VISHNU INSTITUTE OF TECHNOLOGY:: BHIMAVARAM
(Autonomous)
Approved by AICTE, Accredited by NAAC-A[++] , NBA& Affiliated to JNTUK, Kakinada

Department of Basic Science
(R-20 Regulations)
Syllabus: I B.Tech-I Semester
(Common to all Branches except CS&BS)

Course Title: Mathematics-I (Linear Algebra & Calculus)

L	T	P	C
3	0	0	3

Course Objectives:

To enable the students to

1. know the importance of matrices to solve linear equations using matrices
2. identify and solve various differential equations using corresponding methods
3. apply methods of solving higher order linear differential equations
4. comprehend the theory of maxima and minima of a function of two variables.
5. analyze thetechniques of tracing the curves and evaluate the lengths, areas, volumes of objects using multiple integrals

UNIT –I: Matrices - Linear system of equations

Introduction, Different types of matrices, Rank-Echelon form - Normal form, Solution of a System of Linear Equations – Non-homogeneous and homogeneous equations, Gauss- Jordan method, Gauss – Elimination Method, LU Decomposition,Applications of electric circuits.

UNIT- II: Eigen values - Eigen vectors

Eigen values - Eigen vectors – Properties– Cayley-Hamilton Theorem - finding inverse and power of a matrix by usingCayley-Hamilton theorem, Diagonalization of matrices, Spectral Decomposition,Singular Value Decomposition and Principal Component Analysis.

UNIT –III: Differential Equations

Differential equations of first order and first degree–Exact and Non– exactdifferential equations, Linear and Bernoulli differential equations.Orthogonal trajectories,Newton's Law of cooling, Law of natural growth and decay

Higher order homogenous and non - homogenous linear differential equations with constant coefficients - Particular integrals for the functions of type e^{ax}, $\sin(ax+b)$,$\cos(ax+b)$, Polynomial of x , $e^{ax} V(x)$, L-C-R Circuits.

UNIT – IV: Partial Differentiation

Functions of several variables- Partial derivatives, Total derivative, Chain rule, Change of variables, Jacobians, Functional dependence.Generalized Mean Value theorem –Taylor's theorem and Maclaurin's

theorem (without proof) for a function of two variables, Maxima and Minima of functions of two variables, Lagrange's method of undetermined multipliers

UNIT –V: Multiple Integrals and Applications

Review of Curve tracing-Cartesian-Polar and Parametric curves.

Multiple integrals - double integrals - change of variables (Cartesian and Polar coordinates), Change of order of integrationand Evaluation of triple integrals, computing area and volume.

Text Books:

1. B. S. Grewal, Higher Engineering Mathematics, 42nd Ed., Khanna Publishers, New Delhi, 2012
2. Erwin .Kreyszig,Advanced Engineering Mathematics,9th Ed., Wiley, 2012

References:

1. T.K.V.Iyengar, B. Krishna Ghandhi, S. Ranganathan and M.V.S.S.N.Prasad, Engineering Mathematics, Volume-I, 12th Ed., S. Chand Publishers, 2014
2. B. V. Ramana, Engineering Mathematics, 4th Ed., Tata McGraw Hill, New Delhi, 2009
3. D. S. Chandrashekharaiah, Engineering Mathematics, Volume 1, Prism Publishers, 2010
4. N.P. Bali and Manish Goyal, A text book of Engineering Mathematics, Laxmi Publications, reprint, 2008.

Course Outcomes:

After completing this course, the students will be able to

1. solvelinear system of equations in engineering problems
2. find Eigen-values and Eigenvectors of a matrix in engineering studies.
3. model engineering problems as differential equations and solve analytically. .
4. find out local /global optimum of functions of several variables.
5. compute areasand volumes by integrals

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Department of Basic Science
Syllabus: I B.Tech-I Semester
(R-20 Regulations)
(Common toCSE, IT, EEE, AI & DS)

Course Title:Applied Chemistry

L	T	P	C
3	0	0	3

Course Objectives:

1. To gain the knowledge on Polymer based materials in household appliances, aerospace and automotive industries.

2. To learn the basic principles and applications of Electrochemistry.

3. Advanced Analytical instrumental techniques are introduced for material characterization.With the increase in demand for power and also with depleting sources of fossil fuels, the demand for alternative sources of fuels is increasing. Some of the prospective fuel sources are introduced.

