TECHNICAL ENGLISH PRACTICAL
Course Code: 24CSS120 P

Applicable to all B. Tech. - II Semester

(CSE, EEE, ME)

L -0 T-0 P-2 C-1

COURSE OVERVIEW:

The Lab sessions will focus on the production and practice of sounds of language and familiarizes the students with the use of English in everyday situations both in formal andinformal contexts.

Course Objectives:

1. To facilitate computer-assisted multi-media instruction enabling individualized andindependent language learning and to sensitize students to the nuances of English speech sounds, word accent, intonation and rhythm.

2. To bring about a consistent accent and intelligibility in students' pronunciation of English by providing an opportunity for practice in speaking and to train students to use language appropriately for public speaking and interviews

Course Outcomes:

Students will be able to attain

1. Better understanding of nuances of English language through audio- visual experienceand group activities.
2. Speaking skills with clarity and confidence which in turn enhances theiremployability skills and will be able to neutralize accent for intelligibility.

Articulation Matrix
(Program Articulation Matrix is formed by the strength of correlation of COs with POs and PSOs. The strength of correlation is indicated as 3 for substantial (high), 2 for moderate (medium) correlation, and 1 for slight (low) correlation)

CO /PO / PSO	PO1	PO2	PO3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO 12	PS O1	P S O 2	PS O3	P S O 4
CO1	-	2	-	-	-	-	-	-	-	3	1	-	-	-	-	-
CO2	-	-	-	1	-	-	-	-	2	3	-	-	1	-	-	-

Unit-I Listening Skills **(15 hours)**

Listening for general content, listening to fill up information, intensive listening for specific information

Unit-II Speaking Skills **(15 hours)**

Oral practice: Just a minute (JAM) sSessions describing objects/situations/people, role play – individual / group activities

Total -30 hours

Exercise – I: Understand: Listening Skill- Its importance – Purpose- Process- Types- Barriers of Listening. Practice: Introduction to Phonetics – Speech Sounds – Vowels andConsonants. ICS Lab: Understand: Communication at Work Place- Spoken vs. Written language. Practice: Ice-Breaking Activity and JAM Session- Situational Dialogues –Greetings – Taking Leave – Introducing Oneself and Others.

Exercise – II: Understand: Structure of Syllables – Word Stress and Rhythm– Weak Formsand Strong Forms in Context. Practice: Basic Rules of Word Accent - Stress Shift - Weak Forms and Strong Forms in Context: Understand: Features of Good Conversation – Non- verbal Communication. Practice: Situational Dialogues – Role-Play- Expressions in VariousSituations –Making Requests and Seeking Permissions - Telephone Etiquette.

Exercise - III Understand: Intonation-Errors in Pronunciation-the Influence of Mother Tongue (MTI) Practice: Common Indian Variants in Pronunciation – Differences in British and American Pronunciation. Understand: How to make Formal Presentations. Practice: Formal Presentations

Exercise – IV Understand: Listening for General Details. Practice: Listening ComprehensionTests. ICS Lab: Understand: Public Speaking – Exposure to Structured Talks. Practice: Making a Short Speech – Extempore.

Exercise – V: Understand: Listening for Specific Details. Practice: Listening Comprehension Tests. Understand: Interview Skills. Practice: Mock Interviews.

REFERENCE BOOKS:

1. (2022). English Language Communication Skills – Lab Manual cum Workbook. Cengage Learning India Pvt. Ltd.

2. Shobha, KN & Rayen, J. Lourdes. (2019). Communicative English – A workbook. Cambridge University Press

3. Kumar, Sanjay & Lata, Pushp. (2019). Communication Skills: A Workbook. Oxford University Press

4. Board of Editors. (2016). ELCS Lab Manual: A Workbook for CALL and ICS LabActivities. Orient Black Swan Pvt. Ltd.

5. Mishra, Veerendra et al. (2020). English Language Skills: A Practical Approach.Cambridge University Press

TECHNICAL ENGLISH

Course Code-**24CSS120 T**

Applicable to I B. Tech. - II Semester

(CSE, EEE, ME)

L -1 T-1 P-0 C-2

Course Outline

This course aims to train the first year BE/B tech students in basic principles of English language, enabling them to use active and passive vocabulary in different academic and professional contexts, developing their LSRW skills, namely listening, speaking, reading and writing skills thereby improving their proficiency in oral and written communication in technical English.

