hajra Chaudhary S. K.	Media promoters & Publishers
Workshop Technology Vol. I and II	Raghuvanshi B.S.	Dhanpat Rai & Sons

Reference Book(s):

Title	Author(s)	Publication
Workshop Technology Vol. I	W.A.J. Chapman	Edward Donald Publication
Workshop Practices	H S Bawa	Tata McGraw-Hill
Basic Machine Shop Practice Vol. I, II	Tejwani V. K.	Tata McGraw-Hill

Web Material Link(s):

- http://nptel.ac.in/course.php

Course Evaluation:

Practical:

- Continuous Evaluation Consist of Performance of Practical which will be evaluated out of 10 for each practical/Tutorial and average of the same will be converted to 30 Marks.
- Internal Viva consists of 20 Marks.

Course Outcome(s):

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

- use various measuring instruments.
- know the importance of safety norms required in workshop.
- understand the application of various tools required for different operation.
- understand how to manufacture product from given raw material.
- know the use of machine tools, hand tools and power tools.

Department of Mechanical Engineering

Course Code: SEME1040
Course Name: Concepts of Engineering Drawing
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	
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
- know conventions and the methods of engineering drawing.
- interpret engineering drawings using fundamental technical mathematics.
- construct basic and intermediate geometry.
- improve their visualization skills so that they can apply these skills in developing new products.
- improve their technical communication skill in the form of communicative drawings.
- comprehend the theory of projection.

Course Content:

Section I			
Module No.	Content	Hours	Weightage in %
1.	**Introduction:** Importance of the course; Use of Drawing Instruments and Accessories; BIS – SP – 46; Lettering, Dimensioning and Lines; Representative Fraction; Types of Scales (Plain and Diagonal Scales); Construction of Polygons	07	15
2.	**Engineering Curves:** Classification and Application of Engineering Curves; Construction of Conics, Cycloidal Curves, Involutes and Spiral along with Normal and Tangent to each.	12	25
3.	**Principles of Projections:** Types of Projections; Introduction of Principle Planes of Projections. Projection of Points in all four Quadrants	04	10

Section II			
Module No.	Content	Hours	Weightage in %
1.	**Projection of Plane:** Projection of Planes (Circular and Polygonal) with inclination to one Referral Plane and two Referral Planes	07	15
2.	**Orthographic Projection:** Types of Projections: Principle of First and Third Angle Projection -Applications & Difference; Projection from Pictorial View of Object, View from Front, Top and Sides.	08	20
3.	**Isometric Projections and Isometric Drawing:** Isometric Scale, Conversion of Orthographic Views into Isometric Projection, Isometric View or Drawing.	07	15

List of Practical:

Sr. No	Name of Practical	Hours
1.	Introduction sheet (dimensioning methods, different types of line, construction of different polygon, divide the line and angle in parts, use of stencil, lettering)	04
2.	Plane scale and Diagonal scale	04
3.	Engineering curves	06
4.	Projection of Points and Plane	04
5.	Orthographic Projection	06
6.	Isometric Projection	06

Text Book(s):

Title	Author(s)	Publication
A Text Book of Engineering Graphics	P J Shah	S. Chand & Company Ltd., New Delhi
Engineering Drawing	N D Bhatt	Charotar Publishing House, Anand

Reference Book(s):

Title	Author(s)	Publication
Engineering Drawing	P.S.Gill	S. K. Kataria & sons, Delhi
Engineering Drawing	B. Agrawal & C M Agrawal	Tata McGraw Hill, New Delhi
Engineering Drawing made Easy	K. Venugopal	Wiley Eastern Ltd

Web Material Link(s):
- http://nptel.ac.in/courses/105104148/

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 Course Coordinator.
- End Semester Examination will consist of 60 marks.

Practical:
- Continuous Evaluation Consist of Performance of Practical which should be evaluated out of 10 for each practical Tutorial 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 performance of 15 Marks during End Semester Exam.

Course Outcome(s):
After completion of the course, the student will be able to
- know and understand "Drawing is a language of Engineers."
- interpret general assembly technical drawing.
- create traditions and the strategies for Engineering Drawing.
- evaluate basic and intermediate geometry.
- apply the knowledge of principles of projections.
- develop their hallucination/imagination skills.
- enhance their technical communication skill in the form of talkative drawings.