4. Understanding of crystal structures and preparation of semiconductors and insulators.

5. A wide variety of materials are coming up; some of them have excellent engineering properties and a few of these materials are introduced.

UNIT- I: Polymer Chemistry

Introduction to polymers, functionality of monomers, co-polymerization, Stereospecific polymerization with specific examples.

Plastics - Thermoplastics and Thermosettings, Preparation, Properties and Applications of – Bakelite, Urea-Formaldehyde, Nylon-6,6, Carbon fibres.

Elastomers–Buna-S, Buna-N–Preparation, Properties and Applications.

Conducting polymers - polyacetylene, polyaniline, polypyrroles – Mechanism of conduction and Applications.

UNIT -II: Electrochemistry and Applications

Electrodes –Reference electrodes (Hydrogen electrode and Calomel electrode), Electrochemical cell, Nernst equation.Concept of pH, pH meter and applications of pH metry, Potentiometry- Potentiometric titrations (Redox titrations), Concept of Conductivity, Conductivity cell, Conductometric titrations (acid-base titrations), Primary cells – Dry cell - Zinc-air battery, Secondary cells – Lead acid battery, Lithium-ion batteries- working of the batteries including cell reactions, and button cells.

Fuel cells - Hydrogen-Oxygen and Methanol-Oxygen fuel cells – working of the cells.

UNIT - III: Instrumental Methods and Non-Conventional Energy Sources

Part-A: **Instrumental Methods**

Electromagnetic Spectrum. Absorption of radiation: Beer-Lambert's law - Principles of UV-Visible, Infrared (IR) and Nuclear Magnetic Resonance (NMR) spectroscopy.

Basic concepts of Thin Layer Chromatography (TLC), Gas Chromatography (GC) and High-Performance Liquid Chromatography (HPLC), Separation and purification of mixture of compounds.

Part-B: **Non-Conventional Energy Sources**

Introduction – Renewable and Non –Renewable energy sources - Solar Energy- Introduction, Applications of Solar energy – Photovoltaic cell: design, working and its importance. Hydropower includes setup a Hydropower plant (schematic diagram), Geo-Thermal energy: Introduction-schematic diagram of a Geothermal power plant, Tidal power - Introduction- Design and working, Biomass energy.

UNIT- IV: Solid State Chemistry

Types of solids – Crystal defects- Frenkel and Schottky defects – Spinel and Inverse spinel.

Hall Effect and Applications.

Semiconductors:Preparation of pure semiconductors by Zone refining, Distillation and Czochralskicrystal pulling technique, Doping- Epitaxy, Diffusion and Ion-implantation technique- Intrinsic and Extrinsic semiconductors - Applications.

Insulators*:* Electrical Insulators and their Applications.

UNIT -V: Material Chemistry

Nano materials –Introduction- Top-down and Bottom- up approaches, Sol-gel method. Characterization by BET and TEM methods. Carbon nano tubes and fullerenes - Types, Preparation (Arc discharge Laser ablation and ChemicalVapour Deposition methods) Properties and Applications.

Liquid crystals - Introduction – Types – Applications.

Superconductors - Type-I & Type-II, Properties &Applications.

Green chemistry- Principles and Applications.

Text Books:

1. Engineering Chemistry by Jain and Jain; Dhanpat Rai Publication Co.
2. Engineering Chemistry by Shikha Agarwal; Cambridge University Press, 2015 edition.