Course Objectives:

To enable students to

1. Impart knowledge about the importance of vocabulary and grammar.
2. Help the students of engineering and technology develop a strong base in the use of English.
3. Improve the reading skills of the students so as to enable them to communicate with confidence in English.
4. Develop their basic speaking skills in order to deliver impromptu talks, participatewith confidence in conversations.
5. Enable students to write / draft effective essays and emails for effectivecommunication.

Course Outcomes:

Up on successful completion of this course, student will be able to:

1. To acquire an understanding of the rules of grammar.
2. To have a command of basic vocabulary related to different subject areas.
3. To have a grasp on the mechanics of writing and express their ideas through constructionof simple texts.
4. To assess the skills of writing business letters in various situations and generate skills of writing business letters, emails, reports, resumes and CVs.
5. To categorize the various structures of technical writing and learn to use them in a professional context.

Articulation Matrix

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CO /PO / PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CO1	-	-	-	-	-	1	-	-	2	3	-	-	-	-	-	-
CO2	-	1	-	2	-	-	-	-	-	3	-	-	1	-	-	-
CO3	-	-	-	-	-	-	-	2	-	3	-	1				
CO4	-	-	-	-	-	1	2	-	-	3	-	-				
CO5	-	-	-	3	-	2	-	-	-	-	-	-				

Course Content:

UNIT – I (6 Hours)

Grammar: Introduction to Grammar, Parts of Speech Vocabulary:

words often confused, one - word substitutes

Reading: Reading for the Main idea, finding specific information, reading for detail, Reading and transferring information, Understanding the attitudes.

Writing: Writing short messages that include certain information, Avoid discriminatory writing

UNIT – II (6 Hours)

Grammar: Sentence and Sentence Construction

Vocabulary: Homophones, Homographs, Homonyms

Reading: Reading for Opinion and writer's purpose, Reading for interpreting the visual reading for gist.

Writing: Letter writing (language to be used in a formal letter), Leave letter, letter of apology, Complaint letters, enquiry letters with replies, E-correspondence

UNIT – III (6 Hours)

Grammar: Verb - Tense

Vocabulary: Word Formation – prefix and suffix.

Reading: Reading for inference and Global meaning, Understanding Vocabulary and grammar in a short text

Writing: Significance, types, steps, formats of a report, Language and structure to be usedin a

formal report, model reports – assignments

UNIT - IV (6 Hours)

Grammar**:** Voice and Reported speech Vocabulary**:**

Acronyms & Idioms and Phrases

Reading**:** Reading for understanding short, real-world messages etc.

Writing**:** Types, purpose and design of Résumé, Differences among Bio-data, CurriculumVitaé and Résumé, Methods to build a winning Résumé Writing an effectiveCover Letter

UNIT – V (6 Hours)

Grammar: Concord, Modal Auxiliary, Question Tags. Vocabulary:

Business Vocabulary & Technical vocabulary

Reading: Reading for detailed comprehension of detailed material; Skimming and Scanning.

Writing: Review of technical articles, Technical research paper writing

Total: 30 hours

TEXT BOOKS:

1. Elango.K, & Co., "Resonance" Cambridge University Press India Pvt.Ltd. New Delhi, 2013.

2. Dhanavel, S.P. English and Communication Skills for Students of Science and Engineering. Orient Black swan, Chennai. 2011.

Reference Books:

1. Grussendorf, Marion, English for Presentations, Oxford University Press, Oxford: 2007
2. Kumar, Suresh. E. Engineering English. Orient Blackswan: Hyderabad, 2015
3. Means, L. Thomas And Elaine Langlois, English & Communication For Colleges. Cengage Learning, Usa: 2007
4. Raman, Meenakshi and Sharma, Sangeetha- Technical Communication Principles and Practice. Oxford University Press: New Delhi, 2014.
5. Rizvi, Ashraf. M. Effective Technical Communication. Tata McGraw-Hill, New Delhi.2005
6. Rutherford, Andrea. J Basic Communication Skills for Technology. Pearson, New Delhi. 2001.