P P Savani University
School of Engineering

Department of Applied Science & Humanities

Course Code: SESH1210
Course Name: Applied Physics
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	
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
- prepare students for career in engineering where physics principles can be applied for the advancement of technology.
- think in core concept of engineering application by studying various topics involved in branch specific application.

Course Content:

Section I			
Module No.	Content	Hours	Weightage in %
1.	**Quantum Mechanics:** Wave-Particle Duality, De-Broglie Matter Wave, Phase and Group Velocity, Heisenberg Uncertainty Principle and its Applications, Wave Function and its Significance, Schrodinger's Wave Equation, Particle in One Dimensional Box	06	15
2.	**Acousic and Ultrasonic:** Introduction, Classification and Characterization of Sound, Absorption Coefficients, Sound Absorbing Materials, Sound Insulation, Ultrasonic, Properties of Ultrasonic, Generation of Ultrasonic Applications of Ultrasonic.	05	10
3.	**Solid State Physics** Introduction, Lattice Points and Space Lattice, Unit Cells and Lattice Parameters, Primitive Cell, Crystal Systems. The Bravais Space Lattices. Miller Indices, X-Ray Properties, Diffraction and Bragg's Law, Bragg's X-Ray Spectrum	06	10
4.	**Nanophysics** Nanoscale, Surface to Volume Ratio, Surface Effects on Nanomaterials, Quantum Size Effects, Nanomaterials and	06	15

Module No.	Content	Hours	Weightage in %
	Nanotechnology, Unusual Properties of Nanomaterials, Synthesis of Nanomaterials, Applications of Nanomaterials		
Section II			
Module No.	Content	Hours	Weightage in %
1.	**Non Linear Optics:** Laser, Spontaneous and Stimulated Emission of Light, Applications of Laser. Fundamental Ideas about Optical Fibre, Advantages of Optical Fibre of Optical Fibre, Applications of Optical Fibre.	07	12
2.	**DC and AC Circuits Fundamentals** Introduction of Electrical Current, Voltage, Power and Energy; Sources of Electrical Energy Inductor and Capacitor, Fundamental Laws of Electric Circuits – Ohm's Law and Kirchhoff's Laws; Analysis of Series, Parallel and Series-Parallel Circuits. Alternating Voltages and Currents and their Vector and Time Domain Representations, Average and Rms Values, From Factor, Phase Difference, Power and Power Factor, Purely Resistive Inductive and Capacitive Circuits, R-L, R-C, R-L-C Series Circuits, Impedance and Admittance, Circuits in Parallel, Series and Parallel Resonance.	08	25
3.	**Electronics:** Semiconductors, Intrinsic and Extrinsic Semiconductor Advantages of Semiconductor Devices, Diodes, Transistors, Types of Bipolar Junction Transistor, Unijunction Junction Transistor, FET and MOSFETS.	07	13

List of Practical:

Sr. No.	Name of Practical	Hours
1.	Volt-Ampere Characteristics of Light Emitting Diode	02
2.	Volt-Ampere Characteristics of Zener Diode	02
3.	To determine value of Planck's constant (h) using a photovoltaic cell	02
4.	To determine the Hall coefficient (R) and carrier concentration of a given material (Ge) using Hall effect.	04
5.	To study the Capacitors in series and parallel DC circuit.	04
6.	To determine velocity of sound in liquid using Ultrasonic Interferometer	04
7.	To study RLC Series circuit.	02
8.	To determine numerical aperture of an optical fiber.	02
9.	Determination of Young's Modulus of given material.	02
10.	Analysis of errors.	02

Text Book(s):

Title	Author/s	Publication
Concept of the Modern Physics	A. Beiser	Tata McGraw-Hill Education
Basic electrical engineering	Kothari and Nagrath	Tata McGraw-Hill Education
Quantum Mechanics	P.M. Mathew, K. Venkatesan	Tata McGraw-Hill Education
Waves and Acoustics	Pradipkumar Chakrabarti Satyabrata Chawdhary	New Central Book Agency
Lasers and Nonlinear Optics	G.D. Baruah	Pragati Prakashan
Solid State Physics: Basic Electronics:	S.O. Pillai	New Age Internation Publishers
Basic Electronics for Scientists and Engineers	Dennis L. Eggleston	Cambridge University Press

Web Material Link(s):

- http:/nptel.ac.in/course.php

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 Consist 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 of 20 marks during End Semester Exam.
- Viva/Oral performance of 10 marks during End Semester Exam.