References:

1. Engineering Chemistry by Prasanth Rath, Cengage Learning, 2015 edition.
2. A text book of Engineering Chemistry by S. S. Dara; S. Chand & Co Ltd., Latest Edition.
3. Skoog and West, Principles of Instrumental Analysis, 6/e, Thomson, 2007.
4. A text book of Engineering Chemistry bySashiChawla, Dhanpat Rai & Co. 2017

Course Outcomes:

After completing the course,students will be able to

1. Recall the information related to polymers and their application.(Remembering)
2. Distinguish between different parts in electrochemical cell, batteries and fuel cells. (Analyzing)
3. Understand about the different analytical techniques and its applications.(Understanding)
   Design the technologies related to renewable energy sources. (Creating)
4. Understand the conductivity phenomenon and applications of solids. (Understanding)
5. Choose the materials like nano materials, liquid crystals, superconductors, and green synthetic methods to solve the Engineering problems. (Applying)

DEPARTMENT OF BASIC SCIENCE

Year/Semester	I.B.Tech-I Sem	L	T	P	C
Regulation Year	R-20 2020-21	3	0	0	3
Name of the Subject	**Communicative English**				
Branch	All Branches (except CSBS)				

SYLLABUS

Introduction

The course is designed to train students in receptive (listening and reading) as well as productive and interactive (speaking and writing) skills by incorporating a comprehensive, coherent and integrated approach that improves the learners' ability to effectively use English language in academic/ workplace contexts. The shift is from learning about the language to using the language. On successful completion of the compulsory English language course/s in B.Tech., learners would be confident of appearing for international language qualification/proficiency tests such as IELTS, TOEFL, or BEC, besides being able to express themselves clearly in speech and competently handle the writing tasks and verbal ability component of campus placement tests. Activity based teaching-learning methods would be adopted to ensure that learners would engage in actual use of language both in the classroom and laboratory sessions.

Course Objectives

Facilitate effective listening skills for better comprehension of academic lectures and English spoken by native speakers

Focus on appropriate reading strategies for comprehension of various academic texts and authentic materials

Help improve speaking skills through participation in activities such as role plays, discussions and structured talks/oral presentations

Impart effective strategies for good writing and demonstrate the same in summarizing, writing well organized essays, record and report useful information

Provide knowledge of grammatical structures and vocabulary and encourage their appropriate use in speech and writing.

Methodology:

1. The classes are to be learner-centered where the learners are to read the texts to get a comprehensive idea of those texts on their own with the help of the peer group and the teacher.
2. Integrated skill development methodology has to be adopted with focus on individual language skills as per the tasks/exercise.
3. The tasks/exercises at the end of each unit should be completed by the learners only and the teacher intervention is permitted as per the complexity of the task/exercise.

4. The teacher is expected to use supplementary material wherever necessary and also generate activities/tasks as per the requirement.
5. The teacher is permitted to use lecture method when a completely new concept is introduced in the class.

(R-20 Regulations)
Detailed Textbook:
Infotech English by Maruthi Publications

Non-Detailed Textbook:
Wings of Fire: APJ Abdul Kalam by University Press

Unit 1   (10 periods)

Detailed: A Drawer Full of Happiness
Non-detailed: APJ Abdul Kalam's Wings of Fire 1-5 Chapters

Reading: Skimming text to get the main idea. Scanning to look for specific pieces of information.

Reading for Writing: Beginnings and endings of paragraphs - introducing the topic, summarizing the main idea and/or providing a transition to the next paragraph.

Writing: Writing **S**entences with proper word order - Basic Sentence Structures

Vocabulary: Technical vocabulary from across technical branches (20) GRE Vocabulary (20) Antonyms and Synonyms, Word applications, Verbal reasoning and sequencing of words.

Grammar: Content words and function words; word forms: verbs, nouns, adjectives and adverbs; nouns: countables and uncountables; singular and plural, pronouns, basic sentence structures; simple question form - wh-questions; word order in sentences.

Unit 2   (10 periods)
Detailed: Nehru's letter to his daughter Indira on her birthday
Non-detailed: APJ Abdul Kalam's Wings of Fire 6-10 Chapters

Reading: Identifying sequence of ideas; recognizing verbal techniques that help to link the ideas in a paragraph together.