B.Tech. Electrical and Electronics Engineering (EVT)
Semester-II

L-3, T-1, P-0, C-4

BSEEE0400A: Introduction to Engineering Mathematics with Applications– II

Course Objective:

- To apply elementary transformations to reduce the matrix into the echelon form and normal form to determine its rank and interpret the various solutions of the system of linear equations, And to identify the special properties of a matrix such as the eigen value, eigen vector
- To provide students with an introduction to the theory of ordinary differential equations through applications, methods of solution
- To provide students with an introduction to the theory of Partial Differential Equations through applications, methods of solution
- To apply Probability and Statistic concepts to real-world problems in computer science and related fields. Empower students to develop statistical reasoning as well as the understanding and interpretation of probabilistic results
- To give understanding of the theoretical and practical aspects of the use of numerical methods

Course Outcomes (COs)

1. Understand the basic concept of the matrix
2. Apply various methods like – direct integration, separation of variables and integrating factor method, variation of parameter to solve differential equations
3. Analyze the physical problem to establish a mathematical model to solve PDEs in engineering.
4. Evaluate probability distributions models
5. Evaluate numerical integration

Articulation Matrix

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CO/PO/PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	1	1	1	1	1	1	1	1	1	1	2	3	1
CO2	3	2	1	1	1	1	1	1	1	1	1	1	2	3	1
CO3	3	2	1	1	1	1	1	1	1	1	1	1	2	3	1
CO4	3	2	1	1	1	1	1	1	1	1	1	1	2	3	1
CO5	3	2	1	1	1	1	1	1	1	1	1	1	2	3	1

High-3 Medium-2 Low-1

Unit I: Matrices **10 Hours**

Rank of a Matrix (by reducing it to elementary transformation, Echelon & normal forms), solution of simultaneous equations by elementary transformation methods, consistency & inconsistency of equations, Eigen values & Eigen vectors, Cayley- Hamilton theorem.

Unit II:Differential Equation **15 Hours**

First-order differential equations (Separable, Homogeneous, Linear, Exact), linear differential equations with constant coefficients, Euler- Cauchy equations. Solution of second order differential equations by change of dependent and independent variables, Method of variation of parameters for second order differential equations. Simple applications.

Unit III: Partial Differential Equations and its Applications : **15 Hours**

Partial differential equations of first order, Linear partial differential equations of II order with constant coefficients and their classifications - parabolic, elliptic and hyperbolic with illustrative examples, Method of separation of variables. Wave and Heat equation of one-dimensions.

Unit IV: Probability and Statistics **10 Hours**

Introduction, Probability and events, Probability Theorems, Conditional Probability, Baye's Theorem, Binomial, Poisson distributions, Method of least squares and curve fitting - straight line.

Unit V: Numerical Analysis **10 Hours**

Solution of polynomial and transcendental equations - bisection, Newton-Raphson, Finite differences, Newtons forward and backward interpolation formulae. Trapezoidal and Simpsons 1/3rd rules for numerical integration

Total: 60 Hours

Reference Books:

1. Ramana B.V., Higher Engineering Mathematics, Tata McGraw Hill New Delhi.
2. Dean G. Duffy, Advanced Engineering Mathematics with MATLAB, CRC Press.
3. S.L. Ross, Differential equation, John Wiley and Sons, Inc.
4. Iyenger M. K. Jain & R. K. Jain, Numerical Methods for scientific and engineering computation, Wiley Eastern (New Age)
5. Amaranath T. , An Elementary Course in Partial Differential Equation , Alpha science Publication.
6. M. Ray and Har Swarup Sharma, Mathematical Statistics

List of e-Learning Resources:

1. https://nptel.ac.in/
2. https://www.coursera.org/

Subject Expert	**Academic Coordinator**	**HoD**	**Appointed Senior Faculty by DOAA**

Mandsaur University

B. Tech- Electrical and Electronics Engineering (EVT)
Semester- II

L-2 T-1 P-2 C-4

ESEEE0400A: Sustainable Energy

Course Objective:

- Awareness of environmental issues and the global initiatives towards attaining sustainability.
- The student should realize the potential of technology in bringing in sustainable practices.
- To introduce the concept of sustainable energy and the interaction between cost competitiveness, security of supply and environmental responsibility.
- To make students aware of the link between energy and the environment, with a particular focus on climate change, air pollution and energy access.
- To provide students with the basic tools to assess energy trends and their policy implications.
- To introduce energy efficiency and renewable energy sources and technologies.