Course Outcome(s):

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

- use appropriate mathematical techniques and concepts to obtain quantitative solutions to problems in physics & electrical.
- perform a literature search, to make use of appropriate computational of laboratory skill, and to make an effective written or oral presentation of the results of the project.

Center for Skill Enhancement and Professional Development

Course Code: SEPD1020
Course Name: Communication Skills
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	
01	02	00	02	50	00	20	30	--	--	100

CE: Continuous Evaluation, ESE: End Semester Exam

Objective(s) of the Course:
To help learners to
- hone basic communication skills by exposing them to the key communication techniques.
- improvise comprehension and expressional skills which are required for personal, social, academic and professional environment.
- sharpen communication skills with reference to organizational structure.
- show the importance of team work and give practice in group communication with reference to group dynamics.

Course Content:

Module No.	Content	Hours	Weightage in %
1.	**Introduction to Communication Skills** • Concept and Process of Communication • Types of Communication • Principles of Effective Communication • Barriers to Communication	05	33
2.	**Interpersonal Organizational Communication** • Styles and Flows of Communication • Essentials of Organizational Communication • Kinesics, Proxemics and Chronemics	03	20
3.	**Team/ Group Dynamics and Leadership** • Types of Groups and Essentials of Group Work and Networking • Concept and Types of Leadership • Traits of an Effective Leader	03	20
4.	**Presentation Skills** • Modes, Means and Purposes of Presentation • Audience Analysis and Content Organization • Visual aids and Nuances of Delivery • Non Verbal Cues for Effective Presentation	04	27

List of Practical:

Sr. No	Name of Practical	Hours
1.	Introduction to Communication: An Ice Breaker	02
2.	Verbal/ Non-Verbal Communication Pros and Cons	02
3.	Principles of Communication	02
4.	Barriers to Communication	02
5.	Interpersonal Communication	02
6.	Organizational Communication	02
7.	Assertive Vs Aggressive Communication	02
8.	Group Dynamics: A Decision-Making Activity	02
9.	Group Dynamics Working together to achieve organizational vision	02
10.	Difference between Group Discussion and Debate	02
11.	Leadership: Holding a diverse Group Together	02
12.	Presentation Skills; Video Session	02
13.	Presentations by the student: Self-Peer-teacher assessment	02
14.	Presentations by the student: Self-Peer-teacher assessment	02
15.	Presentations by the student: Self-Peer-teacher assessment	02

Text Book(s):

Title	Author(s)	Publication
Practical Techniques to Develop Communication Skills	Parul Popat & Kaushal Kotadia	Pothi Prakashan, 2015

Reference Book(s):

Title	Author(s)	Publication
Communication Skills	Parul Popat & Kaushal Kotadia	Pearson, 2015
Communication Skills, Second Edition	Sanjay Kumar, Pushp Lata	Oxford University Press,2015
Communication Skills for Engineers	Sunita Mishra	Pearson, 2011
Effective Interpersonal and Team Communication Skills for Engineers	Clifford Whitcomb, Leslie E. Whitcomb	John Wiley & Sons, 2012

Web Material Link(s):
- http://www.mindtools.com/page8.html
- http://techpreparation.com/soft-skills.htm?gclid=CJf34fyQv5wCFdMtpAodjjX_tA
- http://lorien.ncl.ac.uk/ming/Dept/Tips/present/comms.htm

Course Evaluation:
Theory:
- Continuous Evaluation consists two tests each of 30 marks and average of the same will be converted to 30 marks.
- There will be a submission consisting 10 marks as per the guidelines of course coordinator.
- Faculty Evaluation consists of 10 marks as per the guidelines provided by the Course Coordinator.

Practical:
- Continuous Evaluation consists of Performance of Practical which should be evaluated out of 10 for each practical.
- Internal viva consists of 10 marks.
- Practical performance/quiz/drawing/test of 15 marks during End Semester Exam.
- Viva/Oral performance of 15 marks during End Semester Exam.

Course Outcome(s):

After completion of the course, the student will be able to
- follow the process of communication and its components in organizational context.
- express themselves and to participate in the classroom discussions and other such academic activities.
- comprehend whatever they receive from Informal Interactions with the family, teachers and friends; and from Formal Communications taking Place in Lectures, Laboratories and the like.
- enhance the teamwork and collaborative attitude.
- communicate effectively using suitable styles and techniques.
- able to participate in the group discussions and other such academic or academic support activities.
- use language effectively with reference to communication in groups and group behaviour.