Writing: Paragraph writing (specific topics) using suitable cohesive devices; linkers, sign posts and transition signals; mechanics of writing - punctuation, capital letters. .

Vocabulary: Technical vocabulary from across technical branches (20 words). GRE Vocabulary Analogies (20 words) Antonyms and Synonyms, Word applications

Grammar: Use of articles and zero article; prepositions

Unit 3   (10 periods)

Detailed: Stephen Hawking-Positivity 'Benchmark'

Non-detailed: APJ Abdul Kalam's Wings of Fire 10-15 Chapters

Reading: Reading a text in detail by making basic inferences - recognizing and interpreting specific context clues; strategies to use text clues for comprehension. Critical reading.

Reading for Writing: Summarizing - identifying main idea/s and rephrasing what is read; avoiding redundancies and repetitions.

Vocabulary: Technical vocabulary from across technical branches (20 words). GRE Vocabulary (20 words) Antonyms and Synonyms, Word applications, Association

Grammar: Verbs - tenses; Subject-verb agreement

Unit 4   (10 periods)

Detailed: Liking a Tree, Unbowed: Wangari Maathai's Biography

Non-detailed: APJ Abdul Kalam's Wings of Fire 16-20 Chapters

Reading: Studying the use of graphic elements in texts to convey information, reveal trends/patterns/relationships, communicative process or display complicated data.

Reading for Writing: Information transfer; describe, compare, contrast, identify significance/trends based on information provided in figures/charts/graphs/tables.

Vocabulary: Technical vocabulary from across technical branches (20 words) GRE Vocabulary (20 words) Antonyms and Synonyms, Word applications

Grammar: Quantifying expressions - adjectives and adverbs; comparing and contrasting; degrees of comparison,

Unit 5   (10 periods)

Detailed: Stay Hungry-Stay foolish from "Infotech English", Maruthi Publications

Non-detailed: APJ Abdul Kalam's Wings of Fire 21-24 Chapters by University Press

Reading: Reading for comprehension. RAP Strategy Intensive reading and Extensive reading techniques

Reading for Writing: Letter writing, E mail writing, email etiquette

Vocabulary: Technical vocabulary from across technical branches (20 words) GRE Vocabulary (20 words) Antonyms and Synonyms, Word applications

Grammar: Direct and indirect speech, reporting verbs for academic purposes, Active Voice- Passive Voice; editing short texts – identifying and correcting common errors in grammar and usage (articles, prepositions, tenses, subject verb agreement and conjunctions)

 Course Outcomes

   At the end of the course, the learners will be able to

➢ Appreciate a piece of prose; employ suitable strategies for skimming and scanning to get the
   general idea of a text; recognize paragraph structure and formulate sentences using proper
   grammatical structures and correct word forms of nouns and pronouns and GRE Words

➢ Study a piece of prose; write well structured paragraphs and understand applying cohesive devices and use articles and prepositions accurately and learn good vocabulary

➢ Analyze a text in detail and summarize and employ verbs, tenses and subject verb agreement appropriately; apply vocabulary and word associations

➢ Understand a text, and learn and apply information transfer and apply the use of adjectives and adverbs and vocabulary

➢ Interpret ideas from reading comprehension and write formal letters and emails, use voice and reported speech properly and edit short texts by correcting common errors and learn vocabulary

Reference Books

- Bailey, Stephen. *Academic writing: A handbook for international students*. Routledge, 2014.
- Chase, Becky Tarver. *Pathways: Listening, Speaking and Critical Thinking.* Heinley ELT; 2nd Edition, 2018.
- Skillful Level 2 Reading & Writing Student's Book Pack (B1) Macmillan Educational.
- Hewings, Martin. *Cambridge Academic English (B2)*. CUP, 2012.