Course Outcomes

1. Understand the various kinds of sources of energy: Conventional and Non-Conventional Sources of Energy
2. Apply the nature and characteristics of different terms related to solar thermal energy, its utilization.
3. Apply the concept of Geothermal Energy and its application in power generation.
4. Apply the concept of working of MHDG / Fuel Cell / Wind Energy Conversion Systems as modern Technology and Non-Conventional Sources of Energy.
5. Analysis the need of Bio Mass Energy Conversion systems as a non-conventional source of energy in modern times

Articulation Matrix

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Cos/PO/PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	3	3	3	3	3	3	3	2	2	2	3	3	1	3
CO2	-	-	2	2	2	3	-	-	1	1	2	2	2	2	2
CO3	2	1	1	1	2	2	2	2	3		3	2	2	2	2
CO4	3	2	-	2	3	2	2	2	2	2	3	3	3	2	3
CO5	2	2	2	2	2	-	-	-	-	2	2	2	2	3	2

High-3 Medium-2 Low-1

Unit-I Introduction — 09 Hours

Various non-conventional energy resources- introduction, availability, classification, relative merits and demerits

Unit-II Solar Thermal Energy — 09 Hours

Solar radiation, flat plate collectors and their materials, applications and performance, focusing of collectors and their materials, applications and performance; solar thermal power plants, thermal energy storage for solar heating and cooling, limitations

Solar Cells: Theory of solar cells, solar cell materials, solar cell array, solar cell power plant, limitations

Unit-III Geothermal Energy **09 Hours**

Resources of geothermal energy, thermodynamics of geo-thermal energy conversion-electrical conversion, non-electrical conversion, environmental considerations

Magneto-hydrodynamics (MHD): Principle of working of MHD power plant, performance and limitations

Fuel Cells: Principle of working of various types of fuel cells and their working, performance and limitations

Unit-IV Wind Energy **09 Hours**

Wind power and its sources, site selection, criterion, momentum theory, classification of rotors, concentrations and augments, wind characteristics. Performance and limitations of energy conversion systems

Unit-V Bio-mass, Ocean, Thermal, Tidal Energy **09 Hours**

Bio-mass: Availability of bio-mass and its conversion theory, Bio-gas plants

Ocean Thermal Energy Conversion (OTEC): Availability, theory and working principle, performance and limitations

Wave and Tidal Wave: Principle of working, performance and limitations. Waste recycling plants

Total 45 Hours

Suggested List of Experiment:

1. Study of bio gas plant.
2. Study of V/I, V/P and MPP characteristics of solar module.
3. Study of V-I characteristics of fixed solar panel, i.e. without tracking the sun.
4. Study of V-I characteristics of solar panel according to incident angle of rays of light keeping light source at fixed position and moving solar panel in manual mode.
5. Measurement of voltage and current of wind energy-based DC supply with change in angle of lades.
6. Study of solar cooker.
7. Study of solar water heater.
8. Study of solar photo-voltaic cells.

Total 75 Hours

References: -

1. Raja etal, “Introduction to Non-Conventional Energy Resources” Scitech Publications.
2. John Twideu and Tony Weir, “Renewal Energy Resources” BSP Publications, 2006.
3. M.V.R. Koteswara Rao, “Energy Resources: Conventional & Non-Conventional “BSP Publications,2006.
4. D.S. Chauhan,” Non-conventional Energy Resources” New Age International.
5. C.S. Solanki, “Renewal Energy Technologies: A Practical Guide for Beginners” PHI Learning.
6. Peter Auer, "Advances in Energy System and Technology". Vol. 1 & II Edited by Academic Press.
7. Non-Conventional Sources of Energy G. D. Rai: Khanna Publishers New Delhi

Learning Resources:

1. https://onlinecourses.nptel.ac.in/noc23_me138/preview

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Subject Expert	**Academic Coordinator**	**HoD**	**Appointed Senior Faculty by DoAA**

B.Tech Electrical& Electronics Engineering (EVT)

Semester-II

L-2 T-1 P-2 C-4

ESEEE0300A: Basic Electrical & Electronics Engineering

Course Objectives

- To learn about basics of AC & DC circuits
- To define and understand the basics of magnetic circuits and transformer
- To analyze the various constructional features of concepts of rotating electric machines
- To understand the concepts of digital electronics
- To examine the working of various electronic components and circuits

Course Outcomes (COs)

1. Remember the fundamental concepts of electrical circuits and its parameters
2. Understand the different types of transformer and its properties
3. Apply the concepts of Rotating Electric machines
4. Analyze the concept of Digital Electronics
5. Evaluate the Electronic Components and Circuits

Articulation Matrix

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CO/PO/PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	1	-	-	-	-	-	-	-	-	1	-	-	-
CO2	2	3	1	-	-	-	-	-	-	-	-	-	1	-	-
CO3	1	2	3	1	-	-	-	-	-	-	-	1	-	-	-
CO4	1	1	2	2	-	-	-	-	-	-	-	-	-	1	-
CO5	1	1	2	1	1	-	-	-	-	-	-	-	-	-	-

High-3 Medium-2 Low-1

Unit I Electrical circuit analysis **09Hours**

Voltage and current sources, dependent and independent sources, source conversion, DC circuits analysis using mesh & nodal method, Thevenin's & superposition theorem, star-delta transformation. 1-phase AC circuits under sinusoidal steady state, active, reactive and apparent power, physical meaning of reactive power, power factor, 3-phase balanced and unbalanced supply, star and delta connections.

Unit II Transformers **09Hours**

Review of laws of electromagnetism, mmf, flux, and their relation, analysis of magnetic circuits. Single-phase transformer, basic concepts and construction features, voltage, current and impedance transformation, equivalent circuits, phasor diagram, voltage regulation, losses and efficiency, OC and SC test.

Unit III Rotating Electric machines **09Hours**

Constructional details of DC machine, induction machine and synchronous machine, Working principle of 3-Phase induction motor, Emf equation of 3-Phase induction motor, Concept of slip in 3- Phase induction motor, Explanation of Torque-slip characteristics of 3-Phase induction motor, Classification of self-excited DC motor and generator.

Unit IV Digital Electronics **09Hours**

Number systems used in digital electronics, decimal, binary, octal, hexadecimal, their complements, operation and conversion, floating point and signed numbers, Demorgan's theorem, AND, OR, NOT, NOR, NAND, EX-NOR, EX-OR gates and their representation, truth table, half and full adder circuits, R-S flip flop, J-K flip flop.

Unit V Electronic Components and Circuits **09Hours**

Introduction to Semiconductors, Diodes, V-I characteristics, Bipolar junction transistors (BJT) and their working, introduction to CC, CB & CE transistor configurations, different configurations and modes of operation of BJT, DC biasing of BJT.

Total: 45 Hours

PRACTICALS: -

1. Verifications of Thevenin's Superposition theorem.
2. Study of Transformer, name plate rating, determination of ratio and polarity.
3. Determination of equivalent circuit parameters of a single-phase transformer by O.C. and S.C. tests and estimation of voltage regulation and efficiency at various loading conditions and verification by load test.
4. Separation of resistance and inductance of choke coil.
5. Measurement of various line & phase quantities for a 3-phase circuit.
6. Identification of different Electronics components.
7. Observing input and output waveforms of rectifiers.
8. Transistor application as amplifier and switch.
9. Verification of truth table for various gates.

Total: 75 Hours

References:

1. Vincent Del Toro, Electrical Engineering Fundamentals, PHI Learning, II Edition
2. S.Ghosh, Fundamentals of Electrical and Electronics Engineering, PHI, II Edition.
3. Millman, Halkias & Parikh, Integrated Electronics, Mc Graw Hill, II Edition
4. Nagrath & Kothari, Basic Electrical Engineering, III Edition TMH.
5. J.S. Katre, Basic Electronics Engg, Max Pub. Pune.
6. Hughes, Electrical and Electronic Technology, Pearson Education IX Edition

List of e-Learning Resources:

1. https://onlinecourses.nptel.ac.in/noc22_ee113
2. https://www.udemy.com/course/basic-electrical-engineering-electrical-engineering

Subject Expert	**Academic Coordinator**	**HoD**	**Appointed Senior Faculty by DoAA**

Mandsaur University

B.Tech. Electrical and Electronics Engineering (EVT)
Semester-II

L-2T-1P-2C-4

ESEEE0500A: Problem Solving and Python Programming

Course Objectives

- To learn the basics of algorithmic problem solving.
- To learn to solve problems using Python conditionals and loops.
- To define Python functions and use function calls to solve problems.
- To use Python data structures - lists, tuples, dictionaries to represent complex data.
- To do input/output with files in Python.