Sample Web Resources

Grammar/Listening/Writing

1-language.com

http://www.5minuteenglish.com/

 https://www.englishpractice.com/

Grammar/Vocabulary

English Language Learning Online

http://www.bbc.co.uk/learningenglish/

http://www.better-english.com/

http://www.nonstopenglish.com/

https://www.vocabulary.com/

BBC Vocabulary Games

Free Rice Vocabulary Game

Reading

https://www.usingenglish.com/comprehension/

https://www.englishclub.com/reading/short-stories.htm

https://www.english-online.at/

Listening

https://learningenglish.voanews.com/z/3613

http://www.englishmedialab.com/listening.html

 Speaking

https://www.talkenglish.com/

BBC Learning English – Pronunciation tips

Merriam-Webster – Perfect pronunciation Exercises

All Skills

https://www.englishclub.com/

http://www.world-english.org/

http://learnenglish.britishcouncil.org/

 Online Dictionaries

Cambridge dictionary online

MacMillan dictionary

Oxford learner's dictionaries

Year/Semester	I B. Tech/I Sem	L	T	P	C
Regulation Year	2020-21	3	0	0	3
Subject	Computational Thinking and Programming				
Branch	CSE,IT,ECE, AI&DS,EEE,CE,ME				

Course Objectives:

1. To teach problem solving through Algorithms and Flowcharts
2. To elucidate problem solving through Python programming language
3. To train in the development of solutions using modular concepts
4. To explain the role of data structures in programming
5. To introduce object oriented programming paradigm through Python

UNIT – I: Knowing the Computer

Definition and Block Diagram of a Computer. Basic parts of a computer (Memory, CPU, Input, and Output), Memory hierarchy, Circuits and Logic, Hardware vs Software, Representation of Data in memory (integer (including negative), floating points etc. to text, images, audio and video), Principle of Abstraction, Operating System, Language Hierarchy - Machine Language to High Level Language, Compiler, Interpreter, The Command Line Interface (basic Linux commands)

UNIT – II: Computational Thinking and Introduction to Python

Simple logic building through flowcharting. Flowchart symbols, conditional and repetition blocks. Computational Thinking, Algorithm, Pseudocode, Time/Space complexity. Only Big O notation.

Basic structure of a Python program, Elements of Python programming Language: token, literals, identifiers, keywords, expression, type conversions, Numbers, Variables, Input/Output statements, basic data types. Operators and their types and precedence, expressions. Control structures in Python - conditionals and loops

UNIT – III: Python Data Structures and Modularization

List and List Operations, Using Lists to represent Matrices, Strings, String operations, Tuples, Dictionaries, Sets, Iterators and generators, comprehensions.

Basic math functions, User defined Functions, parameters to functions, positional, keyword and default arguments, Lambda Functions, recursion. Packages, modules and namespaces.

UNIT-IV: File Handling

Files, Types of Files, Creating and Reading Text Data, File Methods to Read and Write Data, Reading and Writing Binary Files, The Pickle Module, Reading and Writing CSV Files, Python os and os.path Modules

UNIT – V: Object Oriented Programming

Object Oriented Design, Classes and Objects, Polymorphism, Abstraction, Inheritance, Encapsulation, Constructors, Function and operator overloading, Exception Handling.

Course Outcomes: Student should be able to
1. Understand the working principles of various components of a computer

2. Develop computational thinking and be able to use Python constructs to solve basic problems

3. Understand modularization and data structures concepts in Python

4. Apply file handling concepts in problem solving

5. Solve Real world problems by applying Object Oriented Concepts

Text Book:

1. Think Python: How to Think Like a Computer Scientist , Allen B. Downey, 2nd Edition (https://www.greenteapress.com/thinkpython/thinkCSpy.pdf)

Reference Books:

1. Core python programming, W Chun PHI (http://emixam.sevla.free.fr/books/2.PythoProg_softarchive.net.pdf)
2. Python programming a modern approach, Vamsi Kurama, pearson

Web Resources:

1. http://www.ict.ru.ac.za/Resources/cspw/thinkcspy3/thinkcspy3.pdf
2. https://snakify.org

Branch: CSE, IT, AI&DS & AIML   I Year – I Semester   Regulation: R20
Sub. Title: ELEMENTS OF ELECTRICAL & ELECTRONICS ENGINEERING

Sub.Code:

L	T	P	C
3	0	0	3

Preamble:

This course covers the topics related to analysis of various electrical circuits, operation of various electrical machines, electronic components to perform well in their respective fields.