Course Outcomes (COs)

1. Understand Python programming fundamentals including installation, algorithmic problem-solving.
2. Apply fundamental concepts of conditionals, control flow, arrays, and strings in Python programming.
3. Apply fundamental Python programming concepts including functions, lists, tuples, and dictionaries in solving various computational problems.
4. Understand the file operations, errors, and exceptions handling
5. Create Python GUI applications with widget-based interfaces and MySQL database.

Articulation Matrix

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CO2	2	3	2	1	-	-	-	1	-	1	-	1	3	1	1
CO3	3	2	3	1	1	-	2	2	-	1	-	1	2	2	1
CO4	2	2	1	3	2	1	-	1	-	2	-	1	3	1	1
CO5	3	3		1	2		1	-	-	1	-	2	3	1	1

High-3 Medium-2 Low-1

UNIT I: Introduction to Python Programming **7Hours**

Introduction to Python and installation, pseudo code, flow chart, programming language, algorithmic problem solving, simple strategies for developing algorithms, data types: Int, float, Boolean, string, and list; variables, expressions, statements, operators, comments; modules, functions--- function and its use, flow of execution, parameters and arguments.

UNIT II: Conditionals and Control Flow, Array,Strings **7 Hours**

Conditionals: Boolean values and operators, conditional (if), alternative (if-else), chained conditional (if-elif-else);
Control Flow: state, while, for, break, continue, pass;
Python arrays, Access the Elements of an Array, array methods.
Strings: string slices, immutability, string functions and methods, string module;

UNIT III: Functions, Lists, Tuples, Dictionaries **9 Hours**

Functions: return values, parameters, local and global scope. Function composition, recursion;
Lists: list operations, list slices, list methods, list loop, mutability, aliasing, cloning lists, listParameters, Advanced list processing - list comprehension;
Tuples: tuple assignment, tuple as return value;
Dictionaries: operations and methods;

UNIT IVFiles, Modules, Packages **11Hours**

Files and exception: text files, reading and writing files, format operator; command line arguments, errors and exceptions, handling exceptions, modules; packages.

UNIT V: Python GUI and Python database connectivity **11 Hours**

Python GUI Programming: Widgets: Button, Canvas, Checkbutton, Entry, Frame,Label, Listbox, Menubutton, Menu, Message, Radiobutton, Scale, Scrollbar, text, Toplevel, Spinbox, PanedWindow, LabelFrame, tkMessagebox. Handling Standard attributes and Properties of Widgets.

Database Connectivity: Connecting to a MySQL database from Python, Configuring the MySQL connection, Designing the Python GUI database, Using the INSERT command, Using the UPDATE command, Using the DELETE command, Storing and retrieving data from MySQL database.

PRACTICAL

1. Write a python program to add two numbers.
2. Write Python programs to demonstrate the following:
   i) input( ) ii) print( ) iii) 'sep' attribute
   iv) 'end' attribute v) replacement Operator ({ })
3. Write a python program to print a number ispositive/negative using if-else
4. Write a python program to find largest numberamong three numbers.
5. Write a python Program to read a number anddisplay corresponding dayusingif_elif_else?
6. Demonstrate the following control transfer statements in Python with suitable examples.
   i) break ii) continue iii) pass
7. Write Python programs to print the following Patterns using loop:
   (I)Star pattern (II) Alphabet Pattern (III) Number Pattern
8. Demonstrate the following functions/methods which operate on strings in Python with suitable examples:
   i) len( ) ii) strip( ) iii) rstrip( ) iv) lstrip ( ) v) find( )
   (vi) rfind( ) vii) index( ) viii) rindex()
9. Demonstrate the following with suitable example programs:
   i) List slicing ii) List Comprehensions
10. Demonstrate the different ways of creating tuple objects with suitable example programs
11. Write a program to perform addition of two square matrices.
12. Demonstrate the different ways of creating dictionary objects with suitable example programs
13. Demonstrate the following kinds of Parameters used while writing functions in Python.
    i) Positional Parameters ii) Default Parameters
    iii)Keyword Parameters iv) Variable length Parameters
14. Write a Python program to demonstrate Local and Global variables
15. Create a GUI Application with mysql data base

Total: 75 Hours

Reference(s)

1. Allen B. Downey, "Think Python : How to Think like a Computer Scientist", 2nd Edition, O'Reilly Publishers, 2016.
2. Karl Beecher, "Computational Thinking: A Beginner's Guide to Problem Solving and programming", 1st Edition, BCS Learning & Development Limited, 2017.
3. Paul Deitel and Harvey Deitel, "Python for Programmers", Pearson Education, 1st Edition, 2021.
4. G Venkatesh and Madhavan Mukund, "Computational Thinking: A Primer for Programmers and Data Scientists", 1st Edition, Notion Press, 2021.
5. John V Guttag, "Introduction to Computation and Programming Using Python: With Applications to Computational Modeling and Understanding Data'', Third Edition, MIT Press 2021
6. Eric Matthes, "Python Crash Course, A Hands - on Project Based Introduction to Programming", 2nd Edition, No Starch Press, 2019.
7. Martin C. Brown, "Python: The Complete Reference", 4th Edition, Mc-Graw Hill,2018

List of e-Learning Resources:

1. https://www.python.org/

Mandsaur University

Subject Expert **Academic Coordinator** **HoD** **Appointed Senior Faculty by DoAA**

I Year II Sem
Communication Skills & Professionalism-Practical (LSCE121 P)

L0 T0 P2 C1

Course Objectives: This course will enable students to:

1. Develop proficiency in effective communication skills across personal, academic, and professional contexts
2. Cultivate teamwork, leadership, and problem-solving abilities, promoting effective communication and collaboration skills.
3. Become responsible global citizens by raising awareness of ethics, environmental sustainability, and cultural diversity.

Course Outcomes (COs): Upon completion of this unit students will:

CO1. Apply proficiency in communication skills through reading, writing, listening & speaking.
CO2. Apply communication skills in collaborating and conflict resolution in teamwork.
CO3. Apply ethical reasoning, principles and environmental awareness through analysis, writing, discussion, and interview preparation

Articulation Matrix

(Program Articulation Matrix is formed by the strength of correlation of COs with POs and PSOs. The strength of correlation is indicated as 3 for substantial (high), 2 for moderate (medium) correlation, and 1 for slight (low) correlation)

CO / PO / PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	-	3	-	-	-	-	-	-	1	-	-	-
CO2	-	3	-	-	-	2	-	-	1	-	-	-
CO3	-	3	-	-	-	-	-	2	1	-	-	-

PRACTICAL

1. Reading comprehension and vocabulary enhancement
2. Writing skills and grammar practice
3. Listening and speaking skills in diverse settings and discussion
4. Environmental advocacy role-play
5. Reading and discussion: Case study analysis
6. Writing and reflection: Teamwork essay
7. Ethical dilemmas & decision-making
8. Presentation skills on ethical topics
9. Formal reports & language proficiency
10. Text analysis and summarization
11. Environmental issue report

Total: 30 Hours

Reference(s)

- Birdseye, Stephen A. *Thinking Through Communication*. Broadview Press, 2018.
- Schwartz, Melvin. *The Art of Communication: A Reader's Guide to Writing and Speaking*. Broadview Press, 2016.
- Technical Communication for Engineers (2nd Edition) by Gary J. Thietten and Elizabeth A. Meuller

- The Secret to Getting Ahead in Business and Life by Mark Goulston
- How to Discuss What Matters Most by Douglas Stone and Bruce Patton

List of e-Learning Resource

Reading

- Purdue Online Writing Lab (https://owl.purdue.edu/owl/) - Offers tips for identifying main ideas, summarizing information, and making inferences.
- Khan Academy (https://www.khanacademy.org/) - Covers active reading and close reading strategies.
- National Geographic (https://www.nationalgeographic.com/magazine) - Articles on climate change, biodiversity conservation, and sustainable living.
- Scientific American (https://www.scientificamerican.com/) - Provides information on these topics as well.

Listening

- Listen & Learn (https://www.listenandlearn.org/) is a website that provides a variety of audio recordings on a wide range of topics. You can listen to the recordings and then answer comprehension questions to check your understanding.
- TED Talks (https://www.ted.com/talks) are a great way to improve your listening skills and learn about new ideas. TED Talks are short, informative talks on a variety of topics, given by experts in their fields.

Speaking

- Toastmasters International (https://www.toastmasters.org/find-a-club) is a non-profit organization that provides a supportive and encouraging environment for people to practice their public speaking skills.
- italki (https://www.italki.com/) is a website that connects you with native speakers of your target language for online language lessons. You can use italki to find a conversation partner to practice your speaking skills with.