Learning Objectives:
- ➢ To learn the basic principles of electrical law's and analysis of DC circuits and AC circuits.
- ➢ To understand the principles of operation and characteristics of DC machines.
- ➢ To understand the principle of operation of Transformer and Induction motor.
- ➢ To study the operation of PN junction diode, half wave, full wave rectifiers and OP-AMPs.
- ➢ To learn the operation of PNP and NPN transistors and various amplifiers.

UNIT - I

DC Circuits: Basic definitions, Electrical circuit elements (R - L and C), Ohm's-Law, Kirchhoff laws, Series and parallel connection of resistances with DC excitation, Mesh Analysis and Nodal Analysis.

AC Circuits: Representation of sinusoidal waveforms, peak and RMS values, phasor representation, real power, reactive power, apparent power, power factor. Introduction to three phase, phase sequence, relation between line and phase voltages and currents.

UNIT - II

DC Machines: Principle and operation of DC Generator, EMF equation, Applications. Principle and operation of DC Motor, Back EMF, Types of DC machines, Speed- Torque Characteristics of DC Motors, Speed control of DC Motors, Applications.

UNIT - III

AC Machines: Classification of AC machines, Principle and operation of 3-phase Induction Motor and 3-phase Synchronous Generator.

Transformers: Principle of operation and construction of Single Phase Transformer, OC and SC test on transformer, efficiency

UNIT IV

Rectifiers & Linear ICs: PN junction diodes, Applications -Half wave and Bridge rectifiers. Characteristics of Operation Amplifiers (OP- AMPs), Applications of OP-AMPs -Inverting, Non-Inverting, Integrator and Differentiator.

UNIT V

Transistors : PNP and NPN junction transistor, transistor as an amplifier, Transistor Configurations-CE,CB,CC configurations, CE Amplifier Characteristics, Application of Transistors.

Course Outcomes:

- Able to analyze the various DC networks and AC circuits.
- Able to understand the operation and Applications of DC Generators and DC Motor.
- Able to analyze the performance of Transformer and Induction motor and Synchronous generator.
- Able to analyze the operation of half wave, full wave rectifiers and OP- AMPs.
- Able to explain the operation of transistors and its applications.

TEXT BOOKS:

1. Electronic Devices and Circuits, R.L. Boylestad and Louis Nashelsky, 10th edition, PEI/PHI2006
2. Theory and performance of Electrical Machines ,J.B.Gupta,3rd edition,Kataria.S.K& Sons
3. Electrical Circuit Theory and Technology by John Bird, 6th Edition Routledge Taylor & Francis Group

REFERENCE BOOKS:

1. Basic Electrical Engineering by M.S.Naidu and S.Kamakshiah,TMH Publications.
2. Fundamentals of Electrical Engineering by Rajendra Prasad, PHI Publications, 2nd edition.
3. Basic Electrical Engineering by Nagsarkar, Sukhija, Oxford Publications, 2nd edition.
4. Industrial Electronics by G.K. Mittal, PHI.
5. Electrical Technology by Surinder Pal Bali, Pearson Publications.
6. Principles of Basic Electrical Engineering by T.N. Nagsarkar, M.S. Sukhija, Oxford University Press.