Writing

- The Grammarly Blog (https://www.grammarly.com/blog/) publishes articles on a variety of writing topics, including grammar tips, style advice, and tips for improving clarity and conciseness.
- The University of North Carolina at Chapel Hill Writing Center (https://writingcenter.unc.edu/) has a helpful handout on writing research papers.
- Business Writing Guide (https://learn.utoronto.ca/programs-courses/courses/3213b-mastering-business-writing) from the University of Toronto has a variety of resources on writing business reports.

I Year II Sem
Communication Skills and Professionalism-Theory (CSS121-T)

L1 T1 P0 C3

Course Objectives: This course will enable students to:

1. Develop proficiency in effective communication skills across personal, academic, and professional contexts
2. Cultivate teamwork, leadership, and problem-solving abilities, promoting effective communication and collaboration skills.
3. Become responsible global citizens by raising awareness of ethics, environmental sustainability, and cultural diversity.

Course Outcomes (COs): Upon completion of this unit students will:

- **CO1.** Understand effective communication skills principles through reading, writing, listening & speaking.
- **CO2.** Understand and apply communication in collaboration and teamwork.
- **CO3.** Understand and apply ethical reasoning, principles and polished communication skills.
- **CO4.** Apply English proficiency and environmental awareness through analysis, writing, discussion, and interview preparation.

Articulation Matrix

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CO1	-	-	-	-	-	-	-	-	2	3	-	-	-	-	1
CO2	-	2	-	2	-	-	-	-	-	3	-	-	1	-	2
CO3	-	-	-	-	-	-	-	2	-	3	-	1	-	-	1
CO4	-	-	-	-	-	1	2	-	-	3	-	-	2	-	2

Unit 1: Communication Skills Mastery **08 Hours**

- **Reading**: comprehension strategies to understand written communication effectively.
- **Writing**: practical exercises and assignments, enhancing vocabulary and grammar usage.
- **Listening**: active listening techniques to comprehend spoken communication accurately.
- **Speaking**: interactive sessions and role-plays to improve speaking skills and communication fluency.
- **Vocabulary and Grammar**: language proficiency by integrating vocabulary and grammar learning into communication activities, interactive sessions, role-plays, and practical exercises to develop proficiency in listening, speaking, reading, and writing.
- Effective communication in diverse settings, fostering academic and professional success.

Unit2: Teamwork Excellence **08 Hours**

- **Reading**: Explore the importance of effective communication, collaboration, and conflict resolution through relevant texts and articles.
- **Writing**: Practice articulating ideas on teamwork concepts through reflective essays and reports.
- **Listening**: Engage in discussions and listening activities to understand leadership roles and conflict resolution strategies within teams.
- **Speaking**: Participate in role-plays and group discussions to develop communication and negotiation skills within a team context.
- **Grammar and Vocabulary**: Enhance language proficiency through grammar exercises and vocabulary expansion related to teamwork and leadership concepts.

Unit3: Ethics and Integrity **06 Hours**

- **Speaking**: Students will discuss ethical dilemmas, engage in role-plays for ethical decision-making, and debate contentious issues.
- **Presentation Skills**: They'll refine their abilities by delivering speeches on ethical topics, emphasizing clarity, persuasion, and professionalism.
- **Writing**: Students will learn to create formal reports, seek ethical approval for research, raise awareness through notices, and outline ethical guidelines in memos.
- **Language Proficiency**: Vocabulary and grammar instruction will be integrated to enhance proficiency in spoken and written communication.

Unit 4: Environmental Sustainability Awareness **08 Hours**

- **Reading**: Analyze articles and texts related to climate change, biodiversity conservation, and sustainable living practices.
- **Writing**: Compose reports, essays, and reflections on environmental issues, integrating vocabulary and grammar related to the topic.
- **Listening**: Engage in listening activities, such as lectures or podcasts, focusing on environmental discussions and case studies.
- **Speaking**: Participate in group discussions, debates, and presentations on environmental topics, utilizing vocabulary and grammar effectively.
- **Vocabulary and Grammar**: Expand language proficiency by learning environmental terminology and applying grammatical structures in context.
- **Interview Handling Session**: Conduct sessions on interview preparation and handling, focusing on environmental job opportunities or related fields, to enhance practical communication skills.

Total: 30 Hours

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