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Department of Basic Science
Syllabus: I B.Tech-I Semester

(R-20 Regulations)

(Common to CSE, IT, EEE, AI & DS)

Course Title:Applied Chemistry Lab

L	T	P	C
0	0	3	1.5

10 Out of 16

1. Trial experiment - Determination of HCl using standard Na_2CO_3 solution.

2. Determination of alkalinity of a sample containing Na_2CO_3 and NaOH.

3. Determination of $KMnO_4$ using standard Oxalic acid solution.

4. Estimation of MnO2 in Pyrolusite.

5. Determination of Copper using standard $K_2Cr_2O_7$ solution.

6. Determination of temporary and permanent hardness of water using standard EDTA solution.

7. Determination of Vitamin – C.

8. Determination of P^H of the given sample solution using P^H meter.

9. Conductometric titration between strong acid and strong base.

10. Potentiometric titration between strong acid and strong base.

11. Estimation of copper by Colorimetry.

12. Photo Chemical Reduction of Ferric Salt (Blue-Printing).

13. Adsorption of acetic acid on charcoal.

14. Determination of rate of corrosion.

15. Preparation of a polymer.

16. Thin layer chromatography.

References:
1. A Textbook of Quantitative Analysis, Arthur J. Vogel.
2. Dr. JyotsnaCherukuri (2012) Laboratory Manual of Engineering chemistry-II, VGSTechno Series.
3. Chemistry Practical Manual, Lorven Publications.
4. Practical Engineering Chemistry, K. Mukkanti (2009) B.S. Publication.

Outcomes:
The students entering into the professional course have practically very little exposure to lab classes. The experiments introduce volumetric analysis; redox titrations with different indicators; EDTA titrations; then they are exposed to a few instrumental methods of chemical analysis. Thus, at the end of the lab course, the student is exposed to different methods of chemical analysis and use of some commonly employed instruments. They thus acquire some experimental skills.

Year/Semester	I B. Tech/I Sem	L	T	P	C
Regulation Year	2020-21	0	0	3	1.5
Subject	Computational Thinking and Programming Lab				

Laboratory Experiments

Objectives:
- Get acquainted with fundamentals of writing **Python** scripts.
- Master core **Python** scripting elements by solving more number of problems
- Able to identify right data structure to solve the problem
- Design **Python** functions to facilitate code reuse.
- Gaining familiarity with Python file I/O
- Getting Familiarity with Object Oriented Concepts

Week 1-3
  ➢ Design algorithms and flowcharts for given problems
  ➢ Python programs on decision and loop control statements
      - Whether the given number is even or odd
      - Maximum of three numbers
      - Sum of digits, Palindrome
      - Factorial of a number,
      - GCD of given numbers
      - Sum of first n natural numbers
      - Evaluate Cosine and Sine Series etc.

Week 4-6
  ➢ Exercise programs on lists and functions
      - Finding the sum and average of given numbers using lists.
      - To display elements of list in reverse order.
      - Finding the minimum and maximum elements in the lists.
      - Using functions to calculate power, factorial etc
      - Passing lists as function arguments
      - Pass by object
      - Recursion

Week 7-9
  ➢ Exercise programs on Strings.
      - Count the number of characters, number of vowels etc in the given line of text etc
      - Palindrome Check
      - Reverse words in a line of text
      - Finding the occurrences of substring in the main string
  ➢ Exercise programs on Tuples, Dictionaries

Week 10-12
  ➢ Exercise programs on file handling covering creating file, writing content into the file and updating the file content etc.
  ➢ Python programs on Object Oriented Programming concepts:
      - Creating a Class with variables and methods

- Class inheritance
- Constructors
- Exception handling

Year/Semester	I B. Tech-I Sem	L	T	P	C
Regulation Year	R-20 2020-21	0	0	3	1.5
Name of the Subject	English Communication Skills Lab				
Branch	All Branches (except CSBS)				

English Language Communication Skills Lab

Course Objectives

1. To sensitize the students nuances of English speech sounds.

2. To bring about a consistent accent and intelligibility in students' pronunciation of English by

   providing an opportunity for practice in speaking.

3. To improve the fluency in spoken English in different contexts.

4. To demonstrate the synchronization of verbal and non verbal communication.

5. To speak with clarity and confidence.

6. To enrich the persuasive skills.

MODULE – I

Listening: Listening to short audio texts and identifying the topic, context and specific pieces of information to answer a series of questions both in speaking and writing.

Speaking: Asking and answering general questions on familiar topics such as home, family, work, studies and interests. Self introduction and introducing others.

Non Verbal Communication

Pronunciation: Introduction to Phonetics-Sounds of English-Phoneme

MODULE – II

Listening: Answering a series of questions about main idea and supporting ideas after listening to audio texts, both in speaking and writing.

Functional English: Greetings and leave taking, Complaining and Apologizing.

Pronunciation: Vowels and Consonants**,** Past tense markers, Plural markers

MODULE – III

Listening: Listening for global comprehension and summarizing what is listened to, both in speaking and writing.

Functional English: Permissions, Requesting, Inviting.

Pronunciation: Syllable, Word Stress: Weak and Strong forms, Stress in compound words, Contrastive Stress

MODULE– IV

Speaking: Just a Minute **(**JAM)

Functional English Asking for and giving Information/Directions; Suggesting/Opinion giving.

Pronunciation: Rhythm & Intonation

MODULE– V

Functional English: Dialogues/Role Plays

Speaking: Formal oral presentations on topics from Science and Technology - with the use of PPT slides.

Pronunciation: Accent Neutralization

INFRASTRUCTURE:

1. 60 computer systems for a class of 60 students.
2. LAN facility and English Language Software for self-study by learners.
3. Audio System
4. Projector

SYSTEM REQUIREMENT: Hardware Component

5. P – IV Processor
6. Speed – 2.8 GHZ
7. RAM – 512 MB minimum
8. Hard Disk – 80 GB
9. Headphones of high quality

SUGGESTED SOFTWARE

1. Cambridge Advanced Learners' English Dictionary with CD.
2. Grammar Made Easy by Darling Kindersley
3. Punctuation Made Easy by Darling Kindersley
4. Clarity Pronunciation Power – Part I
5. Clarity Pronunciation Power – part II
6. Oxford Advanced Learner's Compass, 7th Edition
7. DELTA's key to the Next Generation TOEFL Test: Advanced Skill Practice.
8. MELL - K Van Solutions Software
9. TOEFL & GRE (KAPLAN, AARCO & BARRONS, USA, Cracking GRE by CLIFFS)
10. English in Mind (Series 1-4), Herbert Puchta and Jeff Stranks with Meredith Levy, Cambridge
11. English Pronunciation in Use, Cambridge University Press
12. Technical Communication, OUP
13. Communication Skills, OUP

COURSE OUTCOMES

The students will be able to:

- CO1: Understand Non Verbal Communication and Identify the topic, the context, specific questions and overall idea by listening to short audio texts and answering a series of questions and will also be able to introducing themselves and others

- CO2: Articulate Vowels and Consonants properly and answer a series of questions about main idea and supporting ideas after listening to audio texts and will be able to use expressions for Greetings and Leave takings, Complaining and Apologizing.

- CO3: Understand stress and listen for global comprehension and summarize what is listened to and will be able to use expressions for Permissions, Requesting, Inviting.

- CO4: Apply the rules of stress and intonation while reading a text; will be able to speak on short topics and will also be able to use expressions for Asking for and giving Information/Directions; Suggesting/Opinion giving.

- CO5: Write and enact Dialogues/Role Plays and practice topics from Science and Technology - using PPT slides and neutralize accent

SUGGESTED READING

1) Infotech English, Maruthi Publications (with Compact Disc).

2) Exercises in Spoken English Part 1,2,3,4, OUP and CIEFL.

3) English Pronunciation in use- Mark Hancock, Cambridge University Press.

4) English Phonetics and Phonology-Peter Roach, Cambridge University Press.

5) English Pronunciation in use- Mark Hewings, Cambridge University Press.

6) English Pronunciation Dictionary- Daniel Jones, Cambridge University Press.

7) English Phonetics for Indian Students- P. Bala Subramanian, Mac Millan Publications.